EXTERNAL SCIENTIFIC REPORT

APPROVED: 28 November 2016

doi:10.2903/sp.efsa.2016.EN-1141

Closing gaps for performing a risk assessment on *Listeria monocytogenes* in ready-to-eat (RTE) foods: activity 1, an extensive literature search and study selection with data extraction on *L. monocytogenes* in a wide range of RTE food

Anna Jofré[1], Margarita Garriga[1], Teresa Aymerich[1], Fernando Pérez-Rodríguez[2], Antonio Valero[2], Elena Carrasco[2] and Sara Bover-Cid[1]

[1]IRTA, Monells, Spain, [2]University of Cordoba, Córdoba, Spain

Abstract

The objective of this work is to describe the occurrence and levels of contamination of *Listeria monocytogenes* in ready-to-eat (RTE) foods (review question 1) and the risk factors of the *L. monocytogenes* contamination in different RTE foods (review question 2) using an extensive literature search. Literature searches covering the 1990-2015 period resulted in 308 eligible records. Data extraction was carried out using a Distiller SR questionnaire including general information about the study, RTE product (population) and analytical methodology, risk factors (exposure and comparators) and results (outcome) about prevalence and concentration of *L. monocytogenes*. Up to 778 data were extracted regarding the outcome "prevalence", mostly from dairy products (N=276), meat products (N=173) and seafood (N=151). Semi-quantitative (N=244) and quantitative (N=14) data on *L. monocytogenes* concentration was less available. The number of studies not detecting the pathogen was considerable, i.e. the 25th percentile equalled zero in case of meat, dairy, produce and other RTE food categories. For produce, the median value was also zero. In almost all sub-categories, a wide range of prevalence values were recorded. The distribution of the prevalence was asymmetric, with outliers as well as extreme values. The median of the prevalence was below 10% for almost all sub-categories, except for fermented sausages (10%), cold smoked fish (13%), smoked fish (12%) and cured/salted fish (12%). The serotypes 1/2a, 1/2b, 1/2c and 4b were the most reported in the reviewed studies for all food categories, except for produce. The impact of some of the (risk) factors considered in this review was hard to assess, as only few studies dealt with the impact of an intervention on the *L. monocytogenes* prevalence in naturally exposed RTE foods. Among them, an eradication programme caused a drastic reduction of *L. monocytogenes* prevalence in the environment and in the RTE product (smoked rainbow trout).

Key words: extensive literature review, *Listeria monocytogenes*, ready-to-eat food, prevalence, levels, risk factors

Requestor: European Food Safety Authority

Question number: EFSA-Q-2015-00505

Correspondence: biohaz@efsa.europa.eu

Acknowledgements: The authors would like to thank the EFSA staff members: Winy Messens and Sandra Correia as well as the members of the Working Group on *Listeria monocytogenes* contamination of ready-to-eat foods: Kostas Koutsoumanis, Roland Lindqvist, Moez Sanaa, Panagiotis Skandamis, Niko Speybroeck, Johanna Takkinen and Martin Wagner for the support, revisions and suggestions provided during the development of the present procurement activity and report.

Suggested citation: Anna Jofré, Margarita Garriga, Teresa Aymerich, Fernando Pérez-Rodríguez, Antonio Valero, Elena Carrasco and Sara Bover-Cid, 2016. Closing gaps for performing a risk assessment on *Listeria monocytogenes* in ready-to-eat (RTE) foods: activity 1, an extensive literature search and study selection with data extraction on *L. monocytogenes* in a wide range of RTE food. EFSA supporting publication 2016:EN-1141. 184 pp. doi:10.2903/sp.efsa.2016.EN-1141

ISSN: 2397-8325

Summary

The project "Closing gaps for performing a risk assessment on *Listeria monocytogenes* in ready-to-eat (RTE) foods: activity 1, an extensive literature search and study selection with data extraction on *L. monocytogenes* in a wide range of RTE food" was awarded by EFSA to a Spanish consortium comprising the Institut de Recerca i Tecnologia Agroalimentàries (IRTA, project coordinator) and the Universidad de Córdoba (UCO).

The overall objective of the project is to perform an extensive literature search aiming: (1) to describe the occurrence and levels of contamination of *L. monocytogenes* in RTE foods (corresponding to review question 1); and (2) to describe the risk factors of the *L. monocytogenes* contamination in different RTE foods (corresponding to review question 2).

The literature searches performed by a former contractor on *L. monocytogenes* in RTE foods (i.e. RTE foods, leafy greens and melons and traditional meat products) were updated on SCI-EXPANDED and MEDLINE databases, both accessed from Thomson Reuters Web of Science™ portal. The review protocol developed by the former contractor was followed and the search strings used were validated by comparing the results of each search step obtained by the former and by the present contractor. After merging all the retrieved records identified in the different searches and removing duplicates, a total of 1,169 records were obtained within the timespan 2014-2015. Grey literature search was also performed.

The relevance of the retrieved records for review question 1, review question 2, or both was screened from the title and abstract (i.e. level 1), using criteria defined by the previous contractor. Screening questions were implemented in a DistillerSR form. The understanding of the selection criteria was previously piloted using a sub-sample of studies with satisfactory agreement within the consortium reviewers as well as with the results reported by the former contractor. The screening for relevance at level 1 resulted in 231 records included as potentially relevant (or uncertain relevance) to be submitted to the level 2 screening for eligibility (i.e. full text screening). The remaining 938 records were excluded, the main reason being the lack of prevalence or levels of *L. monocytogenes* data as an outcome.

By merging the relevant records from the updated searches (2014-2015) and the relevant records identified by the previous contractor (1990-2014), a library of 1,448 records (excluding duplicates) was obtained to proceed with the level 2 screening for eligibility. All the full-text of the relevant studies were obtained.

The criteria for eligibility and exclusion to be applied for level 2 screening were developed, and agreed with EFSA, on the basis of the key elements (i.e. PO (population and outcome) and PECO (population, exposure, comparator and outcome)) of the review questions and the study design. The screening for eligibility excluded 1,143 records, while 305 were identified as eligible to proceed with data extraction. Three further eligible records from the contractor database were added.

A data extraction form was used to collect information from the eligible studies, consisting of a number of fields grouped in several types of information, such as general information about the study, the RTE product (population) and analytical methodology, the risk factors (exposure and comparators) in relation to review question 2, and the results (outcomes) about prevalence and concentration of *L. monocytogenes*, including point estimates and estimation of the variability, as well as information about the *L. monocytogenes* serotypes.

The results of the data extraction obtained are summarised through figures and structured tables included in several Appendixes, grouped by RTE food category/sub-category.

Prevalence data was available for 778 outcomes. The RTE food category with more prevalence data are dairy products (N=276), followed by meat products (N=173), seafood (N=151), other products (N=104, including composite food and other type of products such as egg-products) and produce (N=74). Semi-quantitative data, i.e. on concentration of *L. monocytogenes*, was much less frequently reported. There were 244 outcomes with the meat products being the category with more data available. The outcome data collected come from studies and RTE foods not always comparable, due to differences in the experimental design, analytical procedures, as well as in product characteristics. The number of studies not detecting the pathogen (prevalence equal to zero) was considerable, i.e. 29.5%, 21.9%, 48.2%, 63.5%, and 52.9% of the studies dealing with meat products, seafood, dairy products, produce and other products, respectively.In almost all sub-categories, a wide rage of prevalence values were recorded. In all sub-categories, the distribution of the prevalence values was asymmetric, with several outliers as well as extreme values above the 75th percentile. The median of the prevalence was below 10% for the almost all sub-categories, except for fermented sausages (10%), cold smoked fish (13%), smoked fish (12%) and cured/salted fish (12%).

Though the present procurement aimed to describe the risk factors of the *L. monocytogenes* contamination in different RTE foods (review question 2), the impact of some of the factors considered in this review is hard to be assessed, as the studies usually do not provide the outcome (prevalence and/or level values) as a function of the risk factors. Only few of the reviewed studies aimed to assess the impact of an intervention on the *L. monocytogenes* prevalence in naturally exposed RTE foods. Among them, an eradication programme based on thoroughly cleaning and disinfecting production machines and lines caused a drastic reduction of *L. monocytogenes* prevalence in the environment and in the RTE product (smoked rainbow trout).

The serotypes 1/2a, 1/2b, 1/2c and 4b were the most reported in the reviewed studies for all food categories, except for produce.

Table of contents

Index of tables

Tables in Appendix A

Tables in Appendix B

Tables in Appendix C

Tables in Appendix D

1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

In the European Union (EU), listeriosis continues to be a serious food-borne illness, with high morbidity, hospitalisation and mortality in vulnerable populations such as pregnant women and the elderly and chronically ill, who are more susceptible to invasive listeriosis. For example in 2013, 1,763 confirmed human cases of listeriosis were reported including 191 deaths. The EU notification rate was 0.44 cases per 100,000 population in 2013 which represented an 8.6% increase compared with 2012. There was a statistically significant increasing trend of listeriosis in the EU/EEA over the period 2009-2013 (EFSA and ECDC, 2015).

The main route of transmission to humans is through consumption of contaminated food. The bacterium can be found in raw foods and in processed foods that are contaminated during and/or after processing. Because *L. monocytogenes* is able to multiply at low temperatures (2 to 4 °C), ready-to-eat (RTE) foods, as referred in Commission Regulation (EC) No 2073/2005[1] (European Commission, 2005) with a relatively long shelf-life (such as fishery products, meat products and cheese) are of particular concern. In 2007, EFSA published a Scientific Opinion of the Panel on Biological Hazards (BIOHAZ Panel) on *L. monocytogenes* risk related to RTE foods (EFSA, 2008). In this Opinion, it was concluded that the foods which could be associated with transmission of listeriosis were mostly RTE foods that support growth of *L. monocytogenes* and containing levels markedly above 100 colony forming units (CFU)/g. Surveys of foods have not only collected data on the prevalence and contamination levels of *L. monocytogenes* in different food types, but also revealed associations with other parameters including: food packaging type, preparation practices (e.g. the use of slicing machines for meat products), storage temperatures, the stage of sampling with respect to shelf-life, the lack of an effective Hazard Analysis and Critical Control Point (HACCP) system, and lack of education and training of food handlers. An EU-wide baseline survey (BLS) was conducted in 2010 and 2011 to estimate the prevalence and contamination levels in three RTE food categories at retail in accordance with Decision 2010/678/EU: packaged (not frozen) smoked or gravad fish (3,053 samples), packaged heat-treated meat products (3,530 samples) and soft or semi-soft cheeses (3,452 samples). The Part A report on the prevalence estimates and analysis of the qualitative and quantitative survey test results derived from this BLS was published in 2013 (EFSA, 2013). The EU prevalence of fish samples at the time of sampling was 10.4% and at the end of shelf-life 10.3%, while for meat and cheese samples at the end of shelf-life these prevalences were 2.07% and 0.47%, respectively. The Part B report was published in 2014 (EFSA, 2014). In this report, the statistical association was investigated between factors on which information was gathered during the baseline survey, and two outcomes, the prevalence of *L. monocytogenes* and the proportion of samples with counts exceeding 100 CFU/g, in the surveyed fish and meat products. A procurement activity started last year (RC/EFSA/BIOCONTAM/2014/01) with the overall objective to gain knowledge on the available evidence on the presence of (review question 1), and risk factors (review question 2) for *L. monocytogenes* in RTE foods in the EU, by performing a systematic review. The contractor is expected to make use of the outcome of this activity for the current procurement activity (the report was attached to the tender specifications and can be found in Annex A; the EndNote X7 library has also been made available to the successful contractor). Briefly, a single set of search terms was used to gather evidence for both review questions. An initial general search was conducted to capture the

[1] Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. OJ L 338, 22.12.2005, p. 1-26.

three RTE food categories as sampled during the EU-wide BLS (search 1), which was complemented by two extra searches to include melons (search 2) and leafy greens (search 3). Both Web of Science and MEDLINE were searched on 23/10/2014 for the search 1 and on 12/12/2014 for the searches 2 and 3. All searches were restricted to studies published since 1990. After removing duplicates, 9,571 citations remained which were screened at title and abstract level for relevance to the study question. The eligibility criteria used for both review questions are described in the report. The result of this relevance screening phase (at level 1 or title and abstract level) resulted in 1,470 records, which were loaded into an EndNote X7 library.

The objectives of the contract resulting from the present procurement procedure are to perform an extensive literature search with following objectives:

- to describe the occurrence and levels of contamination of *L. monocytogenes* in RTE foods;
- to describe the risk factors for the *L. monocytogenes* contamination in different RTE foods.

As described above, the awarded contractor resulting from this tender is expected to make use of the outcome of a former procurement activity, containing a protocol that EFSA has already in house that include the literature search strategy and study selection criteria (at level 1 relevance screening) used for both review questions (see Annex A –) and the list of references in an EndNote X7 library.

The **specific objectives** of this procurement procedure are the following:

1. To update the three literature searches as described above (to capture the three RTE food categories as sampled during the EU-wide BLS–search 1, melons–search 2 and leafy greens–search 3) to retrieve more recent records from the time of the initial search. The search by the former contractor was performed on 23/10/2014 (search 1) and on 12/12/2014 (searches 2 and 3). The awarded contractor resulting from this tenderer procedure is expected to use the same search strings and bibliographic databases as the former contractor (i.e. Web of Science and MEDLINE). It is considered an asset if in addition, grey literature is searched (national and international reports, public health institute publications, project or research reports, unpublished reports e.g. from ongoing research projects, other documents, data published on websites and any other source relevant to the subject under assessment).

2. To perform a study selection at level 1 (i.e. the relevance screening of titles and abstracts for relevance to the study question) and level 2 (i.e. examining full-text reports for the eligibility of studies). The selection process is expected to be conducted in two stages. Level 1 relevance screening (i.e. the screening of titles and abstracts for relevance to the study question) of new records is to be performed using the same methodology as applied in the abovementioned outsourcing activity for harmonisation reasons. The citations are to be loaded into an Endnote™ library or format compatible with Endnote™. The updated library is to be submitted to EFSA containing all records remaining after the level 1 relevance screening. The level 2 relevance screening (i.e. examining full-text reports for the eligibility of studies) is to be performed for 1,470 records identified and selected by the previous contractor complemented with the records identified in an updated search. The eligibility criteria to be used at this level 2 are to be proposed by the contractor resulting from this procurement procedure and agreed with EFSA. After finalising this stage in the process, the contractor shall provide EFSA with three libraries: (1) one containing the references which were considered not relevant, together with the reasoning, (2) another one containing the references for which full

text could not be retrieved on time; (3) another one containing the references which were passed to the next step (i.e. included studies).

3. To extract data from the included studies and to create evidence tables. This data extraction should aim at collecting information about the characteristics of the studies (e.g. the where and when the study was conducted, the type of samples collected (such as description of RTE food), the risk factors considered) and the results by providing a point estimate (e.g. mean or median) together with an estimate of variability (e.g. standard deviation, standard error or confidence interval). Sample sizes of all study groups should be indicated. The format and fields in the data extraction tables should be agreed with EFSA and where possible controlled terminology lists/pick lists should be used to ensure the data can be sorted, filtered and analysed efficiently.

4. To synthetize the data from the included studies using structured tables and summaries in narrative text to reach the two general objectives of the contract as listed above. The awarded contractor is not expected to perform a quality appraisal of the studies selected. To record the management of references and the screening and evaluation processes, an appropriate electronic tool shall be used, for example, and preferably the web-based software Distiller SR. The final report of the awarded contractor should contain structured tables and a summary of the type of studies selected including the data characterisation.

The process used for the literature search, selection of studies for inclusion or exclusion in the review and extraction of data from the included studies and creating evidence tables should be clearly reported to allow transparency and reproducibility, using the outcome of the former procurement activity (see Annex A –). The EFSA Guidance on application of SR methodology to food and feed safety assessments to support decision-making (EFSA, 2010) should be followed.

This contract was awarded by EFSA to:

Contractor: Consortium with Institut de Recerca i Tecnologia Agroalimentàries (IRTA as leader) and the University of Cordoba (UCO as partner)

Contract title: Closing gaps for performing a risk assessment on *Listeria monocytogenes* in ready-to-eat (RTE) foods: activity 1, an extensive literature search and study selection with data extraction on *L. monocytogenes* in a wide range of RTE food

Contract number: NP/EFSA/BIOCONTAM/2015/04 – CT1

1.2. Interpretation of the Terms of Reference

The proposal granted by EFSA, in response to the procurement activity RC/EFSA/BIOCONTAM/2014/01, was developed by a consortium of two organizations (IRTA and UCO), in which a project for carrying out the extensive literature search (ELS) mentioned above, was described.

The present project seeks to develop the requested literature search based on the objectives and tasks specified in the tender specifications. In particular, the **overall objective** of the project is to perform an ELS aiming:

- to describe the occurrence and levels of contamination of *L. monocytogenes* in RTE foods (corresponding to review question 1);
- to describe the risk factors of the *L. monocytogenes* contamination in different RTE foods (corresponding to review question 2).

To achieve this goal, four **specific objectives** were defined by EFSA and their interpretation is briefly described in Table 1.

Table 1: Specific objectives of the present activity, an extensive literature search and study selection with data extraction on *Listeria monocytogenes* in a wide range of RTE food

Objective	Title	Brief description
1	To update the three literature searches as described above to retrieve more recent records from the time of the initial search	To update search 1 (on RTE food categories as sampled during the EU-wide baseline survey) to capture and retrieve more recent records from 23/10/2014 To update search 2 and 3 (on melons and leafy greens, respectively) to capture and retrieve more recent records from 12/12/2014 To search for grey literature records
2	To perform a study selection at level 1 (relevance) and level 2 (eligibility)	To screen title and abstracts on the new records (from the updated searches) to select them by the study relevance To examine full-text of all identified relevant records (i.e. 1,470 from the former procurement activity plus those from the updated search) and select them by the study eligibility
3	To extract data from the included studies and to create evidence tables	To collect information from selected records about study characteristics, type of samples, sample size, risk factors considered, results (point estimates and variability)
4	To synthesize the data from the included studies using structured tables and summaries in narrative text to reach the two general objectives of the contract as listed above	To build structured tables and figures of the extracted data To write a narrative text describing the occurrence and levels of *L. monocytogenes* contamination and the risk factors in different RTE foods

RTE: ready-to-eat.

The **scope** of the present activity covers an ELS and addresses the tender specifications and the protocol provided by EFSA (see Annex A), in terms of:

- The identified key elements of the review questions 1 and 2: PO (population and outcome) and PECO (population, exposure, comparator and outcome), respectively.
- RTE food products eligible: RTE food products such as hot or cold smoked or gravid fish, ready-to-eat meat products, cheeses, retail unpasteurized milk, melons and leafy greens available at processing or later stages (pre-harvest products excluded).
- Time span: 1990 to present, without geographical area restriction.
- The principles of systematic review methodology according to the EFSA guidance document (EFSA, 2010). In this respect, the protocol provided will be applied without modifications, unless previously agreed with EFSA. The study selection and data extraction steps will be performed in the framework of the present procurement.
- The quality appraisal of the selected studies as stated in the tender specifications.

2. Data and Methodologies

2.1. Updating previous literature searches

The literature searches performed by a previous contractor for years 1990 to October/December 2014 were updated (i.e. to December 2015) by implementing the same search strategies described in the protocol provided by EFSA (see Annex A). Search strategies were different depending on the type of food product and the bibliographic database:

- **SCI-EXPANDED** (Science Citation Index Expanded) was accessed from Web of Science Core Collection at the Thomson Reuters Web of Science™ portal. This database was used for searches dealing with "RTE food" and "traditional meat products" as done by the previous contractor.
- **MEDLINE** (including documents In-Data-Review, In-Process, MEDLINE, OLDMEDLINE and PubMed-not-MEDLINE), which was accessed from Thomson Reuters Web of Science™ portal. This database was used for searches dealing with "RTE food", "leafy greens and melons" and "traditional meat products" as done by the previous contractor.

The search strategies used to perform the updated searches are shown in Appendix A –.

In the present searches update, MEDLINE was accessed from Thomson Reuters Web of Science™ portal instead of the OVID SP database search interface used by the previous contractor. As a consequence, slight modifications in some particular search terms were necessary, for instance: field tags "*title,abstract*" were changed to "*topic*", *$1* truncation was changed to *$*, the operator "*adj*" was changed to "*NEXT*" and search terms of more than one word were put in quotation marks. Searches for floating subheadings (*fs*) or *kf* were not applied as they were not allowed by the system. The exact MEDLINE search strategies used in comparison with the ones used for the former procurement activity are detailed in Appendix A Table A3 (RTE food) and Table A4 (leafy greens and melons).

All search strings were piloted and the results from the present and former procurement activity were compared to validate them.

2.2. Grey literature searches

Grey literature sources which were screened include:

- Reports about *L. monocytogenes* risk assessment identified by the consortium within the activities carried out in the framework of the procurement OC/EFSA/BIOCONTAM/2014/02 CT1[2].
- Reports about the EU-wide baseline survey on the prevalence of *Listeria monocytogenes* in certain ready-to-eat foods in the EU, 2010-2011. Including Part A: *Listeria monocytogenes* prevalence estimates (EFSA, 2013), Part B: analysis of factors related to prevalence and exploring compliance (EFSA, 2014) and the external scientific report (Rakhmawati et al., 2013).
- The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks[3] from 2004 to 2014.

[2] The researchers participating in the consortium, from both IRTA and UCO, are also involved in the subject of closing gaps for performing a risk assessment on *L. monocytogenes* in ready-to-eat foods, activity 2, awarded in September 2014, dealing with a quantitative risk characterization on *L. monocytogenes* in RTE foods; starting from the retail stage (OC/EFSA/BIOCONTAM/2014/02-CT1)

- Rapid Alert System for Food and Feed (RASFF) portal[4].

Additional grey literature searches were performed on the following websites:

- Food Safety Risk Analysis databases & portal[5]. Search string: (listeria AND RTE AND levels OR contamination OR prevalence).
- System for Information on Grey Literature in Europe[6]. Three search strings were used: (listeria AND prevalence); (listeria AND occurrence); (listeria AND incidence).

2.3. EndNote and DistillerSR databases

Search results from the different searches were saved to EndNote Desktop as full records and all the libraries were merged. Duplicate reports were allocated using the "Find Duplicates" command of the programme followed by a manual checking. The identified duplicates were removed.

Library and Record number were sorted by Author surname and uploaded into the Distiller SR software in the same order. Thus, reference tracing was ensured using the same number for EndNote record number and Distiller SR Ref ID number.

An EndNote library resulting from the previous procurement was provided. The library contained 1,465 records (instead of the 1,470 records stated in the tender specifications) corresponding to the relevant references identified from 1990 to 23/10/2014 for RTE food and 12/12/2014 for leafy greens and melons.

2.4. Screening of the studies for relevance (level 1)

Relevance screening (level 1) consisted on the screening of the records at title and abstract level to identify relevant and potentially relevant records for review question 1, 2 or both. The criteria defined by the former procurement activity were used to screen the records retrieved from the updated searches (time span 2014-2015). The screening was performed through answering questions implemented in Distiller SR form, which were structured as in the former procurement activity.

Apart from the Yes/No answers, the "Doubtful" option was included for those cases where the information required to reply the questions was not clearly stated in the title/abstract. Doubtful responses entail the record to pass to level 2 screening as a conservative approach.

The level 1 (relevance) screening questions, their possible answers and the corresponding action implemented in Distiller SR were the following:

1. Does the title/abstract describe a study with prevalence or levels of *Listeria monocytogenes* as an outcome?

- Yes = move to question 2
- Doubtful = move to question 2
- No = EXCLUDE

2. Does the title/abstract describe a primary research study?

- Yes = move to question 3

[3] http://www.efsa.europa.eu/en/biological-hazards-data/reports
[4] http://ec.europa.eu/food/safety/rasff/index_en.htm
[5] Foodrisk.org
[6] www.opengrey.eu

- Doubtful = move to question 3
- No = EXCLUDE

3. Which of the following are included in the title/abstract (check all that apply)?

- *L. monocytogenes* in one or more RTE products (e.g. hot or cold smoked or gravid fish, RTE meat products, cheese, unpasteurized milk at retail, melons, leafy greens) [review question 1]
  - Yes = INCLUDE (move to level 2 screening)
  - No = neutral response
- Risk factor(s) for *L. monocytogenes* (e.g. food packaging type, preparation practices, storage temperatures, shelf life / time to sampling, presence or absence of a HACCP system, employee education and training programs) [review question 2]
  - Yes = INCLUDE (move to level 2 screening)
  - No = neutral response
- None of the above
  - Yes = EXCLUDE
  - No/Doubtful = neutral response

The screening questionnaire was piloted in a sub-sample of 50 records by two researchers to check for the consistency of the interpretation of the selection criteria. Results of the validation showed a high agreement between the two reviewers as the same records were included by both of them and only one record was included by only one of the two reviewers. Thus, the Distiller SR questionnaire and selection criteria understanding were considered satisfactory.

Additionally, the selection made by the Consortium within the studies from 2014 was compared with the selection made during the former procurement activity, even if its searches did not include the whole year 2014. Sixty-two records were selected by both contractors, 13 records were only selected by the previous contractor (though all were excluded in level 2 screening, section 2.6) and 48 additional records were selected only by the present contractor. The higher number of studies selected by the present contractor may be attributable to two additional months and to the more conservative approach applied. Even though, it can be considered that both contractors had a quite harmonised understanding of the relevance criteria.

The level 1 screening of each study was performed by one researcher. In case some hesitation arose this researcher requested the opinion and the support from other researchers and the decision was taken only after agreement of at least two researchers.

2.5. Obtention of full-text of relevant studies

For the records passing the level 1 screening the full-text was obtained through the "Find Full Text" feature available in the EndNote software using the automatic download if URL (link to full-text) and free access or institutional subscription available) or by manual download from the corresponding publisher website and manual upload to the EndNote library. When free access or institutional subscription was not available, other ways were being deployed, including the author reprint request (i.e. by e-mail to the corresponding author or via research gate[7]) as well as the interlibrary loan service.

[7] www.researchgate.net

2.6. Screening of the studies for eligibility (level 2)

The eligibility criteria for level 2 screening were proposed in line with the previously formulated criteria and are based on the study design and the key elements of the review questions:

- **Review question 1**: to describe the occurrence and levels of contamination of *L. monocytogenes* in RTE foods, is a PO (population and outcome) question.
- **Review question 2**: to describe the risk factors of the *L. monocytogenes* contamination in different RTE foods, is a PECO (population, exposure, comparator and outcome) question.

The eligibility and exclusion criteria proposed were discussed and agreed with EFSA and are detailed in Table 2 (review question 1) and Table 3 (review question 2).

Table 2: Eligibility and exclusion criteria for the review question 1: to describe the occurrence and levels of contamination of *Listeria monocytogenes* in RTE foods

Key element	Eligibility criteria	Exclusion criteria
Population	• RTE food (i.e. in the definition provided by Commission Regulation (EC) No 2073/2005), e.g. these included in EU-wide BLS (cooked meat products, smoked and gravad fish, cheese), unpasteurized milk, melons and leafy greens. Other such as fruits, cured/fermented meat products	• Non-RTE food (i.e. out of the definition provided by Commission Regulation (EC) No 2073/2005).
	• Samples collected at processing or later (retail phase) from European countries	• Pre-harvest food samples
	• Samples manufactured by food processors (commercial products)	• Food samples manufactured *ad-hoc* for research experiments
Outcome	• Occurrence/prevalence and/or levels (in terms of concentration) of *L. monocytogenes*	• Data about other *Listeria* species and *Listeria* spp.
Study design	• Survey studies about naturally exposed products	• Challenge test, i.e. dealing with deliberately inoculated products
	• Intervention experimental studies, but only control batches/groups without intervention and non-inoculated samples, as being representative of the baseline[(a)] outcome	• Intervention experimental studies, samples from batches with the intervention and inoculated samples
	• Outbreak investigations and recalls	
		• Studies evaluating the performance/ accuracy of analytical methodologies in deliberately inoculated samples
Type of publication	• Primary research study	• Review articles, editorials and letters to editor
Language restriction	• English, Spanish, French, Portuguese or Italian	• Any other language

BLS: baseline survey; RTE: ready-to-eat.

(a): The results from the samples/batches/situation without intervention (e.g. before any or in which no potential preventive measure/factor is applied).

Table 3: Eligibility and exclusion criteria for the review question 2: to describe the risk factors of the *Listeria monocytogenes* contamination in different RTE foods

Key element	Eligibility criteria	Exclusion criteria
Population	• RTE food (i.e. in the definition provided by Commission Regulation (EC) No 2073/2005), e.g. these included in EU-wide BLS (cooked meat products, smoked and gravad fish, cheese), unpasteurized milk, melons and leafy greens. Other such as fruits, cured/fermented meat products	• Non-RTE food (i.e. out of the definition provided by Commission Regulation (EC) No 2073/2005).
	• Samples collected at processing or later (retail phase) from European countries	• Pre-harvest food samples
	• Samples manufactured by food processors (commercial products)	• Food samples manufactured *ad-hoc* for research experiments
Outcome	• Occurrence/prevalence and/or levels (in terms of concentration) of *L. monocytogenes*	• Data about other *Listeria* species and *Listeria* spp.
Exposure and comparator	• Risk factors associated with ○ processing environment (e.g. presence/absence of HACCP system, education and training of food handlers, validated cleaning and disinfection programme, food-contact surface testing/results) ○ manufacturing and preparation practices (e.g. type of processing, exposure after a lethal treatment, for instance during slicing and packaging, use of post-lethally treatment and/or antimicrobial process) ○ product characteristics (e.g. pH, a_w, salt, preservatives, packaging type) ○ storage conditions (e.g. time and temperature)	
Study design	• Survey studies about naturally exposed products	• Challenge test, i.e. dealing with deliberately inoculated products
	• Studies evaluating *L. monocytogenes* control strategies (e.g. cleaning and disinfection, post-processing listericidal treatments, growth inhibitors) in non-inoculated products	• Intervention experimental studies, samples from batches with the intervention and inoculated samples
	• Outbreak investigations and recalls when risk factors associated with the pathogen levels in incriminated food are reported	• Studies evaluating the performance/ accuracy of analytical methodologies in deliberately inoculated samples
Type of publication	• Primary research study	• Review articles, editorials and letters to editor
Language restriction	• English, Spanish, French, Portuguese or Italian	• Any other language

a_w: water activity; BLS: baseline survey; HACCP: Hazard Analysis and Critical Control Point; RTE: ready-to-eat.

Screening for eligibility was applied to those records identified as relevant through the level 1 screening. The screening was performed through answering questions implemented in Distiller SR form, which allowed the identification of eligibility for review question 1, review question 2, or both.

The level 2 screening questions, their possible answers and the corresponding action implemented in Distiller SR were the following:

1. Which is the LANGUAGE of the full-text (select one)?

Answer	Action
• English, Spanish, French, Portuguese or Italian	Move to question 2
• German	EXCLUDE
• Chinese, Japanese or Korean	EXCLUDE
• Other	EXCLUDE

2. The OUTCOME of the study provides occurrence/prevalence and/or levels (in terms of concentration) of (select one):

Answer	Action
• *L. monocytogenes*	Move to question 3
• Only *Listeria* spp. or other *Listeria* species (but not *L. monocytogenes*)	EXCLUDE
• No occurrence/prevalence and/or levels as an outcome	EXCLUDE

3. Which is the main AIM/DESIGN of the STUDY (select one)?

Answer	Action
• Survey about naturally exposed/contaminated products	Move to question 4
• Intervention experimental study evaluating *L. monocytogenes* control strategies (e.g. cleaning and disinfection, post-processing listericidal treatments, growth inhibitors) in non-inoculated products	Move to question 4
• Outbreak investigation or recall	Move to question 4
• Other: eligible (specify reason)	Move to question 4
• Other: NON-eligible (specify below, QUESTION 3.1)	EXCLUDE

3.1. Specify the reason for non-eligibility regarding main aim/design of study (select one):

Answer
• Challenge test (deliberately inoculated products)
• Evaluation of the performance of analytical methods in inoculated samples
• *In vitro* antilisteria activity of bacterial strains or compounds
• *L. monocytogenes* isolates characterization
• Non-original data (review, meta-analysis, etc)
• Other: non-eligible (specify reason)

POPULATION

4. Were samples collected at a European country?

Answer	Action
• Yes	Move to question 5
• No (specify)	EXCLUDE

5. Were samples collected at processing (final product) or later (i.e. retail, including street vendors and catering)?

Answer	Action
• Yes	Move to question 6
• No (specify)	EXCLUDE

6. Do samples correspond to RTE food (as described in Commission Regulation (EC) No 2073/2005)?

Answer	Action
• Yes	Move to question 7
• NO (i.e. product/s intended to be cooked before consumption) (specify)	EXCLUDE
• Other (specify)	EXCLUDE

7. Were samples manufactured by food processors (i.e. commercial products, not manufactured *ad hoc* for the assay at lab level)?

Answer	Action
• Yes	Proceed to Data Extraction
• No	EXCLUDE

8. Is the full text of the publication available?

Answer	Action
• Yes	Proceed to Data Extraction
• No	Pdf to be seek out

The screening questionnaire was piloted in a sub-sample of 50 randomly-selected studies by two researchers to check for the consistency of the interpretation of the selection criteria. Results of the validation showed a high agreement between the two researchers as the same records were included by both of them. Thus, the Distiller SR questionnaire and selection criteria understanding were considered satisfactory.

The level 2 screening of each study was performed by one researcher. In case some hesitation arose this researcher requested the opinion and the support from other researchers and the decision was recorded in Distilled SR only after agreement of at least two researchers.

2.7. Data extraction

A data extraction form was developed to collect information from the eligible studies. It comprised several types of information distributed in five sections: (1) General information about the study; (2) RTE food sample and analytical procedure; (3) Risk factors (exposure and comparators, in relation to review question 2); and (4) Outcome. Whenever possible a controlled terminology list of answers was used. This allowed transcription errors to be minimised and data to be sorted, filtered and analysed more efficiently.

The questions within the data extraction form implemented in Distiller SR followed the structure described below in terms of question text, type of question and type of possible answer (see Appendix B –). The questions available to implement in Distiller SR were "Radio" (as single choice among multiple answer), "Checkbox" (as multiple choice) and "Text" (as free response).

The data extraction questionnaire implemented in Distiller SR was piloted in a sub-sample of records by two researches to check for the consistency of the interpretation of the information. Each record was reviewed and data extracted by one researcher. In case some hesitation arose, the same procedure as in section 2.6. was followed. The data extracted can be found in Annex B.

3. Results

3.1. Updating previous literature searches

The number of records retrieved from each search strategy is summarised in Table 4. Results from the former procurement activity are also included to allow comparison with the records

identified from the updated search, both from 1900 to the date of the search. In addition, the number of records within the time span 2014-2015 is specifically included in Table 4. The detailed results for each search step within the search strategies are shown in Appendix A.

The updated searches resulted in at least a 1.1-fold increase in the number of identified records (except for traditional meat products) when compared with searches during the former procurement activity that were performed approximately one year before. The initial searches and the present updated searches were considered to be in agreement and thus the search strategies implemented were considered valid.

Records from the different search strategies corresponding to studies from years 2014 and 2015 were merged generating an EndNote library of 1,568 records. A total of 399 duplicates were detected and removed. A definitive library of 1,169 updated records was obtained, which was submitted to level 1 screening (see section 3.3).

A schematic view of the search process and results obtained is shown in Figure 1.

Table 4: Number of records identified by each search carried out

Search: Food type and database	Number of records identified		
	by initial searches[(a)] (search date)	**by updated searches**[(b)] (search date)	**by updated searches within time span 2014-2015**
RTE foods SCI-EXPANDED (1900-search date)	5,781 (23/10/2014)	6,510 (10/12/2015)	863
RTE foods MEDLINE (1990- search date)	4,452 (23/10/2014)	4,984 (02/12/2015)	571
Leafy greens and melons MEDLINE (1990-search date)	558 (12/12/2014)	698 (02/12/2015)	132
Traditional meat product SCI-EXPANDED (1900-search date)	6 (not provided)	4 (10/12/2015)	2
Traditional meat product MEDLINE (1990- search date)	1 (not provided)	1 (10/12/2015)	0
Total number	10,798	12,197	1,568

(a): As performed during the former procurement activity RC/EFSA/BIOCONTAM/2014/01.
(b): Performed in December 2015 by the present contractors with the same search strings used in the former procurement.

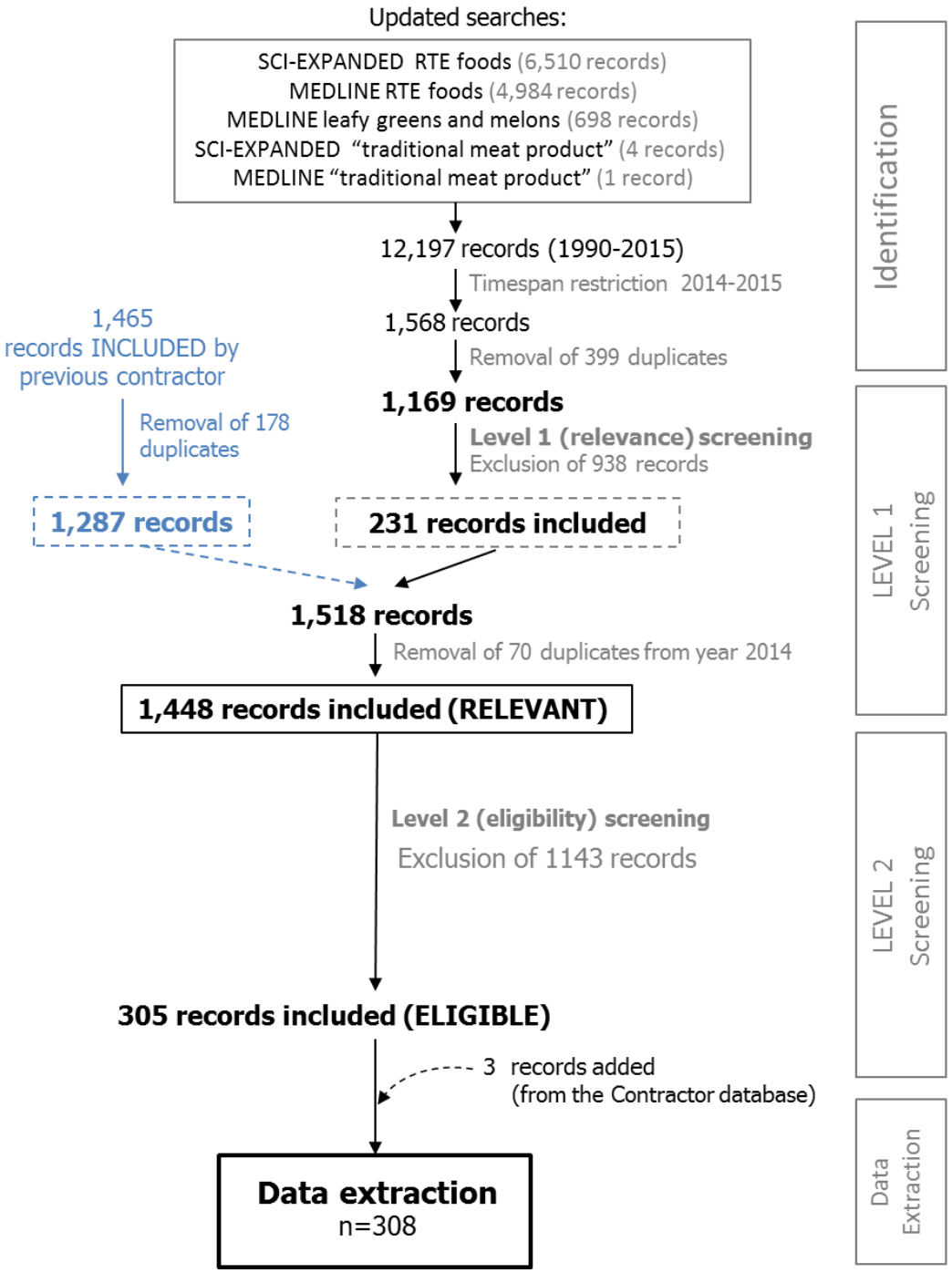


Figure 1: Flowchart showing the process and results of record identification (search), level 1 screening of records (in updated search) for relevance, merging of libraries and level 2 screening for eligibility and data extraction

3.2. Grey literature searching

The results of the grey literature searches performed are presented separately from the data retrieved from scientific databases, mainly describing the type of data provided.

3.2.1. EFSA reports, including EU-wide baseline survey (EFSA reports part A and B, external scientific report)

The EU-wide baseline survey included detection and enumeration of *L. monocytogenes* in selected RTE food categories; smoked (cold, hot) and gravad fish, heat-treated meat products (cold, cooked meat; sausage and pâté) and soft/semi soft cheeses (excluding fresh cheeses). Samples were taken at random basis in 26 EU Member States (MSs) plus Norway from the customer display and were to weight at least 100 g each. Only packaged and intact (sealed) packages, packaged by the manufacturer, were collected for sampling. However, in the cases of cheeses and meat products, products packaged at the retail outlet could have also been collected for sampling. According to the EFSA report part A (EFSA, 2013), detection and enumeration analyses of *L. monocytogenes* were made at the end of shelf-life for all three types of surveyed RTE foods, and also, at the time of sampling for the packaged fish samples.

Prevalence data were reported as presence/absence in 25 g samples. Enumeration data were described as a quantitative number and/or as a proportion of the number of samples exceeding 100 CFU/g at the end of shelf-life. Additionally, physico-chemical parameters and processing conditions were collected such as:

- Storage temperature at retail, and at laboratory up to the end of the shelf-life;
- pH and water activity test results on the arrival at the laboratory (for packaged hot and cold smoked or gravad fish samples);
- Product slicing at retail;
- Atmosphere composition: modified atmosphere packaging (MAP), normal atmosphere and vacuum packaged.

3.2.2. EFSA-ECDC zoonosis and foodborne outbreak reports

The EU Union summary reports on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks summarize the monitoring activities carried out each year by EU countries. For example, the report regarding *L. monocytogenes* data from 2014 gathers information about 32 EU reporting countries (28 EU MSs and 4 non MS). The provided information refers to prevalence and enumeration data from several RTE food categories:

- RTE fish and fishery products, where most of data were collected from smoked fish at processing plant level. Also gravad, marinated and slightly salted fish were reported as fish sub-categories;
- RTE meat products (cooked ham, pâté), meat preparations and minced meat;
- RTE cheeses including soft, semi-soft and hard cheeses;
- Results from a considerable number of investigations on *L. monocytogenes* in other RTE products, such as bakery products, fruits (mainly referred as pre-cut and non pre-cut) and vegetables, prepared dishes and salads were also reported. Regarding vegetable products they were reported in food sub-categories such as RTE seeds and sprouts, RTE salads, vegetables (pre-cut and non pre-cut) and vegetable leaves.

Results were presented as detection (presence/absence in x-g samples, according to the analytical method used) enumeration results ≤100 CFU/g and >100 CFU/g.

3.2.3. The Rapid Alert System for Food and Feed (RASFF) portal and reports

The RASFF database gathers the notifications resulting from European Economic Area (EEA) border controls, official controls on the internal markets, food poisoning cases or food business operators (FBO) own-checks. The information and data recorded concerns the detection of a potential publich health risk, detailing the type of notification (alert, information, border rejection, news), dates, the type of food and product category, hazard as well as notifying and concerned countries.

Searches can be customised selecting several fields, searching for *Listeria monocytogenes* ("key words" field), 1,323 results were retrieved (from May 1986 to present, end of August 2016). Since regulated food safety criteria (FSC) regarding *L. monocytogenes* only apply to RTE foods, these type of food are the most reported. The presence or suspiction of *L. monocytogenes* is frequently reported and in some cases concentration figures are provided. However, the information does not specify the total number of samples analysed and therefore cannot be used to estimate prevalence. Similarly, concentration data are only provided when *L. monocytogenes* is detected, therefore the samples should be considered extreme cases as they reflect levels in non-compliant samples.

3.2.4. PhD thesis retrieved through the OpenGrey portal

A total of 21 thesis were retrieved with the three search strings (see section 2.2.). After removing duplicates and screening of title and abstract (when available) most of the documents were excluded because they did not deal with RTE food and/or *L. monocytogenes* prevalence or concentration data. Only two documents were identified as eligible. For both, a scientific article related to the reported work was found, which was also retrieved through the scientific database searches and identified as eligible (Table 5).

Table 5: Theses retrieved from OpenGrey portal identified as eligible

Author (Year)	Title (language)	Related scientific article
Thevenot-Sergentet, D. (2005)	Analyse du danger lié à *Listeria monocytogènes* dans la saucisson sec. (French)	(Thevenot et al., 2005)
Kells, J. M. (2002)	A study of the occurrence and adherence of *Listeria monocytogenes* in the milk-processing environment (English)	(Kells and Gilmour, 2004)

3.2.5. *L. monocytogenes* risk assessment reports

Eight records from reports about *L. monocytogenes* risk assessment were identified by the consortium within the activities carried out in the framework of the procurement OC/EFSA/BIOCONTAM/2014/02 CT1. These studies were carried out outside the EU, and were therefore excluded (following the criteria described in section 2.6) and not further commented.

3.3. Screening of the studies for relevance (level 1)

Level 1 or relevance screening consisted in the revision by title/abstract of 1,169 records and answering the Distiller SR questionnaire (as described in Section 2.4). This screening resulted in

the inclusion of **231 records** as potentially relevant or of uncertain relevance to be submitted to the level 2 screening for eligibility (see the flowchart of Figure 1).

- 219 records were classified as potentially providing information for review question 1.
- 140 records were classified as potentially providing information for review question 2. They potentially described an evaluation of one or more risk factor(s) for *L. monocytogenes* (e.g. food packaging type, preparation practices, storage temperatures, stage of sampling relative to shelf life, pH, water activity (a_w) level, and sodium salt content (NaCl, non-organic acids salts), presence or absence of a HACCP system, education and training programs). Some particular records described prevalence or levels of *L. monocytogenes* in non-RTE food products (e.g. raw meat), which were included if dealing with one or more risk factor(s).
- 128 out of the 231 included records were classified as potentially providing information for review questions 1 and 2.

The reason for the exclusion of the remaining 938 records was, in most of the cases because, according to the title/abstract, the study did not describe prevalence or levels of *L. monocytogenes* as an outcome. Records in which *L. monocytogenes* was used as indicator microorganism in *in vitro* studies (e.g. focused on the antilisteria activity of bacterial strains, antilisteria properties of antimicrobial compounds), thermal inactivation assays or clinical assays dealing with *L. monocytogenes* strains were excluded at this level.

Though 38 records provided prevalence or levels of *L. monocytogenes*, they did not describe primary research studies (i.e. nine records being review articles) or were not dealing with RTE products nor evaluated *L. monocytogenes* risk factors (29 records).

The results from the previous contractor and those obtained in the updated search were merged and up to 70 duplicates were detected, all belonging to 2014 as this year was included in the time spam used in both searches (previous and present contractor). As a result, the pool of records identified and selected as relevant consist of 1,448 records (Figure 1).

3.4. Screening of the studies for eligibility (level 2)

The screening of the 1,448 relevant studies for eligibility (level 2) according to the criteria defined in Table 2 (review question 1) and Table 3 (review question 2) resulted in 305 eligible studies and 1,143 (78%) excluded studies as shown in Figure 2.

The reason for exclusion was recorded in a hierarchical basis through the use of Distiller SR. Figure 2 shows the number of records that were excluded successively in each question (see section 2.6 for the full question and possible answers). The main reasons for exclusion were related to the design/aim of the study (question 3; 616 exclusions), and to the country where the samples were collected (question 4; 349 exclusions).

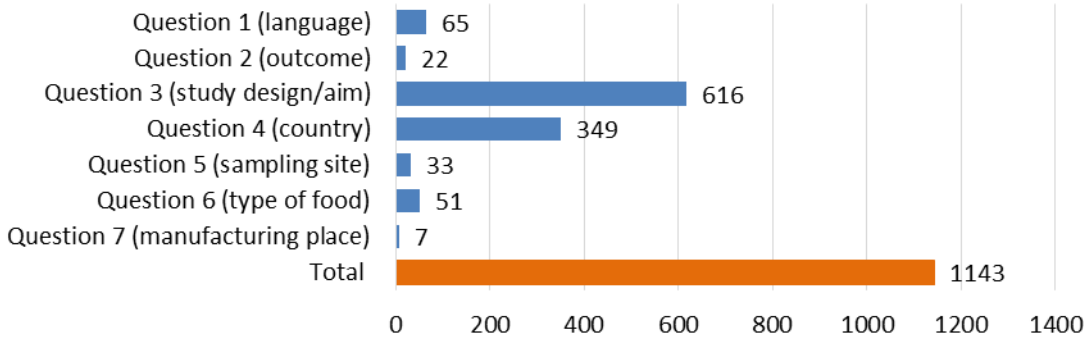


Figure 2: Number of records successively excluded by each question at the level 2 screening in the Distiller SR form (see section 2.6 for the full question and possible answers)

3.4.1. Question 1: language of the full text

Among the 1,448 relevant records, 1,078 were in English, Spanish, French, Portuguese or Italian and were therefore included and moved to the next question. The remaining 65 records were in other languages and excluded (see Figure 3, left).

3.4.2. Question 2: outcome of the study

Most (1,056) of the screened records (Figure 3, right) provided data on the occurrence/prevalence and/or levels of *L. monocytogenes*. Only 22 records were excluded, 13 because these provided occurrence/prevalence and/or levels of *Listeria* spp. but not *L. monocytogenes* and nine because these did not provide occurrence/prevalence nor levels as an outcome.

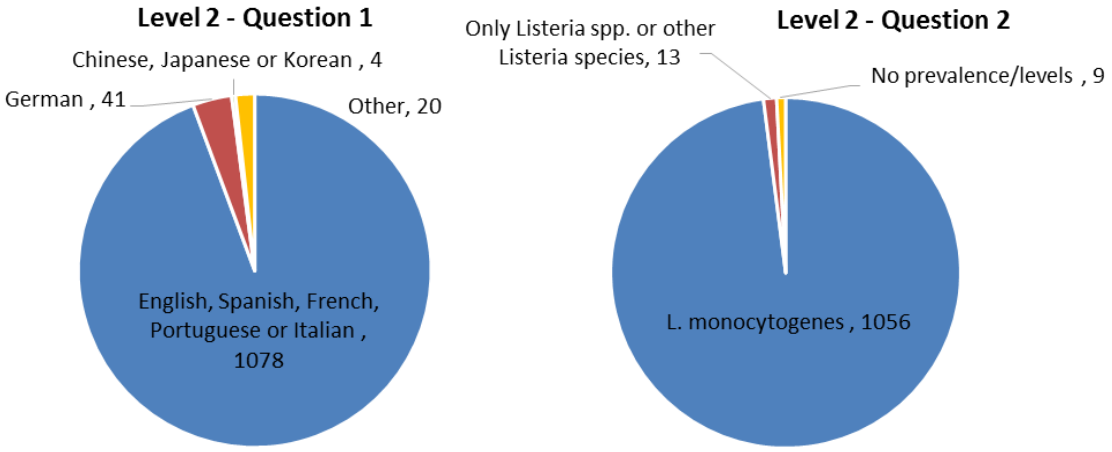


Figure 3: Distribution of the answers to level 2 screening questions 1 (language, left) and 2 (outcome, right)

3.4.3. Question 3: aim/design of the study

As shown in Figure 4 (left), 440 records were included because these corresponded to surveys or studies made on naturally exposed/contaminated products (420 records), dealt with

assessment of an intervention evaluating *L. monocytogenes* control strategies in non-inoculated products (14 records) or other eligible designs (6 records, corresponding to interventions evaluating microbiological safety).

The remaining 616 records were non-eligible and excluded. The distribution of the exclusion reason is shown in Figure 4 (right). Mostly (542 records) the study was performed with deliberately inoculated samples (e.g. challenge test to evaluate an intervention or to assess the performance of an analytical method). Other records were excluded because they aimed to evaluate the *in vitro* antilisteria activity of bacterial strains or compounds, to characterise *L. monocytogenes* isolates, or included non-original data (e.g. review paper or meta-analysis).

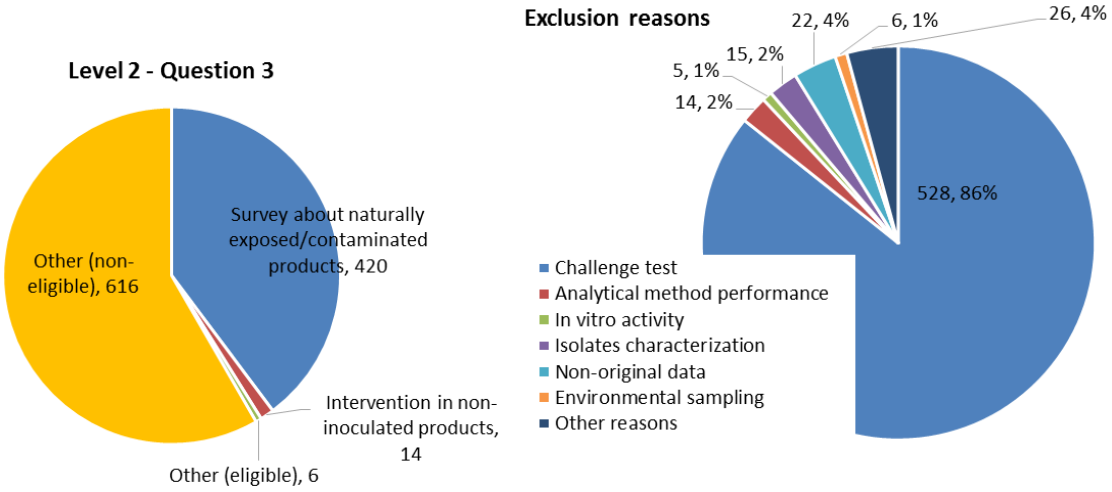


Figure 4: Distribution of the answers to level 2 screening question 3 (aim/design of the study, in number of studies) and reasons for the exclusion of the non-eligible records (number, %)

3.4.4. Question 4: country from where the RTE products were sampled

A considerable proportion of the records, 349 out of the 440 excluded records, were excluded because the foods were sampled in non-European countries. Table 6 shows the countries responsible for the exclusions; in most cases the USA and Brasil.

3.4.5. Question 5: type and/or site of sample collection

In total 33 records were excluded because the final products were not sampled; 58 were kept as products were collected at processing (as final product) or later (i.e. at retail, including street vendors and catering).

3.4.6. Question 6: ready-to-eat food

As the food analysed could not be identified as RTE product according to the definition provided in the Commission Regulation (EC) No 2073/2005, 51 records were excluded. Half because they were products intended to be cooked before consumption and half because the outcome (e.g. prevalence) was provided for all samples analysed without distinguishing between RTE food and non-RTE products (i.e. raw products, products and surfaces or raw materials and final product).

3.4.7. Question 7: manufacture by food processors

The last seven records within the 1,143 were excluded because they dealt with food products manufactured *ad hoc* for the assay at the laboratory or pilot plant level, thus they were not commercial products manufactured by food processors.

3.4.8. Question 8: full text available

The full-text of the study was available for all the 305 eligible records selected through the ELS, thus no exclusion was recorded due to the lack of the full-text.

Table 6: Countries of the records excluded by question 4 (sampling of RTE products performed in non-European countries)

Country	n	%	Country	n	%
USA	59	16.9%	Venezuela	4	1.1%
Brasil	48	13.8%	Colombia	3	0.9%
China	24	6.9%	Algeria	2	0.6%
India	24	6.9%	Lebanon	2	0.6%
Japan	18	5.2%	Nigeria	2	0.6%
Iran	17	4.9%	Taiwan	2	0.6%
Korea	17	4.9%	United Arab Emirates	2	0.6%
Canada	13	3.7%	Azerbaijan	1	0.3%
Australia	10	2.9%	Botswana	1	0.3%
Jordan	10	2.9%	Different non-EU countries	1	0.3%
Mexico	10	2.9%	Israel	1	0.3%
Costa Rica	9	2.6%	Libya	1	0.3%
Argentina	7	2.0%	Pakistan	1	0.3%
South Africa	7	2.0%	Philippines	1	0.3%
Thailand	7	2.0%	Puerto Rico	1	0.3%
Chile	6	1.7%	Red Sea coast	1	0.3%
Egypt	6	1.7%	Rwanda	1	0.3%
Malaysia	6	1.7%	Saudi-Arabia	1	0.3%
Ethiopia	5	1.4%	Singapore	1	0.3%
Morocco	5	1.4%	Tanzania	1	0.3%
Trinidad and Tobago	5	1.4%	Tunissia	1	0.3%
New Zealand	4	1.1%	Zambia	1	0.3%
			Total	**345**	

n: number of records; RTE: ready-to-eat.

3.5. Data collection

The data collection process was applied to 308 eligible records, which consisted of 305 obtained through the ELS and three additional articles (RefID 2387-2389) not retrieved during the review process but available in the consortium database (i.e. own records) (Figure 1). The data extraction was performed using the Distilled SR questioner described in Appendix B –.

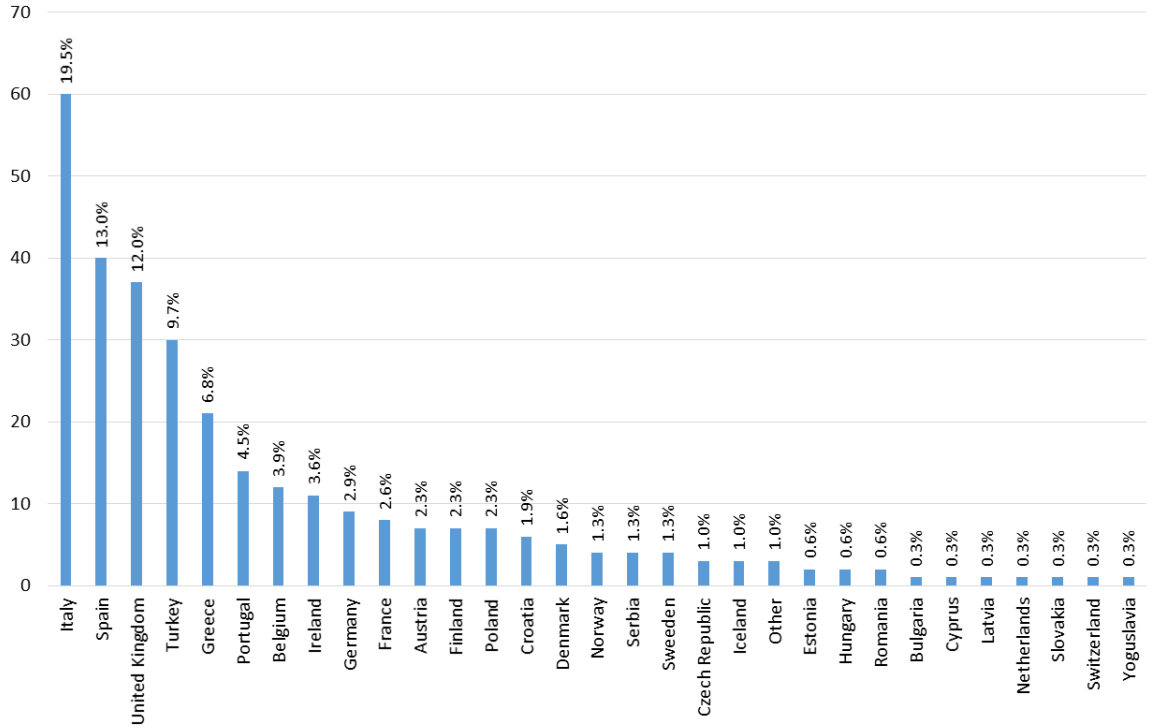
In the following sections the results of the data extraction, organized as the questions implemented in the Distiller SR form (see Appendix B), are summarised in figures. The corresponding data can be found in the structured tables of Appendix C. Additionally, information extracted from each record is shown in summary tables from Appendix D.

3.5.1. General information about the records

The questions on the general information about the records can be found in Appendix B (Table B.1) and the results in Appendix C (Table C.1). All 308 records correspond to scientific articles, 305 belong to the search performed in the scientific bibliographic databases. The three additional scientific articles were from the consortium database (available before the present procurement activity) but not retrieved by the implemented searches or identified as relevant/eligible in the former procurement activity.

Although the eligible studies have been published in 86 different journals, half of them correspond to four renowned journals: International Journal of Food Microbiology (17%), Journal of Food Protection (15%), Food Control (10%) and Food Microbiology (8%).

Figure 5 shows the EU countries at which studies were performed. Four countries (Italy, Spain, United Kingdom and Turkey) accounted for half of the studies, while the other half were distributed among the other 29 countries recorded.



"Other" corresponds to studies performed in several countries (i.e. Latvia and Lithuania; Faroe Islands, Finland, Iceland, Norway and Sweden; United Kingdom, The Netherlands, Switzerland).

Figure 5: Distribution of eligible records according to the country where the ready-to-eat product was collected

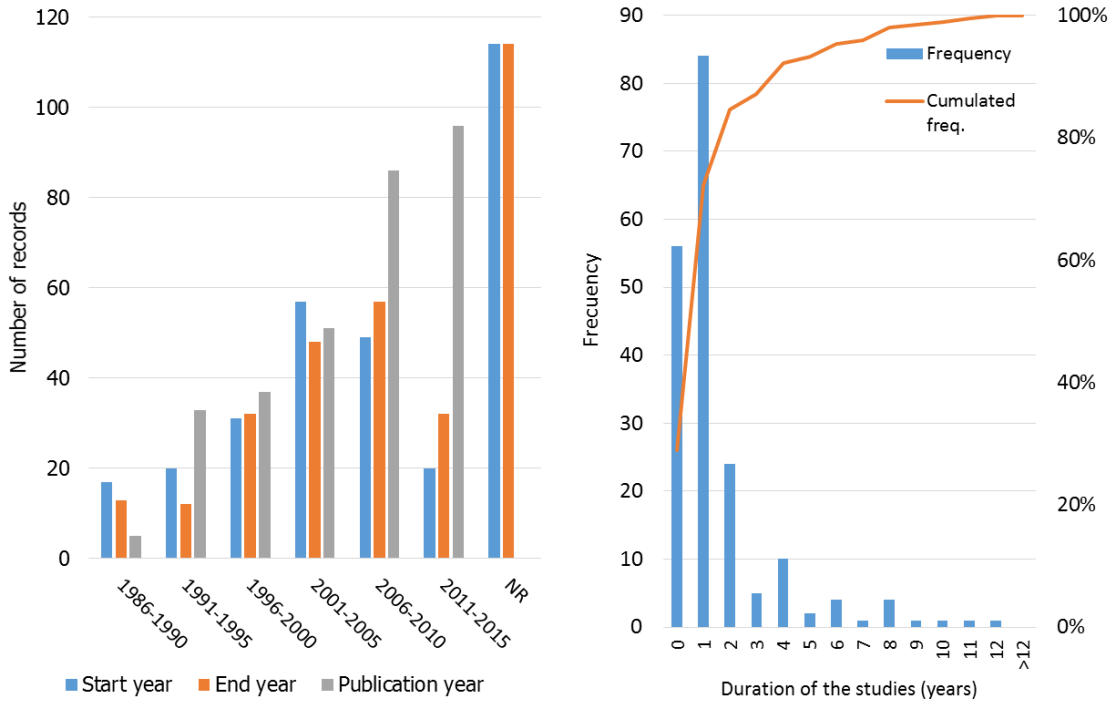
The trend in the number of published studies was increasing over time as shown in Figure 6 (left), summarised in 5-year interval. For a relevant number of studies, 37%, the time span corresponding to the study was not reported. In these cases, only the publication year could be used to analyse the data as an approximation of the time when the study was carried out. The exact year of start and end of the study (if provided) as of the publication was recorded and is shown in Appendix C.

Most of the studies lasted for one year or less (Figure 6, right). Only 28% of the selected records included longer studies (from 2 to 12 year studies). Long term studies, for ten or more years, were published in three articles, all dealing with retail RTE food in Italy (Di Pinto et al., 2010; Latorre et al., 2007; Messi et al., 2000).

The aim of the study decribed in the 308 records mainly consisted of a survey in naturally exposed RTE food (90%) to quantify the prevalence and/or levels of *L. monocytogenes* as (one of) the purpose/s of the study. Some studies dealt with the assessment of the performance of analytical procedures and used RTE products randomly sampled from the commercial food supply chain to validate or compare the selected method/s.

Six studies aimed to assess the impact of an intervention (i.e. effect of processing, packaging, cooking and storage temperature) on the microbiological quality and safety of non-inoculated (naturally exposed) RTE foods during their shelf-life (Merivirta et al., 2003; Midelet-Bourdin et al., 2008; Morris and Ribeiro, 1991; Mucchetti et al., 2008; Pereira et al., 2015; Sebastia et al., 2010). In these studies, the presence/absence of some pathogens, including *L. monocytogenes*, was reported in a variable number of samples and production lots.

Only one record describes an outbreak or recall investigation, specifically the occurrence of *L. monocytogenes* in cheese from a manufacturer associated with a case of listeriosis (McLauchlin et al., 1990). The selection of only one record related with outbreak or recall investigation is related to the selection criteria, that did not include this type of studies in the level 1 screening (for relevance) performed by the previous procurement activity.



NR=Not reported.

Figure 6: Overview of the year (at five year interval, left) and the duration (right) of the studies described in the eligible records

3.5.2. RTE food categories

The questions on the type of RTE food can be found in Appendix B (Table B.2). Figure 7 and Table C2.1 in Appendix C show the information regarding the type of RTE food included in the reviewed studies, grouped in the considered food categories and sub-categories. Some studies dealt with information about prevalence and/or concentration of *L. monocytogenes* in more than one food category, therefore the sum of the product sub-categories (N=464) is higher than the 308 reviewed eligible studies. Altogether, the category 'dairy products' was included in most records (N=139), followed by 'meat products' (N=110), 'seafood' (N=79), 'composite food' (N=62, including meals such as pasta- and rice-based salads, pre-cooked chilled foods, sandwiches, sushi, pastry and desserts), 'produce' (N=58) and 'other types of products' (N=16, including egg products and other un-specific/non-described "RTE products" in general).

Regarding the distribution of RTE food sub-categories within each category (Figure 7, bottom), among RTE meat products, fermented meat products (N=50) and cooked meat products (N=63) were the most studied ones. The "other" sub-category of RTE meat products includes the studies in which the sub-category was not properly specified (e.g. recorded as RTE meat-based products, RTE meat, mixed RTE meat products).

More than half of the RTE seafood products were smoked fish, either 'cold smoked' (N=28) or 'hot smoked' (N=9). However, in many studies (N=33) the product was recorded as 'smoked' fish without specifying the smoking type (cold or hot). The sub-category 'cured/salted' fish (including gravad fish) was included in 15 records. The sub-category 'other' includes both seafood products for which the sub-category was not specified (e.g. other fish products not specified, RTE fish and seafood products) and other products such as surimi, cooked shrimps and roe.

Within the RTE dairy products, besides different types of 'cheese' sub-categories predominated (N=153 records), a relevant number of records (N=106) were classified in sub-categories such as 'milk' (N=42), 'butter' (N=16), 'ice cream' (N=20), 'cream' (N=9) and 'other' (N=19). The latter includes products with the sub-category not specified and other products such as yoghurt, fermented milk drinks and cream cheese and cheese spreads. Among cheeses, the identification of the specific sub-category was not always possible. The 'soft/semi-soft cheese', 'hard/firm cheese' and 'fresh cheese' were identified either because these specific terms were reported or because the name of the cheese studied was provided and included in specific cheese sub-category of the EFSA FoodEx 2 descriptor. For 52 records, the information provided in the study did not enable its classification within the 'fresh', 'soft/semi-soft' or 'hard/firm' cheese, even if the name of the cheese was specified (N=29) or because the authors used the general term 'cheese' without any further specification or description (N=23).

The produce category included 'leafy vegetables' (N=43), 'other vegetables' (N=31) and 'fruits' (N=11). The 'other' (N=13) produce group gathered products with the sub-category not specified and other products such as mixes of vegetables, sprouts and mushrooms.

For each study, additional information about food products description (e.g. traditionally produced pastrami; minimally processed fresh-cut products (e.g. piel-de-sapo melon, mix salad and rocket); ham (Bundner Rohdchinken, jambon d'Ardennes, jamón Serrano and prosciutto di Parma) and cheese (e.g. Grana Padano, Manchego, Montasio, Parmigiano)) and geographical region (e.g. Metropolitan region of Lisbon; Sardinia (13 plants, representative of the region); Thessaloniki and Athens (71 manufacturers)) was captured when available in a free text question. These data can be retrieved through Annex B.

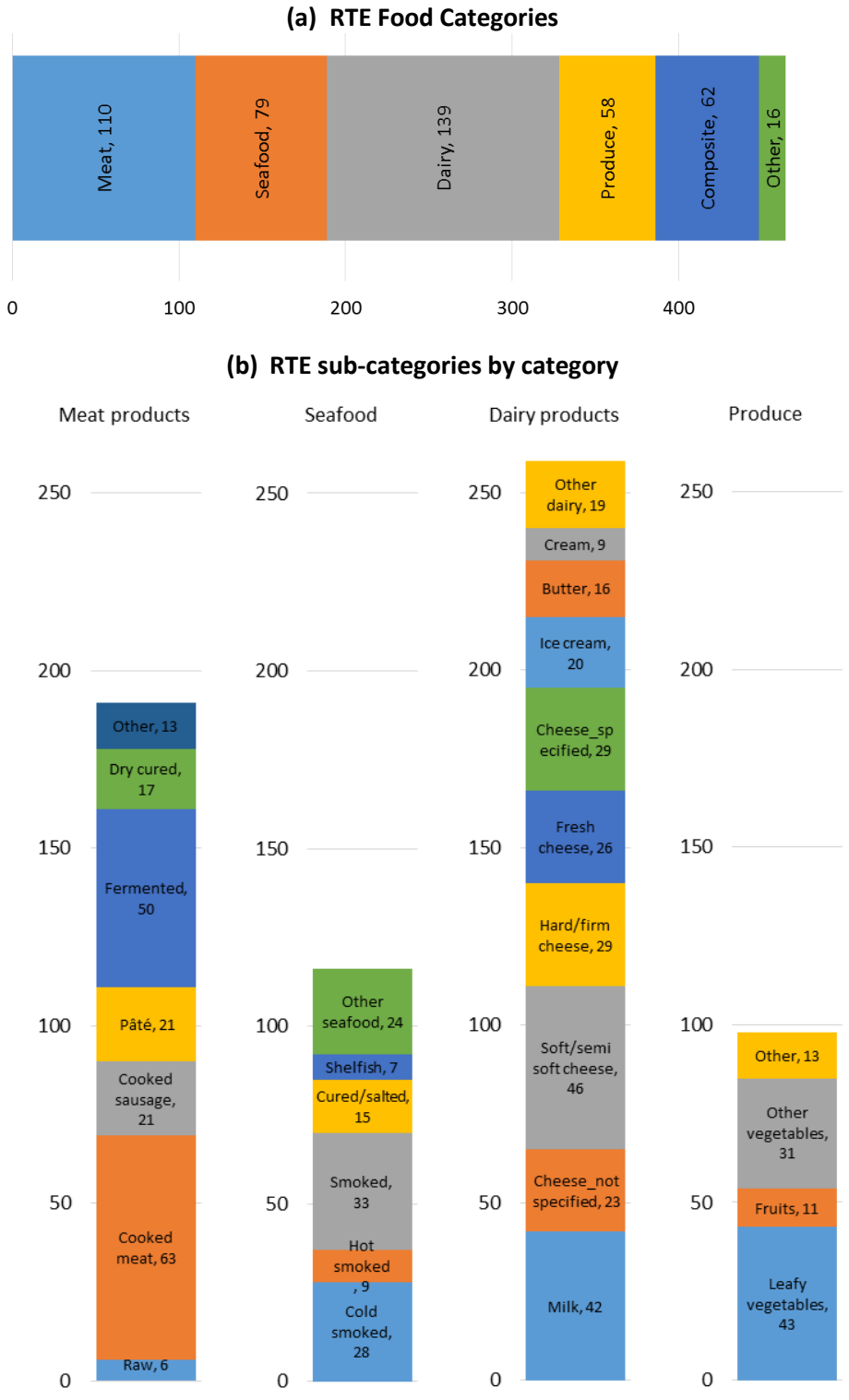


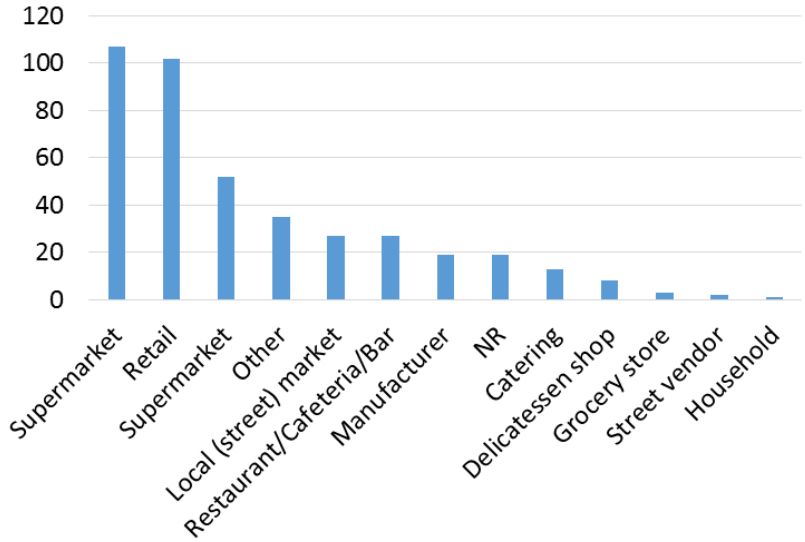
Figure 7: Distribution of the RTE food products included in the studies of the eligible records and grouped in the pre-defined food categories (a) and sub-categories (b)

When provided, the information about the animal species of the product category was recorded. The results are shown in Table C2.1 in Appendix C. The sum of all animal species is higher than the number of records dealing with the given RTE food category because the studies may deal with different products. For more than half of the meat products (54%) this type of information was not explicitly reported, and for the remaining meat products, pork derived products were the most frequent (35%), followed by poultry (23%), beef (15%) and others (duck, camel, horse, red meat). A higher rate of reporting was observed for seafood, salmon being the most frequently recorded (61%), followed by other seafood species (such as trout, herring, anchovies, cephalopods, tuna). For dairy products, a quite balanced distribution between cow (22%) and sheep (25%) and slightly lower for goat (14%) was recorded, though the non-reported option accounted for up to 60% of the products sub-categories. For dairy product, the type of milk used in terms of thermal treatments was also collected. Raw milk was recorded in about half of the products (which include raw milk as a product and raw milk cheese), while pasteurized milk in 27% of the products and no information explicitly provided in 49% of product sub-categories.

3.5.3. Sampling and analytical procedures

The questions on the sampling and analytical procedures can be found in Appendix B (Table B 2.2).

The RTE food samples were mostly taken at the manufacturer (33%) or retail (35%) without providing further details of the type of the outlet. In some studies, the sampling site was reported to be the supermarket (17%), local (street) market (9%) or other type of retail store (e.g. delicatessen shop, grocery). Mainly for milk the farm was also described to be the sampling place. Collected records also included RTE products taken from street vendors, caterings and bar/cafeterias restaurants (Figure 8).



NR: Not reported.

Figure 8: Sampling location of the ready-to-eat foods of the studies described in the eligible records

The season of sampling was provided in 150 (49%) of the reviewed studies. In general, the start and end month was reported (without specifying the periodicity of sampling) and, thus, the season data were extrapolated. The number of studies with RTE food sampled at different seasons was quite balanced, and each season is considered in about 105-119 studies (see Appendix C, Table C2.2). In one third of the studies sampling was performed during at least three seasons.

In around 18% of the records, it was mentioned that the samples were taken by official control.

The sample size in terms of number of RTE foods analysed in the study was very variable, ranging from 8 to 28,835. Half of the studies reported a sample size lower than 180 and 75% of them lower than 538. The distribution of the sample size of the reviewed studies is shown in Figure 9. Overall, studies involving official control analysis included higher sample size than other type of studies.

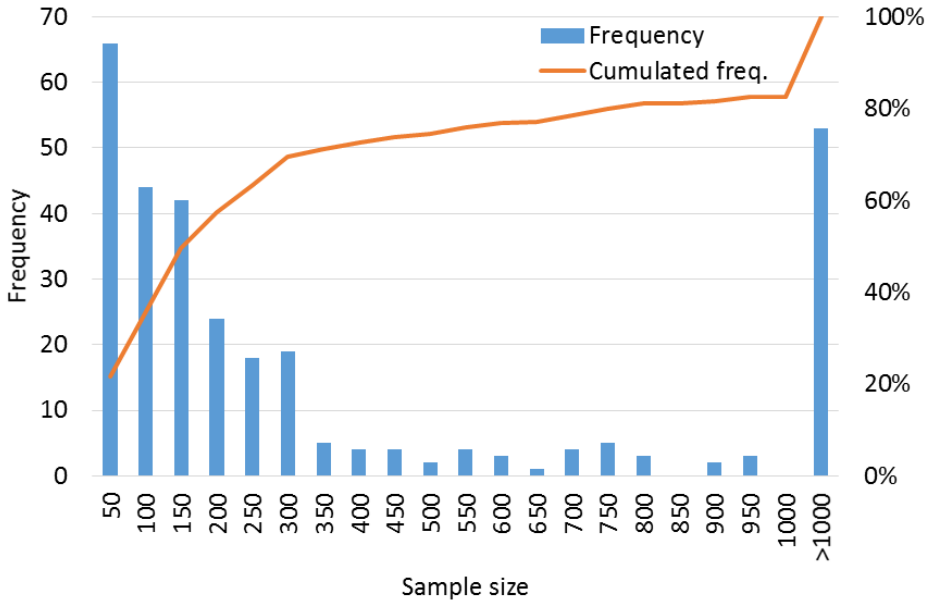


Figure 9: Total number of ready-to-eat food products evaluated in the studies described in the eligible records

Sampling scheme was mainly single sample (86%) and this type of sampling was assumed when no other sampling scheme was reported. Nearly 7% of the studies published data from a batch based sampling scheme. Sample pooling was not reported in any of the records reviewed.

The size of the analysed sample portion (i.e. analytical aliquot) was 25 g or mL in 67% of the cases, while 10 g or mL was only used in 6% of them. In 53 studies (17%) this information was not provided.

Figure 10 shows the analytical procedures used for the detection and enumeration of *L. monocytogenes* in RTE food. In 287 out of the 308 reviewed records *L. monocytogenes* was investigated by a detection method, i.e. presence/absence in the analysed RTE food aliquot. Among the used methods, the procedure officially recognised by the Commission Regulation (EC) No 2073/2005 was applied in 30% of the studies, either cited in its original version (ISO11290-1:1996) or amended (ISO 11290-1:1996/Amd 1:2004). The official procedures of the Food and Drug Administration (FDA) and other recognized methods such as Health

Protection Agency (UK) Standard method , FIL-IDF143:1990 or modifications of the ISO 11290-1 were also used. Among the studies following alternative ISO validated methods, the VIDAS LMO2 was reported in most of the cases (8 records) followed by RAPID'L.MONO (N=3). Some studies applied a "custom" detection procedure using *Listeria* Enrichment Broth (LEB), University of Vermont broth (UVM) or Half Fraser/Fraser broth as enrichment media while ALOA® (Agar Listeria Ottavani & Agosti), PALCAM Listeria agar, Oxford Listeria Selective Agar

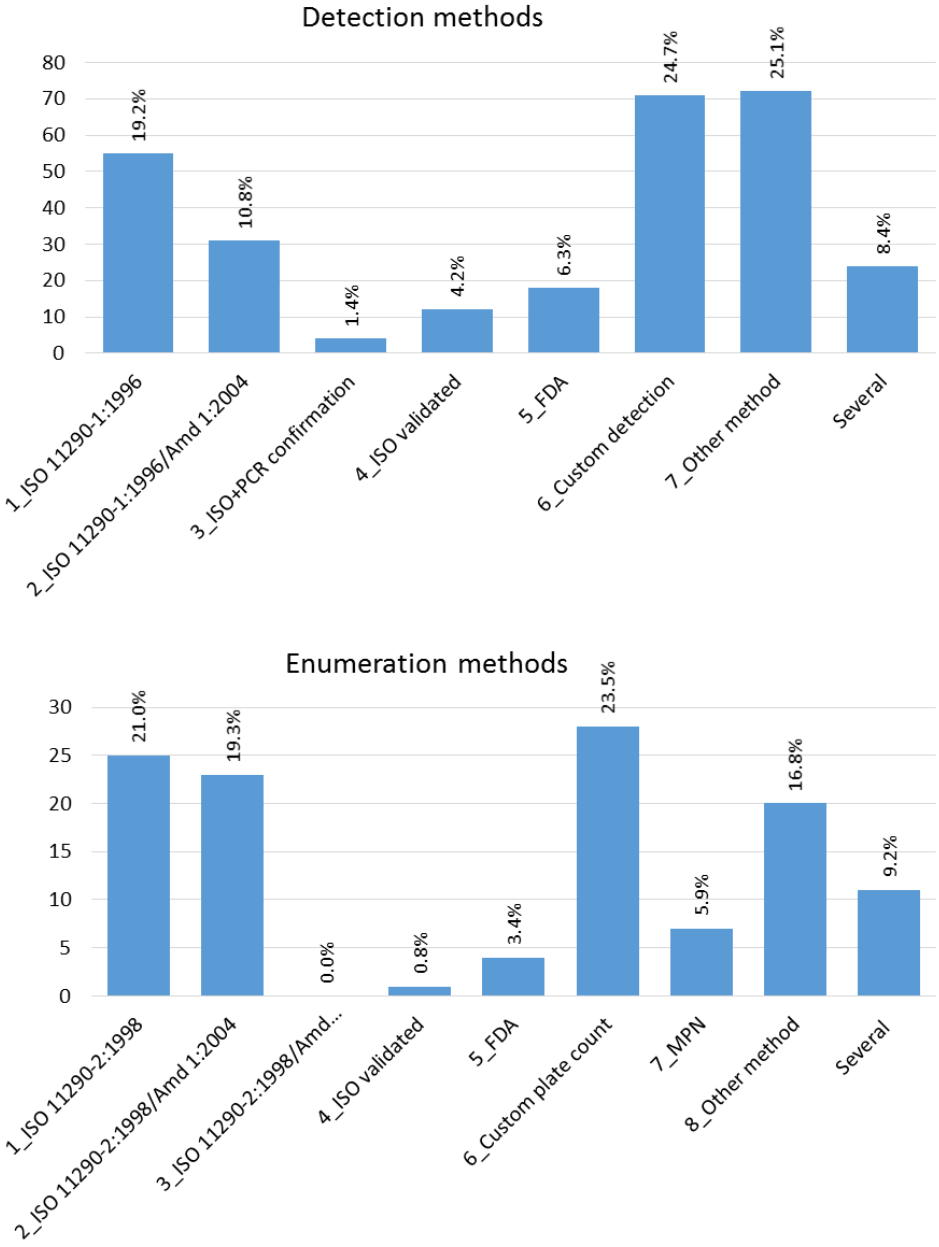


Figure 10: Methods used for the detection (top) and enumeration (bottom) of *Listeria monocytogenes* in ready-to-eat food samples in the studies described in the eligible records

and/or McBride Listeria agar were used as plating or streaking selective media. In some records, especially those aimed to evaluate the performance of analytical methods, more than one method (included in the category "several" in Figure 10) was used. The limit of detection of the method was reported in 75% of the cases, generally being presence/25 g of product (118/132 records). The output units were always expressed in terms of "Presence/Absence".

Enumeration was used in 189 records. The official Standard ISO 11290-2:1998 or its amendment ISO 11290-2:1998/Amd 1:2004 was used in 40% of the cases. Custom analytical procedures using ALOA®, PALCAM *Listeria* agar, Oxford *Listeria* Selective Agar and/or McBride *Listeria* agar as plate count method were used in 26 of the studies. When methods other than the ISO standard were selected, the Health Protection Agency/Public Health Laboratories of UK Standard methods were the most used (13 out of 20). The MPN[8] was used in seven records using Fraser broth as selective media when reported. The limit of detection of the method was only reported in 42% of the cases, ranging from 0.2 (membrane filtration method[9]) to 100 CFU/g (plate count method).

3.5.4. Risk factors I: manufacturing and production environmental factors

Information was extracted about a number of factors considered relevant at the manufacturing step, including those related with the production environment (the questions can be found in Appendix B (Table B.3.1). The records were reviewed to check whether the authors explicitly considered or reported about each of these factors (i.e. recorded as "present"). However, for most of the factors, the studies did not provide such information, therefore it was uncertain whether the factor was present or not (i.e. recorded in the Distiller SR questionnaire as "not considered").

The data are summarized in Table C3 in Appendix C. In particular, the (risk) factors 'HACCP system', 'Education and training of the food handlers' and 'Cleaning and disinfection programme' were explicitly reported to be present in eight (2.6%), six (1.9%) and three (1.0%) of the reviewed records, respectively. 'Food contact surface testing' was present in 32 records (10.4%) and in 27 of them (84%) *L. monocytogenes* was detected. 'Non-food contact surface testing' was present in 24 records (7.8%) and in 18 of them (75%) *L. monocytogenes* was detected. 'Food handler's testing' was present in 7 records (2.3%) and in 3 of them (43%) the pathogen was detected.

The 'type of processing' to which the sampled RTE food products were submitted included: no processing ('raw', mainly for raw fresh produce), 'heated/cooked' (mainly cooked meat products), 'fermented' (mainly cheese and fermented sausages), marinated (mainly seafood) and 'salted/dried' (e.g. fermented sausages, dry-cured ham, hard/semi-hard cheeses, smoked fish) (Figure 11). 'Cured' was only selected when the term "cured" was specified in the name or characteristics of the product (e.g. dry-cured ham, cured ham). Note that technologically curing process refers to the use of nitrifying agents (nitrate, nitrite) and this may be used in both raw dry-cured ham and cooked meat products. The use of this concept is not harmonised in the scientific literature. In the present activity, when the addition of nitrifying agents in the formulation or the curing manufacturing process was explicitly mentioned, the product was classified as "cured". However, this information is not always mentioned in the studies, which may have hampered the proper classification of the products (i.e. some cured products may have not been classified as such). Under 'Other' processing types butter and ice-cream manufacture is included.

[8] FDA (2010) BAM Appendix 2: Most Probable Number from Serial Dilutions.

[9] Gnanou Besse et al. (2004) A contribution to the improvement of *Listeria monocytogenes* enumeration in cold-smoked salmon. Int J Food Microbiol 91, 119–127.

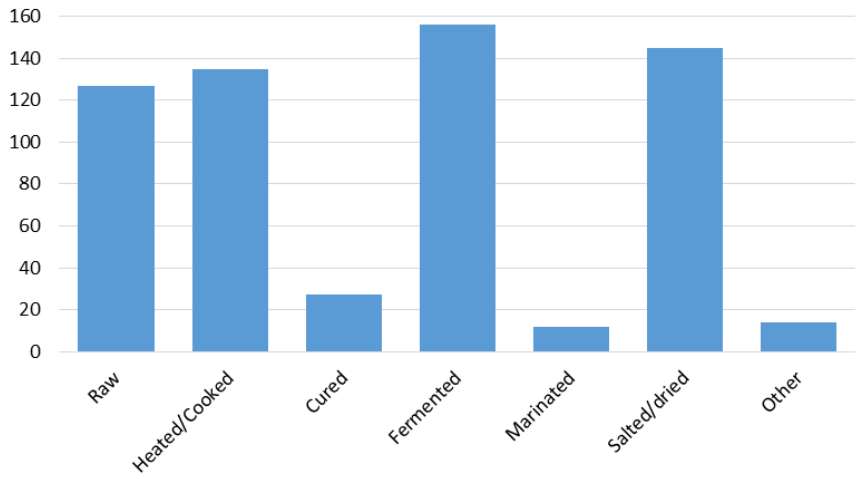


Figure 11: Type of processing of the ready-to-eat (RTE) food products in the studies described in the eligible records

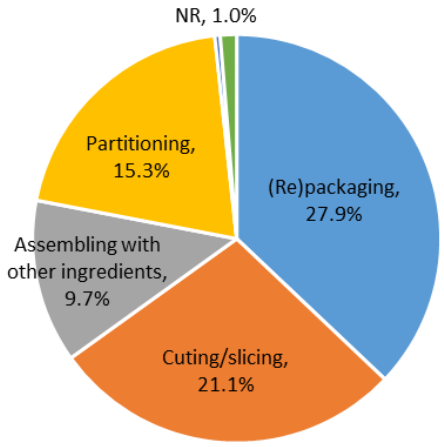
The 'exposure' of the products to *L. monocytogenes* contamination during its manufacturing process, including post-lethally exposure, was evident in one or several analysed RTE products in half of the studies. In 53% of the studies products were not exposed or this trait was unclear or doubtful. The type of exposure is depicted in Figure 12, showing a quite balanced distribution among processes such as '(re)packaging', 'cutting/slicing', 'assembling with other ingredients/additives', 'partioning'. For several RTE foods, more than one exposure type was recorded.

The use of 'antimicrobial agents or processes'[10], understood as any additive or process aiming to limit or suppress the microbial growth was only specifically reported in 11 records and corresponded to freezing storage.

The application of a 'post-lethally treatment'[11] to decrease the microbial load was only reported to be applied in two products: emulsion type sausages heated in final packs (Samelis and Metaxopoulos, 1999) and pasteurized soudjouck Afyon-style (Siriken et al., 2006). However, in many of the studies it was uncertain whether an antimicrobial agent (e.g. preservatives such as lactate) or post-lethally treatment (in-package thermal re-pasteurisation, high pressure processing) was applied by the manufacturers of the RTE food.

[10] The term antimicrobial agent (AMA) and antimicrobial process (AMP) is understood as a substance (e.g. preservatives such as lactate, diacetate, etc.) in or added to an RTE product and an operation (e.g. freezing) that is applied to a RTE product that has the effect of suppressing or limiting the growth of a pathogen (e.g. *L. monocytogenes*) in the product throughout the shelf-life of the product.

[11] The term post-lethaly treatment (PLT) is understood as a lethality treatment that is applied or is effective after the RTE product comes into direct contact with a food contact surface after the lethaly treatment (e.g. cooking) and it is applied to the final product or sealed package of product in order to reduce or eliminate the level of a pathogenic microorganisms (e.g. *L. monocytogenes*) resulting from contamination from post-lethality exposure.



NR: Not reported.

Figure 12: Type of (post-lethal) exposure to *Listeria monocytogenes* contamination of ready-to-eat (RTE) food in the studies described in the eligible records

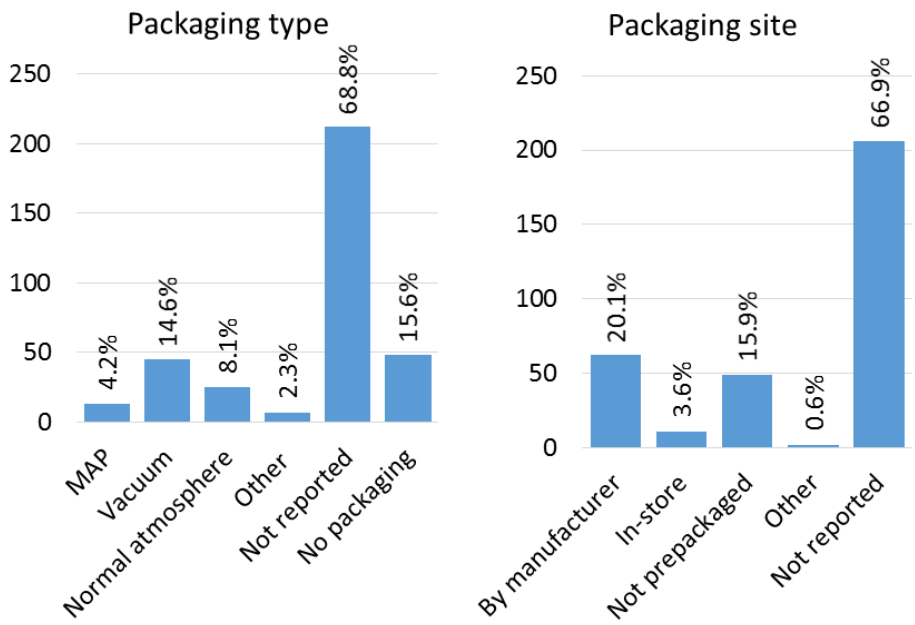
3.5.5. Risk factors II: product characteristics

The description of the product characteristics (the questions can be found in Appendix B (Table B2) was generally poor. Only in 46 records out of 308 (14.9%) the 'pH' and/or 'a_w' of the products was provided. In most of the cases the average and standard deviation and/or maximum and minimum values were provided. Additionally, other records provided information about the 'salt' content, usually in % in the product (not in water phase) (see Appendix C, Table C4).

Very few records specifically reported information about the use of preservatives, such as sorbate and benzoate, in the product formulation apart from the use of 'smoke' in 74 (24%) records, although in most of the cases the smoke type (natural or liquid) was not specified. In 91 records RTE products were certainly identified as non-smoked and in 33 of them smoking was not reported but possible (e.g. fermented sausages or cooked meat).

The 'packaging type' and 'packaging site' was not reported in a considerable proportion (up to 2/3) of studies (Figure 13). When reported, then 'no packaging' and 'vacuum-packaging' were predominant (N=48 and 45, respectively) followed by 'normal atmosphere' packaging. 'Modified atmosphere packaging (MAP)' was reported only in 13 types of RTE food products (mainly RTE green salads), but in most of them (N=11) the gas composition was not reported. Regarding the 'packaging site', when reported, it was mainly done by the manufacturer and far less in-store.

Information about the 'shelf-life' of the studied RTE food was hardly available. In some studies the authors confirm that the sampled RTE products were within the use-by or best-before date. The temperature of the product was not reported by 88% of the studies. The detailed results about these factors are shown in Appendix D, D4.



MAP: modified atmosphere packaging.

Figure 13: 'Packaging type' and 'packaging site' of the sampled food products in the studies described in the eligible records

3.5.6. Outcome

A summary of the data extracted regarding the outcome (prevalence and/or concentration of *L. monocytogenes*) (see the questions Appendix B (Table B4)) at qualitative level is provided in Appendix C, Table C5. Detailed information (i.e. study characteristics, product information and values for each food product) are available in summary tables from Appendix E.

Prevalence outcome was available for 778 data, distributed among the studied categories according to Figure 14. The RTE food category with more prevalence data are dairy products (N=276), followed by meat products (N=173), seafood (N=151), other products (N=104, including composite food and other type of products such as egg-products) and produce (N=74). These figures are in agreement with the number of studies including the corresponding food categories (Figure 7).

As a rough view of the range of the prevalence values recorded, Table 7 shows the basic descriptive statistics of the prevalence values recorded for each RTE food category. For all RTE food categories there were studies not detecting *L. monocytogenes* (i.e. minimum prevalence equal to 0). For some categories, the number of studies not detecting the pathogen was considerable. In total, in 29.5%, 21.9%, 48.2%, 63.5%, and 52.9% of the studies dealing with meat products, seafood, dairy products, produce and other products, respectively, *L. monocytogenes* was not detected (i.e. prevalence equal to zero). Accordingly, the 25th percentile equalled zero in case of meat, dairy, produce and other RTE food categories. For produce, the median value (i.e. 50th percentile) was also zero. The prevalence values varied in all cases but reached 100% in case of seafood (due to a record reporting 22 contaminated smoked salmon samples out of 22 analysed (Autio et al., 1999)) and other products (3 positive out of 3 uncooked packaged meals consisting of meat and vegetables (Harvey and Gilmour, 1993)).

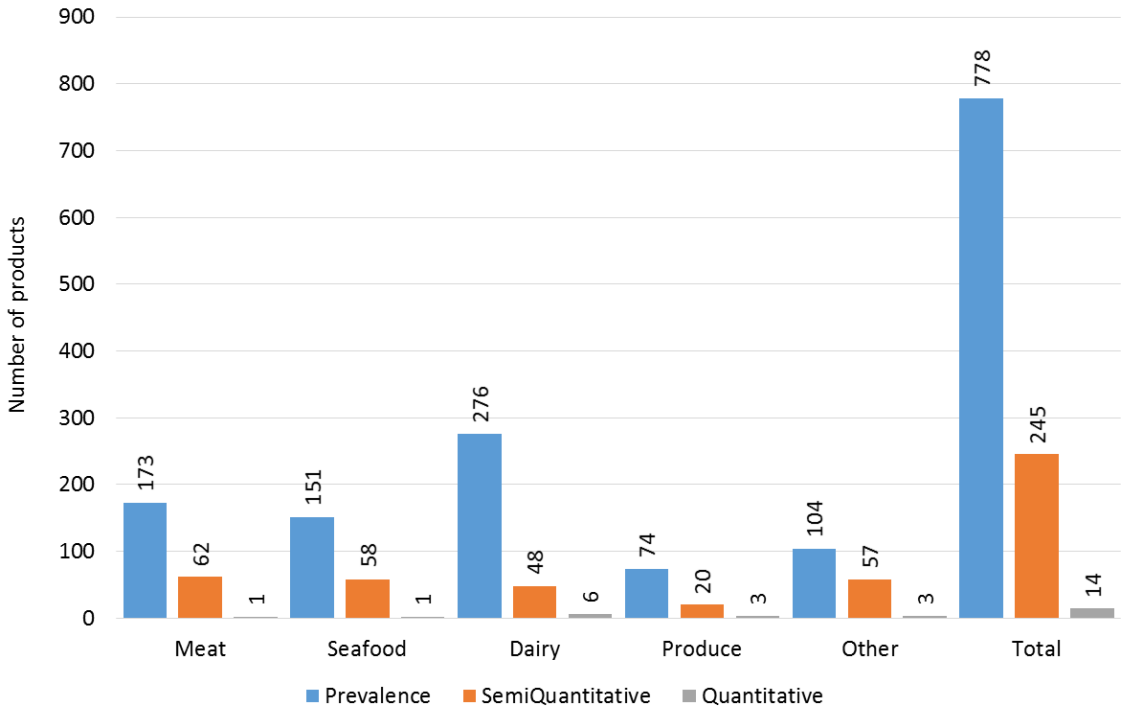


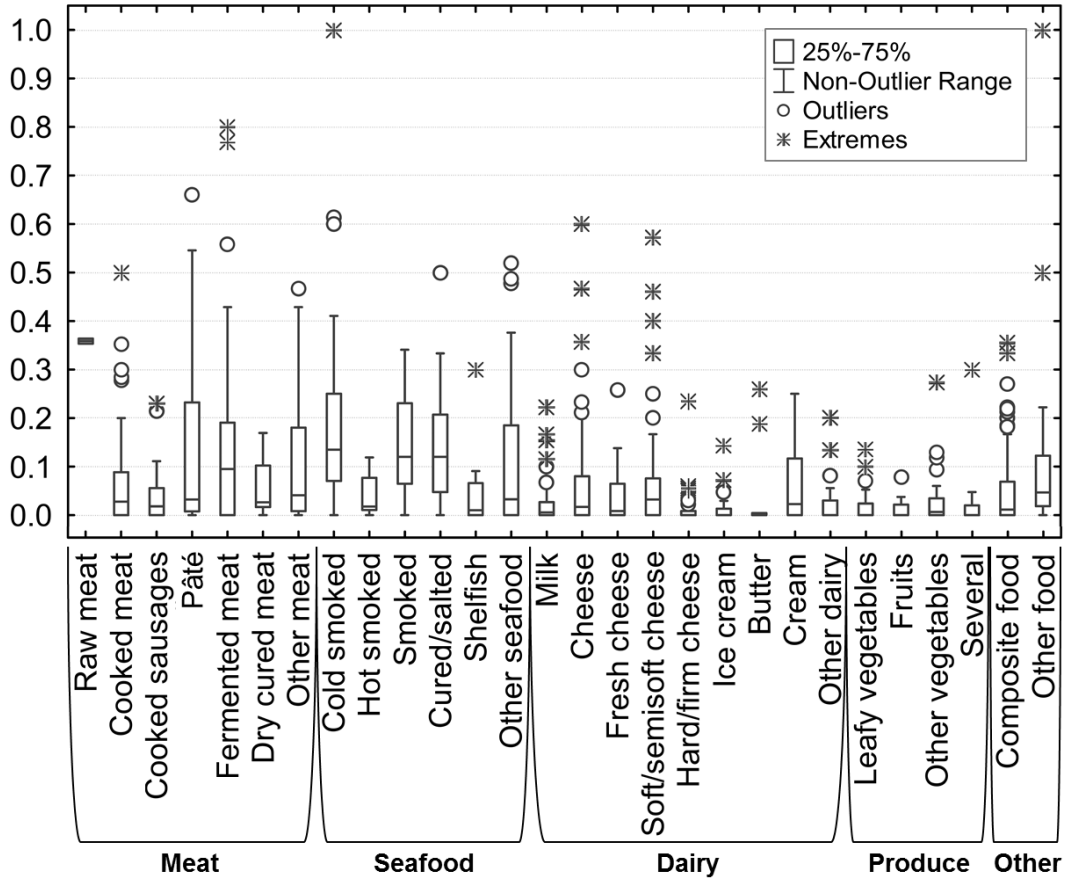
Figure 14: Distribution of the data extracted from the eliglible records regarding the outcome (in terms of prevalence and levels of *Listeria monocytogenes*) for each ready-to-eat (RTE) food category

Table 7: Summary statistics of the prevalence of *Listeria monocytogenes* contamination of RTE food categories in the studies described in the eligible records

Prevalence	Meat	Seafood	Dairy	Produce	Other
Minimum	0.000	0.000	0.000	0.000	0.000
25th Percentile	0.000	0.019	0.000	0.000	0.000
Median	0.040	0.104	0.004	0.000	0.027
Mean	0.103	0.134	0.048	0.027	0.066
75th Percentile	0.151	0.200	0.052	0.024	0.073
Maximum	0.800	1.000	0.600	0.300	1.000

RTE: ready-to-eat.

Figure 15 shows the box-plot representation of the prevalence of *L. monocytogenes* by each RTE food sub-category. In all sub-categories, the distribution of the prevalence values was asymmetric, with several outliers as well as extreme values above the 75th percentile. The median of the prevalence was below 10% for the almost all sub-categories, except for fermented sausages (10%), cold smoked fish (13%), smoked fish (either cold or hot smoked, 12%) and cured/salted fish (12%). For raw meat RTE products, only two prevalence data were available (around 35%).



Median value is indicated with the line within the interquartile box. Outliers (○) and extreme (✳) values correspond to values at 1.5 and 3-fold the interquartile range, respectively from the 75th percentile.

Figure 15: Box-plot of the prevalence data extracted by ready-to-eat (RTE) food sub-category

Semi-quantitative data about *L. monocytogenes* levels (e.g. grouped in concentration ranges or above/below 100 CFU/g or mL) were provided for 244 records (Figure 14). The highest number of semi-quantitative data has been recorded for meat products (N=62). Quantitative data were obtained for only 14 RTE product types. The detailed information extracted is gathered in Appendix E, Tables E9 to E13 for each RTE food category.

The outcome data provided by the reviewed studies and RTE foods are not always comparable, due to differences in the experimental design, analytical procedures, as well as in product characteristics, even within a category or sub-category. Further work is required to derive a robust estimate of the prevalence and levels of contamination of *L. monocytogenes* in RTE foods (review question 1), e.g. by category and sub-category. In this respect, a meta-analysis of the extracted data could be performed to combine the information provided by the different scientific studies.

Though the present procurement aimed to describe the risk factors of the *L. monocytogenes* contamination in different RTE foods (review question 2), the impact of some of the factors considered in this review is hard to be assessed, as the studies usually do not provide the outcome (prevalence and/or level values) as a function of the risk factors.

Only few of the reviewed studies aimed to assess the impact of an intervention on the *L. monocytogenes* prevalence in naturally exposed RTE foods. In some cases the pathogen was not detected in any analysed sample. Therefore, the prevalence was recorded as zero irrespectively of the intervention, which does not enable to draw conclusions on the effect of the risk factor. This was the case of the study of the packaging technology in the cooked meat product Morcela de arroz (Pereira et al., 2015), the storage temperature for charcoal-broiled fish (Merivirta et al., 2003), brine salted *versus* unsalted cheese (Mucchetti et al., 2008) and the sous vide cooking of meat, fish and produce based products (Sebastia et al., 2010).

Only three intervention studies reported the prevalence of *L. monocytogenes* different than zero and the intervention results could be compared with a reference treatment. The results are summarised in Table 8.

Table 8: Prevalence data of *Listeria monocytogenes* contamination of RTE food recorded in intervention studies

RefID	Product	N	S	Prevalence (S/N)
1922	Vacuum-packaged cold-smoked salmon (time 0)	360	26	0.072
	m-packaged cold-smoked salmon (not superchilled)	198	51	0.258
	m-packaged cold-smoked salmon (superchilled 14 days)	132	33	0.250
	m-packaged cold-smoked salmon (superchilled 28 days)	132	30	0.227
1952	Pâté (slices from loaves on display)	155	46	0.297
	Pâté (unopened packs)	50	23	0.460
	Pâté (vacuum-packaged portions)	11	6	0.545
	Pâté (7 loaves of 2 kg, 21 days storage at 4ºC)	56	37	0.661
1231	Cold-smoked rainbow trout (before eradication programme)	22	22	1.000
	Cold-smoked rainbow trout (after eradication programme)	22	0	0.000

N: number of analysed samples; RTE: ready-to-eat; S: number of positive samples.

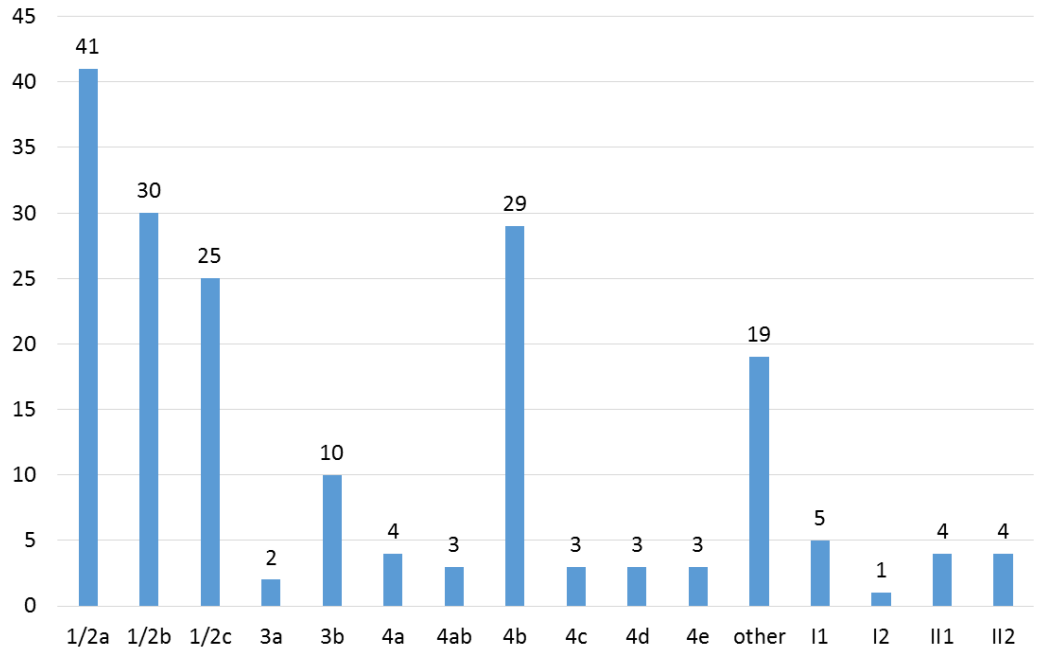
In the first study, the impact of superchilling (-2ºC for 14 or 28 days) of cold smoked salmon before storage was assessed in comparison with a control (i.e. batch without superchilling) (Midelet-Bourdin et al., 2008, RefID 1922). The prevalence of *L. monocytogenes* in smoked salmon superchilled for 14 days was similar to the control (25 and 26%, respectively). Despite the superchilling for 28 days resulted in slightly lower prevalence of the pathogen (23%), the number of samples with a concentration >100 CFU/g was slightly higher than the other treatments.

The second study dealt with the comparison of the prevalence of *L. monocytogenes* in pâté commercialised in different formats. The highest prevalence was found in vacuum packed individual portions (55%) followed by unopened packs from refrigerated storage (46%) and cut slices from bows or loaves from delicatessen counters (30%). Additionally, repeated sampling over 21 days of seven two-kg pâté loaves stored at 4ºC rendered a prevalence value of 66% and concentration levels in positive samples ranging from 80-160 CFU/g at day one to <20-2×10^8 CFU/g at day 21 (Morris and Ribeiro, 1991).

The third study dealt with sources of contamination of *L. monocytogenes* in cold-smoked rainbow trout (Autio et al., 1999, RefID 1231). An eradication programme consisting of disassembling and thoroughly cleaning and disinfecting production machines and production lines caused a drastic reduction of *L. monocytogenes* prevalence in the environment and in the RTE product, e.g. from 100% (22 positives out of 22 analysed products) down to 0% (not detected in any of the 20 products analysed).

Regarding the serotypes of the detected *L. monocytogenes*, 80% of the studies provided some relevant data. When serotypes were determined, the percentage of each serotype reported for in each product-type was captured through the Distiller SR questionnaire. Figure 16 shows, as a rough analysis of the extracted data, the times each serotype was reported among the papers reviewed. The predominant serotypes were 1/2a, 1/2b and 1/2c together with 4b.

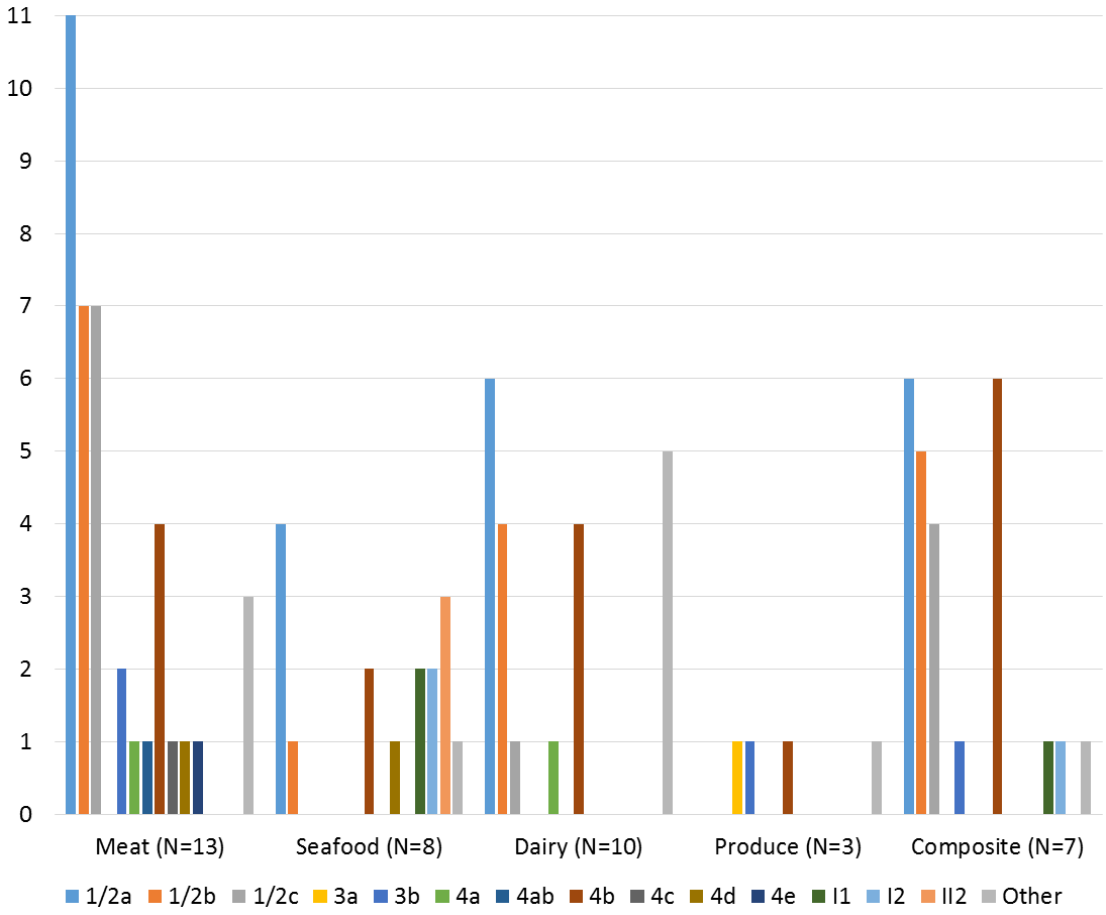
The number of isolates analyzed in each publication varied widely among the studies, ranging from 1 to 1,280. In general, the values provided only include data from *L. monocytogenes* isolated from RTE products (87% of the cases). However, in few papers, the information on the *L. monocytogenes* serotype was referred to the isolates orginated from RTE and non-RTE products or from RTE products and environment without distinguishing the origin. More detailed information about the data extracted is gathered in Appendix D5.



Lineage-serotype correspondence: I1=1/2a-3a, I2=1/2c-3c, II1=4b-4d-4e and II2=1/2b-3b-7.

Figure 16: Results about the reported *Listeria monocytogenes* serotypes or lineages, number indicates the number of times that the serotype was detected and reported among the eligible records

It should be taken into account that most of the records evaluate food products from different food categories and category-based serotype information is very limited. In this regard, Figure 17 provides an analysis of the serotype results from the 41 records dealing with only one food category, thus enabling the analysis of the occurrence of a given serotype by category. The two product categories including more records are 'Meat products' (N=13) and 'Dairy products' (N=10). The other categories included ≤7 records. In all food categories, except for 'Produce', the serotypes that were detected in more studies were 1/2a, 1/2b, 1/2c and 4b. These results are in agreement with those reported when considering all the records providing RTE products serotype information (Figure 16).



Numbers in brackets indicate the total number of records in each category. Lineage-serotype correspondence: I1=1/2a-3a, I2=1/2c-3c, II2=1/2b-3b-7. The number indicates the number of times that the serotype was detected and reported among the eligible records.

Figure 17: Results about the reported *Listeria monocytogenes* serotypes or lineages in records evaluating only one food category

4. Conclusions

The present report provides a detailed description of the extensive literature searches on the occurrence and levels of contamination of *L. monocytogenes* in RTE foods and the risk factors involved. The time period 1990-2015 was considered. A total of 1,448 relevant records were retrieved, from wich 308 were identified as eligible according to a selection of inclusion criteria. Information was extracted from these records about the study, RTE product (population) and analytical methodology, risk factors (exposure and comparators) and results (outcome) about prevalence and concentration of *L. monocytogenes*, as well as serotypes.

A considerable number of outcome data could be retrieved from the reviewed studies and RTE foods. Prevalence data in terms of number of positives when investigating presence/absence of the pathogen were available for 778 outcomes. In total, in 29.5%, 21.9%, 41.2%, 63.5% and 52.9% of the studies dealing with meat products, seafood, dairy products, produce and other, respectively, *L. monocytogenes* was not detected among the samples analysed (prevalence equal to zero). The distribution of the prevalence values was asymmetric in all sub-categories,

with several outliers as well as extreme values. Overall, the seafood and meat categories, and particularly cold smoked and smoked (type not specified) fish followed by pâté, showed the highest 75th percentile prevalence value. Up to 244 data provided semi-quantitative outcomes about *L. monocytogenes* levels, including 62 data for meat products. Only 14 data were obtained regarding quantitative outcomes.

The impact of some of the (risk) factors considered in this review is hard to be assessed, as the studies usually do not provide the outcome (prevalence and/or level values) as a function of the risk factors. Only few of the reviewed studies aimed to assess the impact of an intervention on the *L. monocytogenes* prevalence in naturally exposed RTE foods. Among them, an eradication programme based on thoroughly cleaning and disinfecting production machines and lines caused a drastic reduction of *L. monocytogenes* prevalence in the environment and in the RTE product (smoked rainbow trout).

The serotypes 1/2a, 1/2b, 1/2c and 4b were the most reported in the reviewed studies for all food categories, except for the produce.

5. References

Autio, T, Hielm, S, Miettinen, M, Sjoberg, AM, Aarnisalo, K, Bjorkroth, J, Mattila-Sandholm, T, and Korkeala, H, 1999. Sources of *Listeria monocytogenes* contamination in a cold-smoked rainbow trout processing plant detected by pulsed-field gel electrophoresis typing. Applied and Environmental Microbiology, 65,150-155.

Di Pinto, A, Novello, L, Montemurro, F, Bonerba, E, and Tantillo, G, 2010. Occurrence of *Listeria monocytogenes* in ready-to-eat foods from supermarkets in Southern Italy. New Microbiologica, 33,249-252.

EFSA and ECDC, 2015. The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2013. EFSA Journal, 13,3991-4153.

EFSA, 2008. Request for updating the former SCVPH opinion on *Listeria monocytogenes* risk related to ready-to-eat foods and scientific advice on different levels of Listeria monocytogenes in ready-to-eat foods and the related risk for human illness. EFSA Journal 2008:6 (1): 599-641. 42 pp, doi: 10.2903/j.efsa.2008.599

EFSA, 2010. Application of systematic review methodology to food and feed safety assessments to support decision making. EFSA Journal 2010; 8(6):1637, 90 pp. doi: 10.2903/j.efsa.2010.1637

EFSA, 2013. Analysis of the baseline survey on the prevalence of *Listeria monocytogenes* in certain ready-to-eat foods in the EU, 2010-2011 Part A: *Listeria monocytogenes* prevalence estimates. EFSA Journal 2013; 11(6):3241, 75 pp. doi: 10.2903/j.efsa.2013.3241

EFSA, 2014. Analysis of the baseline survey on the prevalence of *Listeria monocytogenes* in certain ready-to-eat foods in the EU, 2010-2011. Part B: analysis of factors related to prevalence and exploring compliance. EFSA Journal 2014; 12(8):3810, 73 pp. doi: 10.2903/j.efsa.2014.3810

Harvey, J and Gilmour, A, 1993. Occurrence and characteristics of Listeria in foods produced in Northern-Ireland. International Journal of Food Microbiology, 19,193-205.

Kells, J and Gilmour, A, 2004. Incidence of *Listeria monocytogenes* in two milk processing environments, and assessment of *Listeria monocytogenes* blood agar for isolation. International Journal of Food Microbiology, 91,167-174.

Latorre, L, Parisi, A, Fraccalvieri, R, Normanno, G, La Porta, MCN, Goffredo, E, Palazzo, L, Ciccarese, G, Addante, N, and Santagada, G, 2007. Low prevalence of *Listeria monocytogenes* in foods from Italy. Journal of Food Protection, 70,1507-1512.

McLauchlin, J, Greenwood, MH, and Pini, PN, 1990. The occurrence of *Listeria monocytogenes* in cheese from a manufacturer associated with a case of listeriosis. International Journal of Food Microbiology, 10,255-262.

Merivirta, LO, Bjorkroth, KJ, and Korkeala, HJ, 2003. Microbiology of charcoal-broiled European river lampreys (Lampetra fluviatilis) stored at 3 and 22 degrees C. Journal of Food Protection, 66,2332-2335.

Messi, P, Casolari, C, Fabio, A, Fabio, G, Gibertoni, C, Menziani, G, and Quaglio, P, 2000. Occurrence of *Listeria* in food matrices. Industrie Alimentari, 39,151-157.

Midelet-Bourdin, G, Beaufort, A, Leroi, F, Cardinal, M, Rudelle, S, Leleu, G, Copin, S, and Malle, P, 2008. Impact of-2 degrees C Superchilling before Refrigerated Storage (4 and 8 degrees C) on the Microbiological and Sensory Qualities of Cold-Smoked Salmon. Journal of Food Protection, 71,2198-2207.

Morris, IJ and Ribeiro, CD, 1991. The occurrence of *Listeria* species in pate - the Cardiff experience 1989. Epidemiology and Infection, 107,111-117.

Mucchetti, G, Bonvini, B, Remagni, MC, Ghiglietti, R, Locci, F, Barzaghi, S, Francolino, S, Perrone, A, Rubiloni, A, Campo, P, Gatti, M, and Carminati, D, 2008. Influence of cheese-making technology on composition and microbiological characteristics of Vastedda cheese. Food Control, 19,119-125.

Pereira, JA, Dionisio, L, Patarata, L, and Matos, TJS, 2015. Effect of packaging technology on microbiological and sensory quality of a cooked blood sausage, Morcela de Arroz, from Monchique region of Portugal. Meat Science, 101,33-41.

Rakhmawati T W, Nysen R, Aerts M, 2013. Statistical analysis of the *Listeria monocytogenes* EU-wide baseline survey in certain ready-to-eat foods Part A: *Listeria monocytogenes* prevalence estimates. EFSA Supporting Publication 2013: 10(6): EN-441, 114 pp. doi: 10.2903/sp.efsa.2013.EN-441

Samelis, J and Metaxopoulos, J, 1999. Incidence and principal sources of *Listeria* spp. and *Listeria monocytogenes* contamination in processed meats and a meat processing plant. Food Microbiology, 16,465-477.

Sebastia, C, Soriano, JM, Iranzo, M, and Rico, H, 2010. Microbiological quality of sous vide cook-chill preserved food at different shelf life. Journal of Food Processing and Preservation, 34,964-974.

Siriken, B, Pamuk, S, Ozakin, C, Gedikoglu, S, and Eyigor, M, 2006. A note on the incidences of Salmonella spp., *Listeria* spp. and *Escherichia coli* O157:H7 serotypes in Turkish sausage (Soujouck). Meat Science, 72,177-181.

Thevenot, D, Delignette-Muller, ML, Christieans, S, and Vernozy-Rozand, C, 2005. Prevalence of *Listeria monocytogenes* in 13 dried sausage processing plants and their products. International Journal of Food Microbiology, 102, 85-94.

Abbreviations

a_w	water activity
ALOA	Agar *Listeria* Ottavani & Agosti
AMA	antimicrobial agent
AMP	antimicrobial process
BIOHAZ Panel	EFSA Panel on Biological Hazards
BLS	Baseline Survey
CFU	colony forming units
EC	European Commission
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EFSA	European Food Safety Authority
ELS	extensive literature search
EU	European Union
FDA	Food and Drug Administration
HACCP	Hazard Analysis and Critical Control Points
IRTA	Institut de Recerca i Tecnologia Agroalimentàries
ISO	International Organisation for Standardization
LEB	*Listeria* Enrichment Broth
Lm	*Listeria monocytogenes*
MAP	modified atmosphere packaging
MEDLINE	Medical Literature Analysis and Retrieval System Online
MPN	most probable number
PECO	population, exposure, comparator, outcome
PLT	post-lethality treatment
PO	population and outcome
RASFF	Rapid Alert System for Food and Feed
RTE	ready-to-eat
SCI-EXPANDED	Science Citation Index Expanded
UCO	Universidad de Córdoba
UVM	University of Vermont broth

Appendix A – Search strategies

The following tables describe the applied search strategies, as provided by EFSA, and the corresponding results obtained in the previous (year 2014) and updated (year 2015) searches.

Table A. 1: Search strategy for ready-to-eat (RTE) foods performed in SCI-EXPANDED (Science Citation Index Expanded), Web of Knowledge, Thomson Reuters. Years: 1900-present. Database last updated 09/12/2015. Database searched 10/12/2015.

Set	Search	**Results** of updated searches (10/12/2015)	**Results** of previous contractor (23/10/2014)
# 1	TS=("listeria" or "listeriosis" or " l monocytogenes")	31,035	26,078
# 2	TS=("ready to eat" or "ready meal*" or "ready prepared")	2,771	2,377
# 3	TS=((“rte” or “shop-bought” or “shop-prepared” or “store-bought” or “store-prepared” or “pre-prepared” or “preprepared” or “pre-packed” or “prepacked” or “pre-packaged” or “prepackaged” or “pre-sliced” or “presliced” or “pre-cut” or “precut” or “pre-chopped” or “prechopped” or “mince” or “minced” or “processed” or “preprocessed” or retail* or “pre-cooked” or “precooked” or “commercially prepared” or “convenience” or “heat-treated” or “preheated” or “pre-heated” or “pickled” or “fermented” or “preserved” or “smoked” or “cured” or “gravid” or marinate* or marinad*) near/3 (food* or “produce” or product* or “meal” or “meals” or snack* or “meat” or “meats” or “beef” or chicken* or “lamb” or “pork” or turkey* or “poultry” or fish* or “seafood” or “sea food” or “shellfish” or “salmon” or mussel* or crab* or oyster* or prawn* or shrimp* or lobster* or “clam” or “clams” or “crayfish” or scallop* or “trout” or “mackerel” or “dairy” or fruit* or vegetable* or salad*))	33,466	27,762
# 4	TS=("deli” or “delis” or delicatessen* or “salad bar*” or buffet* or “charcuterie” or “cold meat*” or “cold cut*” or “lunch meat*” or “luncheon meat*” or sandwich* or “cooked meat*” or “ham” or “hams” or salami* or “pepperoni” or sausage* or “pate” or “pates” or hotdog* or hot dog* or frankfurter* or burger* or hamburger* or “corned beef” or “chorizo” or “meatloaf” or “meat loaf” or “pastrami” or “mortadella” or “bologna” or “baloney” or “boloney” or “polony” or terrine* or rillette* or “tongue” or “potted meat*”)	120,955	101,766
# 5	TS=("gravad lax" or "gravlax" or "sushi" or "sashimi" or "ceviche")	564	487
# 6	TS=("unpasteurized” or “unpasteurised” or “un-pasteurized” or “un-pasteurised” or “raw milk*” or “raw dairy” or “soft serve” or icecream* or “ice cream*” or “mayonnaise” or coleslaw* or “feta” or “brie” or “camembert” or “queso blanco” or “chevre” or “blue-vein*” or “mold ripe*” or “mould ripe*” or cheese* or “soft ripe*” or “danish blue” or “gorgonzola” or “roquefort” or “ricotta” or “butter” or yogurt* or yoghurt* or yoghourt*)	45,411	34,461
# 7	TI=("incidence" or "prevalence" or occurrence* or epidemiolo*)	351,770	242,545
# 8	#7 OR #6 OR #5 OR #4 OR #3 OR #2	543,688	399,653
# 9	#8 AND #1	**6,510**	5,781
# 10	#9 *Timespan=1990-2015*	**6,313**	Not provided
# 11	#9 *Timespan=2014-2015*	**863**	-

TS=topic, TI=title.

Table A. 2: Search strategy for traditional products performed in SCI-EXPANDED (Science Citation Index Expanded), Web of Knowledge, Thomson Reuters. Years: 1900-present. Database last updated 09/12/2015. Database searched 10/12/2015.

Set	Search	Results of updated searches (10/12/2015)	Previous results (not provided)
# 1	TS=((listeria or listeriosis or monocytogenes) and ("traditional meat product" or "traditional meat products"))	**4**	6
# 2	#1 *Timespan=2014-2015*	**2**	-

TS=topic.

Table A. 3: Search strategy for ready-to-eat (RTE) food performed in MEDLINE*, Web of Knowledge, Thomson Reuters. Years: 1950-present. Database last updated 30/11/2015. Database searched 02/12/2015.

Set	Updated search	Results (02/12/15)	Results (23/10/14)	Search from previous contractor	Set
# 1	(MH:exp=(Listeria monocytogenes))	10,864	10,778	exp Listeria monocytogenes/	# 1
# 2	(MH:exp=(Listeriosis))	7,257	7,318	exp Listeriosis/	# 2
# 3	(TS=(listeria or listeriosis or l monocytogenes))	19,425	17,229	(listeria or listeriosis or l monocytogenes).ti,ab.	# 3
# 4	#3 OR #2 OR #1	19,425	18,862	or/1-3	# 4
# 5	TS=("food contamination" OR "consumer product safety")	42,741	38,348	food contamination/ or consumer product safety/	# 5
# 6	TS=("food packaging" or "food handling" or "food processing industry")	25,513	23,570	food packaging/ or food handling/ or food processing industry/	# 6
# 7	MH:exp=(meat)	52,066	11,022	exp meat/ae, mi, po	# 7
# 8	MH:exp=(meat) Refined by: MeSH QUALIFIERS: (MICROBIOLOGY OR ADVERSE EFFECTS OR POISONING)	14,949			
# 9	MH:exp=(meat) **Refined by: MeSH HEADINGS:** (COLONY COUNT MICROBIAL)	2,715	2,647	exp Meat/ and exp Colony Count, Microbial/	# 8
# 10	TS="fruit"	56,454	1,968	Fruit/ae, mi, po [Adverse Effects, Microbiology, Poisoning]	# 9
# 11	TS="fruit" **Refined by: MeSH HEADINGS:** (FRUIT)	29,680			
# 12	TS="fruit" **Refined by: MeSH HEADINGS:** (FRUIT) AND **MeSH QUALIFIERS:** (POISONING OR MICROBIOLOGY OR ADVERSE EFFECTS)	3,880			
# 13	TS="fruit"	315	303	Fruit/ and exp Colony Count,	# 10

	Refined by: MeSH HEADINGS: (FRUIT) AND **MeSH HEADINGS:** (COLONY COUNT MICROBIAL)			Microbial/	
# 14	TS="vegetables"	33,196	1,351	Vegetables/ae, mi, po [Adverse Effects, Microbiology, Poisoning]	# 11
# 15	TS="vegetables" **Refined by: MeSH HEADINGS:** (VEGETABLES)	17,932			
# 16	TS="vegetables" **Refined by: MeSH HEADINGS:** (VEGETABLES) AND **MeSH QUALIFIERS:** (MICROBIOLOGY OR POISONING OR ADVERSE EFFECTS)	2,737			
# 17	TS="vegetables" **Refined by: MeSH HEADINGS:** (VEGETABLES) AND **MeSH HEADINGS:** (COLONY COUNT MICROBIAL)	291	281	Vegetables/ and exp Colony Count, Microbial/	# 12
# 18	MH:exp=(dairy products)	77,392	13,219	exp Dairy Products/ae, mi, po [Adverse Effects, Microbiology, Poisoning]	# 13
# 19	MH:exp=(dairy products) **Refined by: MeSH QUALIFIERS:** (MICROBIOLOGY OR POISONING OR ADVERSE EFFECTS)	18,917			
# 20	MH:exp=(dairy products) **Refined by: MeSH HEADINGS:** (COLONY COUNT MICROBIAL)	1,887	1,937	exp Dairy Products/ and exp Colony Count, Microbial/	# 14
# 21	TS=("ready to eat" or "ready meal$" or "ready prepared")	1,546	1,431	(ready to eat or ready meal$1 or ready prepared).ti,ab.	# 15
# 22	ts=((rte or "shop-bought" or "shop-prepared" or "store-bought" or "store-prepared" or "pre-prepared" or preprepared or "pre-packed" or prepacked or "pre-packaged" or prepackaged or "pre-sliced" or presliced or "pre-cut" or precut or "pre-chopped" or prechopped or mince or minced or processed or preprocessed or retail$ or "pre-cooked" or precooked or "commercially prepared" or convenience or "heat-treated" or preheated or "pre-heated" or pickled or fermented or preserved or smoked or cured or gravad or marinate$ or marinad$) near/4	59,285	15,254	((rte or shop-bought or shop-prepared or store-bought or store-prepared or pre-prepared or preprepared or pre-packed or prepacked or pre-packaged or prepackaged or pre-sliced or presliced or pre-cut or precut or pre-chopped or prechopped or mince or minced or processed or preprocessed or retail$ or pre-cooked or precooked or commercially prepared or convenience or heat-treated or preheated or pre-heated or pickled or fermented or preserved or smoked or cured or gravad or marinate$ or marinad$) adj4 (food$ or	# 16

	(food$ or produce or product$ or meal$ or snack$ or meat$ or beef or chicken$ or lamb or pork or turkey$ or poultry or fish$ or seafood or "sea food" or shellfish or salmon or mussel$ or crab$ or oyster$ or prawn$ or shrimp$ or lobster$ or clam or clams or crayfish or scallop$ or trout or mackerel or dairy or fruit$ or vegetable$ or salad$))			produce or product$1 or meal$1 or snack$1 or meat$1 or beef or chicken$ or lamb or pork or turkey$ or poultry or fish$ or seafood or sea food or shellfish or salmon or mussel$ or crab$1 or oyster$ or prawn$1 or shrimp$1 or lobster$1 or clam or clams or crayfish or scallop$1 or trout or mackerel or dairy or fruit$1 or vegetable$1 or salad$1)).ti,ab.	
# 23	TS=(deli or delis or delicatessen$ or "salad bar$" or buffet$ or charcuterie or "cold meat$" or "cold cut$" or "lunch meat$" or "luncheon meat$" or sandwich$ or "cooked meat$" or ham or hams or salami$ or pepperoni or sausage$ or pate or pates or hotdog$ or "hot dog$" or frankfurter$ or burger$ or hamburger$ or "corned beef" or chorizo or meatloaf or "meat loaf" or pastrami or mortadella or bolonga or baloney or boloney or polony or terrine$ or rillette$ or tongue or "potted meat$") *Indexes=MEDLINE Timespan=All years*	80,799	65,735	(deli or delis or delicatessen$ or salad bar$ or buffet$1 or charcuterie or cold meat$ or cold cut$1 or lunch meat$1 or luncheon meat$1 or sandwich$ or cooked meat$1 or ham or hams or salami$ or pepperoni or sausage$1 or pate or pates or hotdog$ or hot dog$ or frankfurter$ or burger$1 or hamburger$1 or corned beef or chorizo or meatloaf or meat loaf or pastrami or mortadella or bolonga or baloney or boloney or polony or terrine$1 or rillette$ or tongue or potted meat$1).ti,ab.	# 17
# 24	TS=("gravad lax" or gravlax or sushi or sashimi or ceviche)	402	384	(gravad lax or gravlax or sushi or sashimi or ceviche).ti,ab.	# 18
# 25	TS=(unpasteurized or unpasteurised or "un-pasteurized" or "un-pasteurised" or "raw milk$" or "raw dairy$" or "soft serve" or icecream$ or "ice cream$" or mayonnaise or coleslaw$ or feta or brie or camembert or "queso blanco" or chevre or "blue-vein$" or "mold ripe$" or "mould ripe$" or cheese$ or "soft ripe$" or "danish blue" or gorgonzola or roquefort or ricotta or butter or yogurt$ or yoghurt$ or yoghourt$)	18,541	16,104	(unpasteurized or unpasteurised or un-pasteurized or un-pasteurised or raw milk$ or raw dairy$ or soft serve or icecream$ or ice cream$ or mayonnaise or coleslaw$ or feta or brie or camembert or queso blanco or chevre or blue-vein$ or mold ripe$ or mould ripe$ or cheese$ or soft ripe$ or danish blue or gorgonzola or roquefort or ricotta or butter or yogurt$ or yoghurt$ or yoghourt$).ti,ab.	# 18
# 26	#25 OR #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #17 OR #16 OR #13 OR #12 OR #9 OR #8 OR #6 OR #5	226,513	160,157	or/5-19	# 20
# 27	MH=(incidence or prevalence or "epidemiological studies" or	382,049	376,251	incidence/ or prevalence/ or epidemiological studies/ or	# 21

	"epidemiological monitoring")			epidemiological monitoring/	
# 28	TS=("statistics & numerical data" OR epidemiology)	1,674,929	1,579,731	(sn or ep).fs.	# 22
# 29	TI=(incidence or prevalence or occurrence$ or epidemiolog$)	258,272	289,790	(incidence or prevalence or occurrence$ or epidemiolo$).ti.	# 23
# 30	TS="Risk Factors"	741,835	596,646	Risk Factors/	# 24
# 31	#30 OR #29 OR #28 OR #27	2,184,141	2,011,573	or/21-24	# 25
# 32	#31 OR #26	2,382,698	2,151,562	20 or 25	# 26
# 33	#32 AND #4	5,730	5,127	26 and 4	# 27
# 34	(#33) *AND* **DOCUMENT TYPES:** (Case Reports OR Editorial OR Letter OR News)	260	1,424,188	(case report or news or letter or editorial).pt.	# 28
# 35	(TI="case report") *AND* **DOCUMENT TYPES:** (Case Reports OR Editorial OR Letter OR News)	135,827			
# 36	#35 OR #34	136,068	165,484	case report.ti.	# 29
# 37	#33 NOT #36	5,470	5,006	27 not (28 or 29)	# 30
# 38	#37 *Timespan=1990-2015*	**4,984**	4,499	limit 30 to yr="1990 -Current"	# 31
			4,452	Remove duplicates from #31	# 32
# 39	#37 *Timespan=2014-2015*	**572**			

TS=topic, TI=title, MH=MeSH Heading.

Table A. 4: Search strategy for leafy greens and melons performed in MEDLINE*, Web of Knowledge, Thomson Reuters. Years: 1950-present. Database last updated 01/12/2015. Database searched 02/12/2015.

Set	Undated search (02/12/2015)	Results	Results	Search from previous contractor (12/12/2014)	Set
# 1	MH:exp=(Listeria monocytogenes)	10,864	10,881	exp Listeria monocytogenes/	# 1
# 2	MH:exp=(Listeriosis)	7,257	7,351	exp Listeriosis/	# 2
# 3	TS=(listeria or listeriosis or l monocytogenes)	19,425	17,405	(listeria or listeriosis or l monocytogenes).ti,ab.	# 3
# 4	#3 OR #2 OR #1	19,425	19,046	or/1-3	# 4
# 5	MH=(cucurbitaceae or cucumis or cucumis melo)	1,311	1,200	cucurbitaceae/ or cucumis/ or cucumis melo/	# 5
# 6	TS=(melon or melons)	1,535	1,416	(melon or melons).ti,ab.	# 6
# 7	TS=(muskmelon$ or watermelon$ or wintermelon$)	1,224	1,148	(muskmelon$1 or watermelon$1 or wintermelon$1).ti,ab.	# 7
# 8	TS=(cantaloup$ or honeydew$ or honey-dew$ or galia$)	683	642	(cantaloup$2 or honeydew$1 or honey-dew$1 or galia$1).ti,ab,kf.	# 8
# 9	TS=(casaba$ or crenshaw$ or charentais or charantais or derishi$ or kiwano$ or melonpear$ or sharlyn$ or xigua$)	55	52	(casaba$1 or crenshaw$1 or charentais or charantais or derishi$1 or kiwano$1 or melonpear$1 or sharlyn$1 or xigua$1).ti,ab.	# 9
# 24	TS=(cucurbitace$ or benincasa or "b hispida" or citrullus or "c lanatus" or "cucumeropsis mannii" or "c mannii" or	4,523	3,180	(cucurbitace$ or benincasa or b hispida or citrullus or c lanatus or cucumeropsis mannii or c mannii or lagenaria siceraria or	# 10

	"lagenaria siceraria" or "l siceraria" or cucumis or "c metuliferus" or "c melo" or "netted gem$" or momordica or "m balsamina" or "m charantia" or "m foetida")			l siceraria or cucumis or c metuliferus or c melo or netted gem$1 or momordica or m balsamina or m charantia or m foetida).ti,ab.	
# 26	#24 OR #9 OR #8 OR #7 OR #6 OR #5	7,020	5,786	or/5-10	# 11
#10	MH=(Beta vulgaris)	1,259	1,169	Beta vulgaris/	# 12
# 11	MH:exp=Brassica	9,094	8,613	exp Brassica/	# 13
# 12	MH=Apium graveolens	206	197	Apium graveolens/	# 14
# 13	MH=Spinacia oleracea	2,673	2,614	Spinacia oleracea/	# 15
# 14	MH=Chicory	331	312	Chicory/	# 16
# 15	MH=Brassicaceae	1,430	1,331	Brassicaceae/	# 17
# 16	MH=Chenopodium ambrosioides	45	40	Chenopodium ambrosioides/	# 18
# 17	MH=Lettuce	1,899	1,744	Lettuce/	# 19
# 18	TS=(green or greens)	139,381	107,438	(green or greens).ti,ab.	# 20
# 19	TS=(leaf or leafy)	117,441	50,875	(leaf or leafy).ti,ab,kf.	# 21
# 20	TS=(salad or salads)	1,551	1,477	(salad or salads).ti,ab,kf.	# 22
# 21	TS=herb$	19,264	65,371	herb$.ti,ab,kf.	# 23
# 25	TS=("eruca sativa" or "e sativa" or "eruca vesicaria" or "e vesicaria" or rocket$ or rucola$ or rucoli or rugula$ or colewort$ or roquette$ or arugula$)	2,527	2,398	(eruca sativa or e sativa or eruca vesicaria or e vesicaria or rocket$ or rucola$ or rucoli or rugula$ or colewort$ or roquette$ or arugula$).ti,ab.	# 24
# 31	TS=(beet or beets or beetroot$ or "beta vulgari$" or "b vulgari$" or chard or chards)	4,274	4,363	(beet or beets or beetroot$1 or beta vulgari$ or b vulgari$ or chard or chards).ti,ab.	# 25
# 27	TS=(cabbage$ or brassica$ or choy$ or choi$ or pekinensis or chinensis or "b campestris" or "b rapa" or mustard$)	32,803	24,460	(cabbage$1 or brassica$ or choy$1 or choi$1 or pekinensis or chinensis or b campestris or b rapa or mustard$1).ti,ab.	# 26
# 28	TS=(bitterleaf$ or "vernonia amygdalina" or "v amygdalina" or onugbu$ or shiwaka$ or ewuro$ or hausas or yorubas)	832	160	(bitterleaf$1 or vernonia amygdalina or v amygdalina or onugbu$1 or shiwaka$1 or ewuro$1 or hausas or yorubas).ti,ab.	# 27
# 30	TS=("b oleracea" or savoy$)	567	525	(b oleracea or savoy$1).ti,ab.	# 28
# 23	TS=(celtuce$ or "lactuca sativa" or "l sativa" or lettuce$)	4,066	3,640	(celtuce$ or lactuca sativa or l sativa or lettuce$).ti,ab.	# 29
# 22	TS=("basella alba" or "b alba" or pui or spinach$ or "spinacia oleracea" or "s oleracea" or "malabar nightshade$" or "broad bologi$")	8,168	7,191	(basella alba or b alba or pui or spinach$ or spinacia oleracea or s oleracea or malabar nightshade$ or broad bologi$).ti,ab.	# 30
# 29	TS=(silverbeet$ or "bright lights" or seakale$ or mangold$)	223	234	(silverbeet$1 or bright lights or seakale$1 or mangold$).ti,ab.	# 31
# 32	TS=(chicor$ or endive$ or "cichorium intybus" or "c intybus" or "cichorium endivia" or "c endivia" or "blue dais$" or "blue dandelion$" or "blue sailors" or "blue weed$" or bunk or coffeeweed$ or "coffee-weed$" or cornflower or	1,040	974	(chicor$ or endive$ or cichorium intybus or c intybus or cichorium endivia or c endivia or blue dais$ or blue dandelion$ or blue sailors or blue weed$ or bunk or coffeeweed$ or coffee-weed$ or cornflower or hendibeh$ or	# 32

	hendibeh$ or horseweed$ or "ragged sailors" or succory$ or "wild bachelor$" or radicchio$ or sugarloaf$ or witloof or witlof$)			horseweed$ or ragged sailors or succory$ or wild bachelor$ or radicchio$ or sugarloaf$ or witloof or witlof$).ti,ab.	
# 33	TS=(collard or collards or "b oleracea" or couve$ or berza$ or verza$ or ra?tika$ or ra?tan$ or haak$ or "sukuma wiki$")	778	728	(collard or collards or b oleracea or couve$1 or berza$1 or verza$1 or ra?tika$1 or ra?tan$1 or haak$1 or sukuma wiki$1).ti,ab.	# 33
# 34	TS=(cress or cresses or "lepidium sativum" or "l sativum" or pepperwort$ or "poor man$ pepper" or chandrashoor$ or watercress$ or "nasturtium officinale" or "n officinale")	998	901	(cress or cresses or lepidium sativum or l sativum or pepperwort$1 or poor man$ pepper or chandrashoor$ or watercress$ or nasturtium officinale or n officinale).ti,ab.	# 34
# 35	TS=(fris?e or grumolo$ or scarola$ or scarole$)	34	46	(fris?e or grumolo$ or scarola$ or scarole$).ti,ab.	# 35
# 36	TS=(epazote$ or wormseed$ or "worm-seed$" or "jesuit$ tea$" or "mexican tea$" or paico$ or "dysphania ambrosioides" or "d ambrosioides" or "chenopodium ambrosioides" or "c ambrosioides")	114	105	(epazote$ or wormseed$ or worm-seed$ or jesuit$ tea$1 or mexican tea$1 or paico$1 or dysphania ambrosioides or d ambrosioides or chenopodium ambrosioides or c ambrosioides).ti,ab.	# 36
# 37	TS=(celery$ or celeries or "apium graveolens" or "a graveolens" or celeriac$ or smallage)	948	864	(celery$1 or celeries or apium graveolens or a graveolens or celeriac$1 or smallage).ti,ab.	# 37
# 38	TS=komatsuna$	40	37	komatsuna$.ti,ab.	# 38
# 39	TS=("valerianella locusta" or "v locusta" or m?che$ or fetticus or feldsalat$ or rapunzel$ or doucette$ or raiponce$ or n?sslisalat$ or n?ssli$)	2,585	1,257	(valerianella locusta or v locusta or m?che$1 or fetticus or feldsalat$1 or rapunzel$1 or doucette$1 or raiponce$1 or n?sslisalat$1 or n?ssli$1).ti,ab.	# 39
# 40	TS=("barbarea verna" or "b verna" or yellowrocket$ or wintercress$ or "barbarea praecox" or "b praecox" or "lepidum nativum" or "l nativum" or cassabully$)	15	13	(barbarea verna or b verna or yellowrocket$1 or wintercress$1 or barbarea praecox or b praecox or lepidum nativum or l nativum or cassabully$1).ti,ab.	# 40
# 41	TS=("lactuca scariola" or "l scariola")	4	4	(lactuca scariola or l scariola).ti,ab.	# 41
# 42	TS=(mizuna$ or "shui cai$" or kyona$ or peppergrass$ or "pepper grass$")	12	10	(mizuna$1 or shui cai$1 or kyona$1 or peppergrass$1 or pepper grass$1).ti,ab. ()	# 42
# 43	TS=sinapis	694	620	sinapis.ti,ab.	# 43
# 44	TS=("tetragonia tetragonioides" or "t tetragonioides" or "t expansa" or "tetragonia expansa" or k?kihi$ or tetragon$)	140	130	(tetragonia tetragonioides or t tetragonioides or t expansa or tetragonia expansa or k?kihi$1 or tetragon$1).ti,ab. ()	# 44
# 45	TS=(rapini$ or "broccoli raab$" or "broccoli rabe$" or "cime di rapa$" or rapi or rapini$ or friarielli$ or "broccoli di rapa$" or broccoletti$ or grelos$)	109	113	(rapini$1 or broccoli raab$1 or broccoli rabe$1 or cime di rapa$1 or rapi or rapini$1 or friarielli$1 or broccoli di rapa$ or broccoletti$1 or	# 45

				grelos$1).ti,ab.	
# 46	TS=(tatsoi$ or "brassica narinosa" or "b narinosa")	5	4	(tatsoi$1 or brassica narinosa or b narinosa).ti,ab.	# 46
# 47	TS=("ipomoea aquatic" or "i aquatic" or "water morning glory$" or convolvulus or kangkong$ or "phak bung$" or "rau mu?ng$" or trokuon$ or "kolmou xak$" or "kolmi shak$" or kangkung$ or hayoyo$)	206	159	(ipomoea aquatic or i aquatic or water morning glory$ or convolvulus or kangkong$1 or phak bung$1 or rau mu?ng$1 or trokuon$1 or kolmou xak$1 or kolmi shak$1 or kangkung$1 or hayoyo$1).ti,ab.	# 47
# 48	TS=(kale$ or borecole$ or "cavolo nero$" or lacinato$)	646	514	(kale$1 or borecole$1 or cavolo nero$1 or lacinato$1).ti,ab.	# 48
# 49	#48 OR #47 OR #46 OR #45 OR #44 OR #43 OR #42 OR #41 OR #40 OR #39 OR #38 OR #37 OR #36 OR #35 OR #34 OR #33 OR #32 OR #31 OR #30 OR #29 OR #28 OR #27 OR #25 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16 OR #15 OR #14 OR #13 OR #12 OR #11 OR #10	318,032	261,081	or/12-48	# 49
# 50	#49 OR #26	323,237	598	4 and (11 or 49)	# 50
# 51	#50 AND #4	732			
# 52	(#51) *AND* **DOCUMENT TYPES:** (Case Reports OR Editorial OR Letter OR News)	10	1442657	(case report or news or letter or editorial).pt.	# 51
# 53	TI="case report"	173,235	167406	case report.ti.	# 52
# 54	#53 OR #52	173,245	595	50 not (51 or 52)	# 53
# 55	#51 NOT #54	**722**			
# 56	#55 *Timespan=1990-2015*	**698**	576	limit 53 to yr="1990 -Current"	# 54
			558	Remove duplicates from #54	# 55
# 57	#55 *Timespan=2014-2015*	**132**			

TS=topic, TI=title, MH=MeSH Heading.

Appendix B – Data extraction questions

The following tables list the questions (implemented to Distiller SR) used to collect information from the eligible studies related with: General information about the study, RTE food sample and analytical procedures, Risk factors and Outcome.

Table B. 1: General information about the study

Question Text	Type	Answer Text
Type of reference:	Radio	• Scientific paper • Report • Dissertation thesis • Other (specify)
Country where the study was conducted:	Radio	List of European countries / Other (specify)
Start year when the study was conducted:	Radio	List of years / Not reported
End year when the study was conducted:	Radio	List of years / Not reported
Publication year:	Radio	List of years
Type/design of study:	Radio	Observational / Experimental
Aim of the study:	Checkbox	• Survey about naturally exposed products • Performance of analytical methods in naturally • Intervention in non-inoculated products • Outbreak investigation or recall • Other (specify)

Table B. 2: Ready-to-eat (RTE) food sample and analytical procedure

B.2.1: RTE food sample

Question Text	Type	Answer Text
RTE product category	Checkbox	• Meat • Seafood • Dairy • Produce • Composite (e.g. meals) • Other
Meat product sub-category	Checkbox	• Raw • Cooked meat (whole meat • Cooked sausage • Pâté • Fermented • Dry cured • Other meat products
Seafood sub-category:	Checkbox	• Cold smoked • Hot smoked • Smoked • Cured/salted (gravad, • Shellfish • Other seafood products
Dairy product sub-category	Checkbox	• Milk

		• Cheese (type not specified) • Soft/semi soft cheese • Hard/firm cheese • Fresh cheese • Cheese (other type • Ice cream • Butter • Cream • Other dairy products
Produce sub-category:	Checkbox	• Leafy vegetables • Fruits • Other vegetables • Other (specify)
Other products sub-category:	Checkbox	• Composite food (specify) • Other (specify)
If meat product, animal of the origin of the meat:	Checkbox	• Pork • Poultry • Beef • Sheep • Other (specify) • Not reported
If fish, animal of the origin of the fish product:	Checkbox	• Salmon • Haddock • Cod • Mackerel • Mussels • Prawns • Other (specify) • Not reported
If dairy, animal of the origin of the dairy product:	Checkbox	• Cow • Sheep • Goat • Other (specify) • Not reported
If dairy, type of milk used in terms of thermal treatment	Checkbox	• Raw • Thermized • Pasteurized • Other (specify) • Not reported
If produce, type:	Checkbox	• Fruit/s (specify) • Leafy greens (specify) • Other produce (specify) • Not reported
RTE product additional description (e.g. frankfurter, mortadella, smoked cooked ham, etc.), if provided:	Text	
Geographical region of production/sampling, if provided:	Text	
For imports: specify country/region of manufacture	Text	

B.2.2: Sampling and analytical procedures

Question Text	Type	Answer Text
Sampling location	Checkbox	• Farm • Manufacturer • Retail • Supermarket • Grocery store • Delicatessen shop • Local (street) market • Household • Restaurant/Cafeteria/Bar • Catering • Street vendor • Other (specify) • Not reported
Sampling season	Checkbox	• Summer • Autumn • Winter • Spring • Not reported
Were samples taken by official control?	Radio	• Yes • No • Doubtful
Sample size (total number of RTE products tested):	Text	
Sampling type I (sampling scheme):	Radio	• Batch based • Single sample • Replicates • Other (specify)
Sampling type II:	Radio	• Single • Pool • Other (specify)
Analysed sample portion (value):	Text	
Analysed sample portion (units):	Radio	• g • mL • Other (specify)
DETECTION analytical method (select	Radio	• 1_ISO 11290-1:1996 • 2_ISO 11290-1:1996/Amd 1:2004 • 3_ISO 11290-1:1996/Amd 1:2004 + PCR • 4_ISO validated method, specify • 5_FDA, specify ref if provided • 6_Custom detection, specify enrichment media • 7_Other method, specify • Several methods, specify • Not applicable (only enumeration)
DETECTION Limit of Detection:	Radio	• Value: (specify) • Not reported
DETECTION results units:	Radio	• Presence/Absence • CFU/g • CFU/mL • CFU/cm^2 • Log CFU/g • Log CFU/mL

Question Text	Type	Answer Text
		• Log CFU/cm^2 • Other (specify)
ENUMERATION analytical method (select one):	Radio	• 1_ISO 11290-2:1998 • 2_ISO 11290-2:1998/Amd 1:2004 • 3_ISO 11290-2:1998/Amd 1:2004+PCR • 4_ISO validated method, specify • 5_FDA, specify reference if provided • 6_Custom plate count enumeration, specify agar • 7_MPN, specify media • 8_Other method, specify • Several methods, specify • Not applicable (only detection)
ENUMERATION Limit of Detection:	Radio	• Value/s: (specify) • Not reported
ENUMERATION results units:	Radio	• CFU/g • CFU/mL • CFU/cm^2 • Log$_{10}$ CFU/g • Log CFU/mL • Log CFU/cm^2 • MPN/g • MPN/mL • Log MPN/g • Log MPN/mL • Other (specify)

CFU: colony forming units; MPN: most probable number; RTE: ready-to-eat.

Table B. 3: Risk factors

B.3.1: Manufacturing and production environment factors

Question Text	Type	Answer Text
HACCP system	Radio	• Present • Absent • Not considered • Other (specify)
Education and training of food	Radio	• Present • Absent • Not considered • Other (specify)
Cleaning and disinfection	Radio	• Present • Absent • Not considered • Other (specify)
Food contact surface testing	Radio	• Present • Absent • Not considered • Other (specify)
Food Contact Surface testing	Radio	• Not provided • Lm detected • Lm not detected

		• Other
Non-Food Contact Surface	Radio	• Present • Absent • Not considered • Other (specify)
Non-Food Contact Surface	Radio	• Not provided • Lm detected • Lm not detected • Other
Food handler's testing	Radio	• Present • Absent • Not considered • Other (specify)
Food handler's testing results	Radio	• Not provided • Lm detected • Lm not detected • Other
Type of processing	Checkbox	• Raw • Heated/Cooked • Cured • Fermented • Marinated • Salted/dried • Other (specify)
Exposure (including post-lethally	Radio	• Yes • No • Doubtful
Type of exposition/post-lethal exposition, if relevant	Checkbox	• (Re)packaging • Cutting/slicing • Assembling with other ingredients • Partitioning • Other (specify) • Not reported
AMA or AMP[(a)] (to limit or supress Lm growth)	Radio	• Yes • No • Not reported
Type of AMA or AMP, if relevant	Checkbox	• Preservatives in the formulation (specify preservatives) • Preservatives in the product surface (specify preservatives) • Antimicrobial active packaging (specify preservatives) • Freezing storage (specify temperature) • Fermentation/curing/etc. achieving a listeriostatic final product characteristics (describe) • Other (specify) • Not reported
PLT[(b)] application	Radio	• Yes • No • Not reported

Type of PLT, if relevant	Checkbox	• In-package thermal treatment (e.g. hot water/steam pasteurization) • High hydrostatic pressure • Not reported • Other (specify)

AMA: antimicrobial agent; AMP: antimicrobial process, CFU: colony forming units; HACCP: Hazard Analysis and Critical Control Points; Lm: *Listeria monocytogenes;* MPN: most probable number; PLT: Post-lethality treatment; RTE: ready-to-eat.

(a): A substance (e.g. preservatives such as lactate, diacetate, etc.) in or added to an RTE product or an operation (e.g. freezing) that is applied to a RTE product that has the effect of suppressing or limiting the growth of a pathogen (e.g. *L. monocytogenes*) in the product throughout the shelf-life of the product.

(b): A lethality treatment that is applied or is effective after the RTE product comes into direct contact with a food contact surface after the lethaly treatment (e.g. cooking) and it is applied to the final product or sealed package of product to reduce or eliminate the level of a pathogenic microorganisms (e.g. *L. monocytogenes*) resulting from contamination from post-lethality exposure.

B.3.2: Product characteristics

Question Text[(a)]	Type	Answer Text
Publication provides information regarding:	Checkbox	pH and/or a_w Salt, nitrite, lactate and/or acetate Not provided
Product 1 name	Text	
Product 1 type (category, sub-category)	Text	
pH product 1	Checkbox	N= Mean= Median= Standard deviation= Standard error= Min= Max= Other (specify) Not provided
a_w product 1	Checkbox	N= Mean= Median= Standard deviation= Standard error= Min= Max= Other (specify) Not provided

a_w: water activity

(a): Name, type, pH and a_w questions were repeated as many times as products reported in the record as product 1, product 2, product 3, etc.

Question Text[(b)]	Type	Answer Text
Product 1 name	Text	
Product 1 type (category, sub-category)	Text	
Salt	Checkbox	Present (tick and specify below amount and units) --- N= --- Mean= --- Median= --- Standard deviation= --- Standard error=

		--- Min= --- Max= --- Other (specify) --- Present but amount not reported NOT present NOT reported If PRESENT, specify units
Nitrite	Checkbox	Present (tick and specify below amount and units) --- N= --- Mean= --- Median= --- Standard deviation= --- Standard error= --- Min= --- Max= --- Other (specify) --- Present but amount not reported NOT present NOT reported If PRESENT, specify units
Acid lactic / lactate	Checkbox	Present (tick and specify below amount and units) --- N= --- Mean= --- Median= --- Standard deviation= --- Standard error= --- Min= --- Max= --- Other (specify) --- Present but amount not reported NOT present NOT provided If PRESENT, specify units
Acid acetic / Acetate	Checkbox	Present (tick and specify below amount and units) --- N= --- Mean= --- Median= --- Standard deviation= --- Standard error= --- Min= --- Max= --- Other (specify) --- Present but amount not reported NOT present NOT reported If PRESENT, specify units

(b): Name, type, salt, nitrite, lactic acid/lactate and acetic acid/acetate questions were repeated as many times as products reported in the record as product 1, product 2, product 3, etc.

Other preservatives (specify)	Text	
Smoking	Checkbox	Natural Liquid Type not specified Other (specify)

		Smoking not reported but possible Product(s) not smoked
Packaging type	Checkbox	MAP (specify composition if provided) Vacuum Normal atmosphere Other (specify) Not reported No packaging
Packaging site	Checkbox	By manufacturer In-store Not pre-packaged Other Not reported
Shelf-life of the products	Radio	Within shelf-life Within shelf-life and remaining time provided (specify) Expired Other (specify) Not reported
Temperature conditions (ºC) at the time of taking the sample for the study	Checkbox	Meat products (specify) Seafood (specify) Dairy products (specify) Produce (specify) Composite food (specify) Other products (specify) Not reported

MAP: modified atmosphere packaging.

Table B. 4: Outcome

Question Text [(a)]	**Type**	**Answer Text**
Meat 1 Name	Text	
Meat 1 Sub-category	Radio	Raw meat Cooked meat Cooked sausages Pâté Fermented meat Dry cured meat Other
Total number of samples analysed	Text	
L. monocytogenes positive samples	Text	
Meat 1 Prevalence	Text	
Meat 1 Level (I)	Checkbox	Quantitative Semi-quantitative Not reported
Meat 1 Level (II)	Checkbox	Concentration Units (e.g. CFU/g, $\log_{10}$ CFU/g...)
Meat 1 Level (III)	Checkbox	0.04-0.1 (specify number of samples) >0.1-1 (specify number of samples) >1-10 (specify number of samples) >10-100 (specify number of samples) >100-1,000 (specify number of samples) >1,000-10,000 (specify number of samples) >10,000-100,000 (specify number of samples)

		>100,000-1,000,000 (specify number of samples) Other (specify range, number of samples) Units of concentration range % contaminated product with levels >100 CFU/g or mL

CFU: colony forming units.

Seafood 1 Name	Text	
Seafood 1 Sub-category	Radio	Cold smoked Hot smoked Smoked Cured/salted Shellfish Other
Total number of samples analysed	Text	
L. monocytogenes positive samples	Text	
Seafood 1 Prevalence	Text	
Seafood 1 Level (I)	Checkbox	Quantitative Semi-quantitative Not reported
Seafood 1 Level (II)	Checkbox	Concentration Units (e.g. CFU/g, log CFU/g...)
Seafood 1 Level (III)	Checkbox	0.04-0.1 >0.1-1 >1-10 >10-100 >100-1,000 >1,000-10,000 >10,000-100,000 >100,000-1,000,000 Other (specify range, number) Units of concentration range % contaminated product with levels >100 CFU/g or mL

CFU: colony forming units.

Dairy 1 Name	Text	
Dairy 1 Sub-category	Radio	Milk Cheese (type not specified) Soft/semisoft cheese Hard/firm cheese Fresh cheese Ice cream Butter Cream Other
Total number of samples analysed	Text	
L. monocytogenes positive samples	Text	
Dairy 1 Prevalence	Text	
Dairy 1 Level (I)	Checkbox	Quantitative Semi-quantitative Not reported
Dairy 1 Level (II)	Checkbox	Concentration Units (e.g. CFU/g, log CFU/g...)
Dairy 1 Level (III)	Checkbox	0.04-0.1

		>0.1-1 >1-10 >10-100 >100-1,000 >1,000-10,000 >10,000-100,000 >100,000-1,000,000 Other (specify range, number) Units of concentration range % contaminated product with levels >100 CFU/g or mL

CFU: colony forming units.

Produce 1 Name	Text	
Produce 1 Sub-category	Radio	Leafy vegetables Fruits Other vegetables Fruits, leafy vegetables and/or other vegetables
Total number of samples analysed	Text	
L. monocytogenes positive samples	Text	
Produce 1 Prevalence	Text	
Produce 1 Level (I)	Checkbox	Quantitative Semi-quantitative Not reported
Produce 1 Level (II)	Checkbox	Concentration Units (e.g. CFU/g, log CFU/g...)
Produce 1 Level (III)	Checkbox	0.04-0.1 >0.1-1 >1-10 >10-100 >100-1,000 >1,000-10,000 >10,000-100,000 >100,000-1,000,000 Other (specify range, number) Units of concentration range % contaminated product with levels >100 CFU/g or mL

CFU: colony forming units.

Other 1 Name	Text	
Other products 1 Sub-category	Radio	Composite food Other
Total number of samples analysed	Text	
L. monocytogenes positive samples	Text	
Other 1 Prevalence	Text	
Other 1 Level (I)	Checkbox	Quantitative Semi-quantitative Not reported
Other 1 Level (II)	Checkbox	Concentration Units (e.g. CFU/g, log CFU/g...)
Other 1 Level (III)	Checkbox	0.04-0.1 >0.1-1 >1-10 >10-100

			>100-1,000 >1,000-10,000 >10,000-100,000 >100,000-1,000,000 Other (specify range, number) Units of concentration range % contaminated product with levels >100 CFU/g or mL

CFU: colony forming units.
(a): For each food category, questions were repeated as many times as products reported in the record as product 1, product 2, product 3, etc.

Serotypes of *L. monocytogenes* isolates		Radio	Provided Not provided Other (specify)
Detected serotypes		Checkbox	1/2a 1/2b 1/2c 3a 3b 3c 4a 4ab 4b 4c 4d 4e Other (specify) 1/2a-3a (I.1) 1/2c-3c (I.2) 4b-4d-4e (II.1) 1/2b-3b-7 (II.2) 4a-4c (III)
Number of isolates analysed		Text	
Origin of the isolates		Radio	RTE products RTE and non-RTE products RTE, non-RTE products and environment Other
Percentage of	1/2a	Text	
Percentage of	1/2b	Text	
Percentage of	1/2c	Text	
Percentage of	3a	Text	
Percentage of	3b	Text	
Percentage of	3c	Text	
Percentage of	4a	Text	
Percentage of	4ab	Text	
Percentage of	4b	Text	
Percentage of	4c	Text	
Percentage of	4d	Text	
Percentage of	4e	Text	
Percentage of	Other (specify)	Text	
Percentage of	1/2a-3a (I.1)	Text	
Percentage of	1/2c-3c (I.2)	Text	
Percentage of	4b-4d-4e (II.1)	Text	

Percentage of	1/2b-3b-7 (II.2)	Text
Percentage of	4a-4c (III)	Text
Provide additional comments/warnings if necessary:		Text

RTE: ready-to-eat.

Appendix C – Results of the data extraction of the eligible studies

The following tables summarize the results obtained in the data extraction from the eligible records (N=308) by each question implemented in the Distiller SR form.

Table C. 1: General information about the studies

Question	Answer	n (%)
Country where the study was	Austria	7 (2.3%)
	Belgium	12 (3.9%)
	Bulgaria	1 (0.3%)
	Croatia	6 (1.9%)
	Cyprus	1 (0.3%)
	Czech Republic	3 (1.0%)
	Denmark	5 (1.6%)
	Estonia	2 (0.6%)
	Finland	7 (2.3%)
	France	8 (2.6%)
	Germany	9 (2.9%)
	Greece	21 (6.8%)
	Hungary	2 (0.6%)
	Iceland	3 (1.0%)
	Ireland	11 (3.6%)
	Italy	60 (19.5%)
	Latvia	1 (0.3%)
	Netherlands	1 (0.3%)
	Norway	4 (1.3%)
	Other	4 (1.3%)
	Poland	7 (2.3%)
	Portugal	14 (4.5%)
	Romania	2 (0.6%)
	Serbia	4 (1.3%)
	Slovakia	1 (0.3%)
	Spain	40 (13%)
	Sweden	4 (1.3%)
	Switzerland	1 (0.3%)
	Turkey	30 (9.7%)
	United Kingdom	37 (12.0%)

Time when the study was conducted:	Start year	End year	Publication
1987	2	0	0
1988	5	4	0
1989	8	4	0
1990	2	5	5
1991	6	2	10
1992	6	5	3
1993	1	3	8
1994	2	2	7
1995	5	0	5
1996	4	5	8
1997	5	3	4
1998	9	7	12
1999	7	8	7

2000	6	9	6
2001	10	8	12
2002	10	9	6
2003	11	6	9
2004	10	13	14
2005	16	12	10
2006	7	10	21
2007	11	11	19
2008	11	12	13
2009	11	6	15
2010	9	18	18
2011	11	13	17
2012	4	12	18
2013	4	4	21
2014	1	3	17
2015	0	0	23
Not reported	114	114	0
Type/design of study:	Observational		301 (97.7%)
	Experimental		7 (2.3%)
Aim of the study:	Survey about naturally exposed products		276 (89.6%)
	Performance of analytical methods in		24 (7.8%)
	Intervention in non-inoculated products		7 (2.3%)
	Outbreak investigation or recall		1 (0.3%)
	Other (specify)		1 (0.3%)

n: number of studies.

Table C. 2: RTE food sample and analytical procedures

C.2.1: RTE food samples

Question	Answer	n	%[(a)]
RTE product category	Meat	110	35.7%
	Seafood	79	25.6%
	Dairy	139	45.1%
	Produce	58	18.8%
	Composite	62	20.1%
	Other	16	5.2%
Meat products sub-category:	Raw	6	1.9%
	Cooked meat	63	20.5%
	Cooked sausage	21	6.8%
	Pâté	21	6.8%
	Fermented	50	16.2%
	Dry cured	17	5.5%
	Other	13	4.2%
Seafood products sub-category:	Cold smoked	28	9.1%
	Hot smoked	9	2.9%
	Smoked	33	10.7%
	Cured/salted	15	4.9%
	Shelfish	7	2.3%
	Other seafood	24	7.8%
Dairy products sub-category:	Milk	42	13.6%
	Cheese_not specified	23	7.5%
	Soft/semi soft cheese	46	14.9%
	Hard/firm cheese	29	9.4%

	Fresh cheese	26	8.4%
	Cheese_specified	29	9.4%
	Ice cream	20	6.5%
	Butter	16	5.2%
	Cream	9	2.9%
	Other dairy	19	6.2%
Produce sub-category:	Leafy vegetables	43	14.0%
	Fruits	11	3.6%
	Other vegetables	31	10.1%
	Other	13	4.2%
Other products sub-category:	Composite food	64	20.8%
	Other products	14	4.5%
If meat product, animal of the origin of the meat (n=110):	Pork	38	34.5%
	Poultry	25	22.7%
	Beef	16	14.5%
	Sheep	1	0.9%
	Other	5	4.5%
	NR	59	53.6%
If fish, animal of the origin of the fish product (n=79):	Salmon	48	60.8%
	Haddock	2	2.5%
	Cod	4	5.1%
	Mackerel	6	7.6%
	Mussels	2	2.5%
	Prawns	3	3.8%
	Other seafood	35	44.3%
	NR	20	25.3%
If dairy, animal of the origin of the dairy product (n=139):	Cow	31	22.3%
	Sheep	34	24.5%
	Goat	20	14.4%
	Other species	3	2.2%
	NR	84	60.4%
If dairy, type of milk used in terms of thermal treatment (n=139):	Raw	62	44.6%
	Thermised	2	1.4%
	Pasteurized	38	27.3%
	NR	68	48.9%
If produce, type (n=58):	Fruit/s	9	15.5%
	Leafy greens	39	67.2%
	Other produce	31	53.4%
	NR	13	22.4%

n: number of studies; NR: not reported.

(a): If "n" is not specified in the question text the percentage is related to the 308 eligible records and the sum of % can be higher than 100%.

C.2.2: Analytical procedures

Question	Answer	n	%[(a)]
Sampling location	Farm	19	6.2%
	Manufacturer	102	33.1%
	Retail	107	34.7%
	Supermarket	52	16.9%
	Grocery store	3	1.0%
	Delicatessen shop	8	2.6%
	Local (street) market	27	8.8%
	Household	1	0.3%

	Restaurant/Cafeteria/Bar	27	8.8%
	Catering	13	4.2%
	Street vendor	2	0.6%
	Other	35	11.4%
	NR	19	6.2%
Sampling season	Summer	116	37.7%
	Autumn	107	34.7%
	Winter	105	34.1%
	Spring	119	38.6%
	NR	158	51.3%
Were samples taken by official	Yes	56	18.2%
	Doubtful	2	0.6%
	No	250	81.2%
Sample size (total number of RTE products tested)		From 8 to 28,835	
Sampling type I (sampling scheme)	Batch based	21	6.8%
	Single sample	264	85.7%
	Replicates	6	1.9%
	Other	17	5.5%
Sampling type II	Single	302	98.1%
	Pool	2	0.6%
	Other	4	1.3%
Analysed sample portion	25 g or mL	205	66.6%
	10 g or mL	19	6.2%
	NR	53	17.2%
	Other	31	10.1%
DETECTION analytical method:	1_ISO 11290-1:1996	55	17.9%
	2_ISO 11290-1:1996/Amd 1:2004	31	10.1%
	3_ISO+PCR confirmation	4	1.3%
	4_ISO validated method, specify	12	3.9%
	5_FDA, specify ref if provided	18	5.8%
	6_Custom detection, specify enrichment	71	23.1%
	7_Other method, specify	72	23.4%
	Several methods, specify	24	7.8%
	Not applicable (only enumeration)	21	6.8%
DETECTION Limit of Detection	Value:	221	77.0%
	Presence/25 g	193	
	Presence/10 g	12	
	Other	16	
	Not reported	66	23.0%
DETECTION results units (n=287):	Presence/Absence	287	100%
ENUMERATION analytical method:	1_ISO 11290-2:1998	25	8.1%
	2_ISO 11290-2:1998/Amd 1:2004	23	7.5%
	3_ISO 11290-2:1998/Amd	0	0.0%
	4_ISO validated method, specify	1	0.3%
	5_FDA, specify ref if provided	4	1.3%
	6_Custom plate count enumeration,	28	9.1%
	7_MPN, specify media	7	2.3%
	8_Other method, specify	20	6.5%
	Several methods, specify	11	3.6%
	Not applicable (only detection)	189	61.4%
ENUMERATION Limit of detection	Value/s:	49	42.0%
	From 0.2 CFU/g to 200 CFU/g		
	Not reported	70	66.2%

ENUMERATION results units	CFU/g	107	89.9%
	CFU/mL	4	3.4%
	MPN/g	3	2.5%
	Other	5	4.2%

n: number of studies; NR: not reported.

(a): If "n" is not specified in the question text the percentage is related to the 308 eligible records.

Table C. 3: Risk factors I: Manufacturing and production environment factors

Question	Answer	n	%[(a)]
HACCP system	Present	8	2.6%
	Absent	0	0.0%
	Not considered	300	97.4%
	Other (specify)	0	0.0%
Education and training of food handlers	Present	6	1.9%
	Absent	0	0.0%
	Not considered	302	98.1%
	Other (specify)	0	0.0%
Cleaning and disinfection programme	Present	3	1.0%
	Absent	0	0.0%
	Not considered	305	99.0%
	Other (specify)	0	0.0%
Food contact surface testing	Present	32	10.4%
	Absent	0	0.0%
	Not considered	276	89.6%
	Other (specify)	0	0.0%
Food Contact Surface testing results	Not provided	2	0.6%
	Lm detected	27	8.8%
	Lm not detected	2	0.6%
	Other	1	0.3%
Non-Food Contact Surface testing	Present	24	7.8%
	Absent	0	0.0%
	Not considered	284	92.2%
	Other (specify)	0	0.0%
Non-Food Contact Surface testing results	Not provided	2	0.6%
	Lm detected	18	5.8%
	Lm not detected	4	1.3%
	Other	0	0.0%
Food handler's testing	Present	7	2.3%
	Absent	0	0.0%
	Not considered	301	97.7%
	Other (specify)	0	0.0%
Food handler's testing results	Not provided	1	0.3%
	Lm detected	3	1.0%
	Lm not detected	2	0.6%
	Other	1	0.3%
Type of processing	Raw	127	41.2%
	Heated/Cooked	135	43.8%
	Cured	27	8.8%
	Fermented	156	50.6%
	Marinated	12	3.9%
	Salted/dried	145	47.1%
	Other (specify)	14	4.5%
Exposure (including post-lethally exposure)	Yes	145	47.1%
	No	6	1.9%
	Doubtful	157	51.0%
Type of exposition/post-lethal exposition, if relevant	(Re)packaging	86	27.9%
	Cutting/slicing	65	21.1%
	Assembling with other ingredients	30	9.7%
	Partitioning	47	15.3%

	Other (specify)	1	0.3%
	Not reported	3	1.0%
Antimicrobial agent or process (to limit or supress Lm growth)	Yes	11	3.6%
	No/Not reported	297	96.4%
Type of AMA or AMP if relevant	Preservatives in the formulation (specify	0	0.0%
	Preservatives in the product surface	0	0.0%
	Antimicrobial active packaging (specify	0	0.0%
	Freezing storage (specify temperature)	11	3.6%
	Fermentation/curing/etc. achieving a	0	0.0%
	Other (specify)	0	0.0%
	Not reported	0	0.0%
PLT application	Yes	2	0.6%
	No	35	11.4%
	Not reported	271	88.0%
Type of PLT, if relevant	In-package thermal treatment (e.g. hot water/steam pasteurization)	0	0.0%
	High hydrostatic pressure	0	0.0%
	Not reported	0	0.0%
	Other (specify)	0	0.0%

AMA: antimicrobial agent; AMP: antimicrobial process, HACCP: Hazard Analysis and Critical Control Points; Lm: *Listeria monocytogenes;* n: number of studies; PLT: Post-lethality treatment.

(a): If "n" is not specified in the question text the percentage is related to the 308 eligible records

Table C. 4: Risk factors II: Product characteristics

Question	Answer	n	%[(a)]
Publication provides information regarding	pH and/or a_w	46	14.9%
	Salt, nitrite, lactate and/or acetate	18	5.8%
Other preservatives		1	0.3%
Smoking	Natural	7	2.3%
	Type not specified	67	21.8%
	Not reported	33	10.7%
	Product(s) not smoked	91	29.5%
Packaging type	MAP	13	4.2%
	Vacuum	45	14.6%
	Normal atmosphere	25	8.1%
	Other	7	2.3%
	Not reported	212	68.8%
	No packaging	48	15.6%
Packaging site	By manufacturer	62	20.1%
	In-store	11	3.6%
	Not pre-packaged	49	15.9%
	Other	2	0.6%
	Not reported	206	66.9%
Shelf-life of the products	Within shelf-life	40	13.0%
	Within shelf-life and remaining time	0	0.0%
	Expired	1	0.3%
	Other (specify)	15	4.9%
	Not reported	252	81.8%
Temperature conditions (ºC) at the time	T meat	11	3.6%
	T seafood	14	4.5%

T dairy	4	1.3%
T produce	6	1.9%
T composite/other	4	1.3%
NR	272	88.3%

a_w: water activity; MAP: modified atmosphere packaging; n: number of studies; NR: not reported.
(a): If "n" is not specified in the question text the percentage is related to the 308 eligible records

Table C. 5: Outcome

Question	Answer	n	%[(a)]
Prevalence data provided (number of product-type in each category) (n=778)	Meat	173	22.2%
	Seafood	151	19.4%
	Dairy	276	35.5%
	Produce	74	9.5%
	Other	104	13.4%
Semi-quantitative data provided (number of products-type in each (n=244)	Meat	62	25.4%
	Seafood	57	23.4%
	Dairy	48	19.7%
	Produce	20	8.2%
	Other	57	23.4%
Quantitative data provided (number of product-type in each category) (n=14)	Meat	1	7.1%
	Seafood	1	7.1%
	Dairy	6	42.9%
	Produce	3	21.4%
	Other	3	21.4%
Serotypes of *L. monocytogenes* isolates	Provided	61	19.8%
	Not provided	247	80.2%
Detected serotypes (n=186)	1/2a	41	22.0%
	1/2b	30	16.1%
	1/2c	25	13.4%
	3a	2	1.1%
	3b	10	5.4%
	4a	4	2.2%
	4ab	3	1.6%
	4b	29	15.6%
	4c	3	1.6%
	4d	3	1.6%
	4e	3	1.6%
	Other	19	10.2%
	1/2a-3a (I.1)	5	2.7%
	1/2c-3c (I.2)	1	0.5%
	4b-4d-4e (II.1)	4	2.2%
	1/2b-3b-7 (II.2)	4	2.2%
Number of isolates analysed		From 1 to 1280	
Origin of the isolates (n=61)	RTE products	53	86.9%
	RTE and non-RTE products	4	6.6%
	RTE, non-RTE products and environment	4	6.6%

n: number of studies; RTE: ready-to-eat.

(a): If "n" is not specified in the question text the percentage is related to the 308 eligible records.

Appendix D – Tables summarizing information extracted from the eligible records

The following tables summarize the information extracted through the Distiller SR form from each eligible record (N=308).

Table D. 1: General characteristics of the studies

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
56	Italy	2006	2010	2014	P	D	Vending machine	NR	No	72	NR	mL	SS	NA		Several	CFU/ml
108	Romania	2012	2013	2015	S	M	M	NR	No	40	NR	g	SS	ISO+PCR confirmation	NR	NA	
126	Turkey	2012	2012	2014	S	C	SV	Su	No	270	25	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
130	Italy	2014	2014	2015	S	M,P,C,O	C	Su,W,Sp	No	108	25	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
137	Portugal	2013	2013	2015	S	C	S,V	W	No	20	25	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
142	Italy	NR	NR	2015	S	P	S,G	NR	No	125	30	g	SS	ISO validated	NR	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
153	Turkey	2009	2010	2014	S	S,D,P	R,LM	Su,A,W,Sp	No	252	25	g	SS	Other method	NR	NA	
255	Spain	2006	2012	2015	S	M,S,D	M,R	NR	Yes	2864	NR	g	SS	ISO 11290-1:1996	NR	NA	
268	Turkey	NR	NR	2015	S	D	F	NR	No	140	25	mL	SS	FDA	NR	NA	
334	Spain	NR	NR	2015	P	S	Local supliers	NR	No	10	NR	g	SS	NA		Several	MPN/g, CFU/g
381	Turkey	2011	2012	2015	S	C	S,RCB	NR	No	261	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
382	Serbia	2011	2011	2014	S	D,C,O	NR	NR	No	912	10	g	SS	NA		2_ISO 11290-2:1998/Amd 1:2004	CFU/g
388	Greece	2011	2011	2015	P	P	S,LM	A,Sp	No	200	10 & 25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
411	Portugal	NR	NR	2014	S	M	M	NR	No	20	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
484	Estonia	2013	2013	2015	S	D	R	Su	Yes	14	NR	mL	SS	NA		2_ISO 11290-2:1998/Amd 1:2004	CFU/ml
493	Turkey	NR	NR	2015	S	M	LM,small scale firms, butchers	NR	No	20	25	g	R	ISO 11290-1:1996	NR	NA	
494	Turkey	2011	2011	2014	S	D	LM	Sp,	No	200	25	g	SS	ISO+PCR confirmation	NR	NA	
533	Belgium	2009	2010	2014	S	P,C	RCB	Su,A,W,Sp	No	122	10 & 25	g	SS	Other method	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
534	Belgium	2011	2011	2015	S	C,O	Hospital food service	W	No	30	25	g	SS	ISO validated	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
571	Ireland	2013	2014	2014	S	M,S,D,P,O	M	Su,A,W,Sp	No	432	25	g or mL	SS	Other method	Pre/25g	NA	
581	Greece	2011	2012	2014	S	M	S	Su,A,W,Sp	No	125	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
600	Italy	2011	2012	2015	S	P	S,LM	NR	No	2532	25	g	SS	Several	Pre/25g	NA	
663	Denmark	2011	2012	2015	S	S	M	Su,A,W	No	115	10	g	O	Other method	Pre/10g	NA	
665	United Kingdom	2011	2012	2013	S	M	M	A,W,Sp	Yes	254	27	g	SS	NA		6_Custom plate count	CFU/g
667	Italy	NR	NR	2014	S	M	M	NR	No	50	25	g	B	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
689	Poland	2009	2011	2014	S	M	M	Su,A,W,Sp	Yes	1182	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
764	Italy	2003	2011	2015	S	P	University canteen	NR	No	48	25	g	SS	Other method	Pre/25g	NA	
789	Portugal	NR	NR	2015	I	M	M	NR	No	54	25	g	B,R	ISO 11290-1:1996	Pre/25g	NA	
793	Spain	2010	2012	2014	S	P	M	Su,A,W,Sp	No	500	25	g	B	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
830	Poland	2013	2014	2015	S	D	F	W	No	50	NR	mL	SS	ISO 11290-1:1996	NR	NA	
859	Spain	NR	NR	2015	P	M,S,D	R	NR	No	216	25	g	SS	Several	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
867	United Kingdom	NR	NR	2014	S	S	M	NR	No	NR	NR	g	NR	Other method	NR	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
873	Italy	NR	NR	2014	P	P	Local markets	NR	No	NR	25	g	B	ISO 11290-1:1996	Pre/25g	NA	
876	Croatia	2007	2007	2014	S	D	M	Su,A	No	12	NR	g	SS	ISO 11290-1:1996	NR	NA	
910	Austria	NR	NR	2015	S	D	Through internet	NR	No	108	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	6_Custom plate count	CFU/g
963	Spain	2008	2011	2015	S	S	RCB	NR	No	227	25	g	B	ISO 11290-1:1996	Pre/25g	NA	
964	Italy	2011	2013	2015	S	D	M	W	No	83	0.5	m^2	B	ISO 11290-1:1996/Amd 1:2004	Pre/0.5m 2	NA	
1030	Turkey	2012	2012	2015	S	C	R,S,LM	Sp	No	100	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1078	Belgium	2008	2012	2015	S	D,C	Short supply chain	NR	No	1542	25	g	NR	Other method	Pre/25g	NA	
1113	Netherlands	NR	NR	2014	S	P	M,S	Su,A,W,Sp	Yes	1932	10	g	SS	NA		1_ISO 11290-2:1998	CFU/ml
1172	Spain	2005	2006	2008	S	P	S	NR	No	272	25	g	SS	NA		1_ISO 11290-2:1998	CFU/g
1182	Spain	NR	NR	2001	S	M,S	R	NR	No	421	NR	g	SS	Other method	NR	NA	
1185	Turkey	1996	1996	1998	S	D	F,S	W,Sp	No	120	25	mL	SS	Other method	Pre/25g	NA	
1187	Turkey	NR	NR	2004	S	M,D	R,S	NR	No	200	10	g	SS	Other method	Pre/10g	NA	
1190	Italy	2007	2008	2010	P	D	M	W	No	100	25	g	SS	Other method	Pre/25g	Several	CFU/g
1191	Turkey	NR	NR	2005	S	M	LM	NR	No	100	25	g	SS	Other method	Pre/25g	NA	
1195	Portugal	2005	2006	2007	S	D	R	W,Sp	No	37	25	g	SS	NA		2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1196	Portugal	2003	2007	2013	S	D	M	Su,A,W,Sp	No	2706	NR	g	SS	Other method	NR	NA	
1206	Greece	NR	NR	2006	S	M,D,C	Army-supermarkets	NR	Yes	87	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1207	Greece	2010	2010	2012	S	D	S,LM	NR	Yes	137	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1208	Greece	2004	2004	2006	S	M	S	Su,A	No	209	25	g	SS	ISO validated	Pre/25g	NA	
1220	Spain	NR	NR	2012	S	D	R	NR	No	51	NR	g	R	ISO 11290-1:1996	NR	1_ISO 11290-2:1998	CFU/g

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1221	Turkey	NR	NR	2008	S	D	LM	NR	No	142	25	g	SS	Other method	Pre/25g	NA	
1223	Poland	1989	1990	1991	P	M,D	NR	W,Sp	Yes	151	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
1225	Greece	NR	NR	2011	S	D	Dairy plant	NR	No	120	NR	g	R	NA		8_Other method	CFU/g
1228	Germany	NR	NR	2008	S	C	S,RCB	NR	No	250	NR	g	SS	ISO 11290-1:1996	NR	NA	
1229	Turkey	2007	2008	2011	S	D	F,M	Su,A,W,Sp	No	134	25	g	SS	Other method	Pre/25g	NA	
1231	**Finland**	**NR**	**NR**	**1999**	**S**	**S**	**M**	**NR**	**No**	**44**	**NR**	**g**	**SS**	**Other method**	**NR**	**NA**	
1235	Turkey	NR	NR	2006	S	D	M,LM	NR	No	157	25	g	SS	Other method	Pre/25g	NA	
1240	Spain	2006	2006	2008	S	P	R	,A,Sp	No	159	25	g	SS	Other method	Pre/25g	NA	
1244	Italy	2010	2011	2013	S	P,C	RCB,C	Su,A,Sp	No	773	NR	g	SS	ISO validated	NR	NA	
1252	Italy	NR	NR	1993	S	D	F,M	NR	No	347	NR	g and mL	SS	Other method	NR	NA	
1257	France	2001	2002	2007	S	S	M	Su,A,W,Sp	No	1008	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	Several	CFU/g
1258	Germany	NR	NR	2005	P	S	S	NR	No	26	25	g	SS	Several	Pre/25g	4_ISO validated	CFU/g
1261	Germany	2002	2004	2006	P	S,P	R	NR	No	180	25	g	SS	Several	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1274	Spain	2003	2004	2006	P	C	RCB	A,W	No	77	25	g	SS	NA		Several	CFU/g
1281	Latvia and Lithuania	2003	2004	2007	S	M	M	NR	No	312	NR	g	SS	Other method	NR	1_ISO 11290-2:1998	CFU/g
1282	Latvia	2005	2005	2009	S	M	S	W,Sp	No	211	NR	g	B	Other method	NR	8_Other method	CFU/g
1291	Italy	2009	2011	2013	S	D	Herd and vending machine	Su,A,W,Sp	Yes	277	25	mL	B	Other method	Pre/25g	NA	
1311	Germany	2006	2006	2007	S	D	NR	Su	No	120	25	g or mL	SS	Other method	NR	NA	
1316	Italy	1988	1989	1990	S	D	NR	NR	No	87	NR	g or mL	SS	Other method	NR	NA	
1318	Yoguslavia	NR	NR	1991	S	M	NR	NR	No	50	25	g	SS	FDA	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1320	United Kingdom	1991	1992	1995	S	D	Dairies	NR	Yes	3000	25	mL	SS	Other method	Pre/25g	NA	
1323	Italy	2001	2002	2005	S	S,D,C,O	M,R	NR	Yes	22568	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1326	Spain	1998	2004	2008	S	M,S,D,C,O	M,R	NR	Yes	1266	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1332	Spain	NR	NR	2003	S	C	School lunchroons	NR	No	898	NR	g	SS	NA		1_ISO 11290-2:1998	CFU/g
1333	Portugal	2010	2010	2013	S	P	S	W,Sp,	No	50	25	g	SS	ISO validated	Pre/25g	NA	
1335	Italy	2006	2008	2010	S	P	R	Su,A,W,Sp	No	579	25	g	B	ISO validated	Pre/25g	NA	
1344	Italy	1992	1994	1996	S	M,D	R	Su,A,Sp	No	230	25	g	SS	Custom detection	Pre/25g	NA	
1346	Italy	2008	2008	2010	S	C	RCB,C	Su,Sp	No	118	NR	g	SS	ISO 11290-1:1996	NR	NA	
1348	Italy	1999	2001	2005	S	C	RCB	Su,A,W,Sp	No	894	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1379	Turkey	2010	2011	2012	S	D	LM	Su,A,W,Sp	No	200	25	g	SS	Custom detection	Pre/25g	NA	
1380	Turkey	2004	2005	2007	S	D	LM	Su,A,W,Sp	No	250	25	g	SS	FDA	Pre/25g	NA	
1381	Turkey	2004	2005	2007	S	M	LM	Su,A,W,Sp	No	300	25	g	SS	FDA	Pre/25g	NA	
1393	Italy	NR	NR	1997	S	S	R	NR	No	165	25	g	B	Custom detection	Pre/25g	7_MPN	CFU/g
1397	Ireland	NR	NR	1994	S	D	S,D	NR	No	17	25	g	R	Other method	Pre/25g	NA	
1405	Italy	2009	2010	2012	S	P	M	Su,A,W,Sp	No	16	25	g	M	ISO 11290-1:1996	Pre/25g	NA	
1406	Belgium	NR	NR	2013	S	O	M	NR	No	2912	NR	g	NR	NA		8_Other method	CFU/g
1407	Belgium	NR	NR	2013	S	O	NR	NR	No	135	25	g	SS	Custom detection	Pre/25g	1_ISO 11290-2:1998	CFU/g
1409	Italy	2009	2010	2013	S	D	M	Su,W,Sp	Doubtful	404	NR	g	SS	ISO 11290-1:1996	NR	NA	
1412	Ireland	2007	2008	2011	S	S	R	Su,A,W,Sp	No	120	25	g	M	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1413	France	1998	1998	2001	S	S	M	A	No	21	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1415	Italy	2003	2004	2007	S	M	F,R,Butcher shops	Su,A,W	No	237	25	g	SS	Custom detection	Pre/25g	7_MPN	MPN/g
1418	Italy	2005	2007	2010	S	P	M	NR	No	699	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1423	Belgium	NR	NR	2002	S	D	F,R	NR	No	71	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1424	Belgium	2002	2002	2004	S	D	F,M	NR	No	243	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1426	Spain	NR	NR	1998	S	C	D,RCB	Su,A,W,Sp	Yes	1100	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1434	Italy	NR	NR	2009	P	M,S,D	R	NR	No	50	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
1441	Italy	2005	2006	2007	S	P	R,S	Su,A,W,Sp	No	40	25	g	SS	NA		6_Custom plate count	CFU/g
1442	Italy	2003	2008	2012	S	S	M	Su,A,W,Sp	No	33	NR	g	SS	ISO 11290-1:1996	NR	NA	
1443	Italy	1997	2009	2010	S	M,S,D,O	S	Su,A,W,Sp	Doubtful	1045	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	7_MPN	MPN/g
1450	Spain	2002	2010	2011	S	C	RCB	NR	Yes	2262	25	g	SS	ISO validated	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1451	Spain	2002	2010	2012	S	S	S	NR	Yes	251	25	g	SS	ISO validated	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1452	Spain	2000	2000	2001	S	M,S	R,S	Su,A,Sp	No	352	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1470	Cyprus	1991	2000	2002	S	O	M,R,RCB	NR	Yes	28835	25	g	SS	Custom detection	Pre/25g	NA	
1476	Turkey	2011	2011	2013	S	P,C,O	RCB	Su	No	239	25	g	SS	Custom detection	Pre/25g	NA	
1481	United Kingdom	2002	2002	2004	S	M	R,C	Su	Yes	4052	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
1486	Turkey	NR	NR	2007	S	D	R	NR	No	50	25	g	SS	Custom detection	Pre/25g	NA	
1491	France	2000	2001	2004	S	S	Hypermarket	Su,A,W,Sp	No	44	25	g	B	Other method	Pre/25g	NA	
1504	France	1991	1991	1993	P	C	Bakery shops	Su,A,Sp	No	300	25	g	SS	Several	Pre/25g	NA	
1505	Greece	2005	2006	2009	S	M,D,P	LM	Su,A,W,Sp	No	150	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1516	Ireland	2001	2003	2006	S	P	S	Su,A,W,Sp	No	720	25	g	SS	Custom detection	Pre/25g	5_FDA	CFU/g
1519	Spain	NR	NR	1996	S	D	M	Su,A,W,Sp	No	44	25	g	SS	Custom detection	Pre/25g	NA	
1522	Croatia	NR	NR	2010	P	D	NR	NR	No	180	25	g	SS	Several	Pre/25g	NA	
1526	United Kingdom	NR	NR	1994	S	S	M,R	NR	No	81	NR	g	SS	Other method	NR	NA	
1530	Italy	NR	NR	2012	S	S	R	NR	No	114	NR	g	B	ISO 11290-1:1996/Amd 1:2004	NR	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1535	Spain	1992	1993	1996	S	P	M	Su,A,Sp	No	70	25	g	SS	Custom detection	Pre/25g	NA	
1538	Spain	NR	NR	2009	S	M,S	R,S	NR	No	783	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1539	Italy	NR	NR	1993	S	M	R	NR	No	77	10	g	SS	NA		Several	CFU/g
1542	Czech Republic	2004	2008	2009	S	M,S,D,P,C	R	NR	Yes	2180	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1544	Italy	1988	1988	1990	S	D	NR	NR	Yes	203	25	g	SS	Other method	Pre/25g	NA	
1551	Italy	2008	2011	2013	S	D	Vending machine	NR	Yes	15181	25	mL	SS	Several	Pre/25mL	NA	
1552	Italy	2010	2010	2012	S	D	Bulk tanks and vending machines	Su,W,Sp	No	99	25 & 4x210	mL	SS	Several	NR	NA	
1554	Italy	2009	2009	2011	S	D	R,LM	Su,W	No	50	25	g	SS	Custom detection	Pre/25g	NA	
1556	Italy	2002	2003	2006	S	M	M	Su,A,W,Sp	No	1020	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1562	United Kingdom	1989	1990	1993	S	M	R,S,D	NR	Yes	2460	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1563	United Kingdom	1998	1998	2000	S	M	RCB,hotels, residential care homes, public houses	Su,Sp	Yes	3455	NR	g	SS	NA		5_FDA	CFU/g
1571	Spain	2010	2011	2013	S	S	R	Su,A,W,Sp	No	250	25	g	B	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1577	Spain	NR	NR	2002	S	S	S	NR	No	54	10	g	SS	Custom detection	Pre/10g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1578	United Kingdom	NR	NR	2010	S	M	R	NR	Yes	2359	NR	g	SS	Other method	NR	8_Other method	CFU/g
1582	Greece	NR	NR	2008	S	M	M	NR	No	21	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
1588	United Kingdom	1988	1989	1991	S	D	F,M,R,S,D,LM,	Su,A,W,Sp	Yes	4172	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1590	Faroe Islands, Finland, Iceland, Norway and Sweden	1998	1999	2004	S	M,S	M	NR	No	106	NR	g	SS	Several	NR	NA	
1591	Iceland	1998	2001	2006	S	S	M	NR	No	82	25	g	SS	FDA	Pre/25g	NA	
1596	Portugal	1998	2000	2001	S	M,D,P	S,LM	Su,A,W,Sp,	No	415	25	g or mL	SS	Custom detection	Pre/25g	NA	
1600	Turkey	NR	NR	2011	S	D	R	NR	No	120	25	g	SS	FDA	Pre/25g	NA	
1614	Iceland	NR	NR	1991	S	S	M,R	NR	Yes	89	25	g	SS	Custom detection	Pre/25g	NA	
1615	Ireland	1988	1989	1992	S	D	F,Processing centers	Su,A,W,Sp	Yes	516	25	g or mL	SS	Several	Pre/25g or mL	NA	
1616	Ireland	NR	NR	1993	S	M,S,P,C	R	Su,A,W,Sp	No	513	25	g	SS	Several	Pre/25g	NA	
1624	Austria	NR	NR	2007	S	S	M,R	NR	No	261	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1635	Belgium	2010	2010	2012	S	P	M	Su,A,Sp	No	18	25	g	B	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
1638	United Kingdom	1989	1990	1991	S	P	Hospital	Su,A,W,Sp	No	33	25-35	g	SS	Other method	Pre/25-35g	NA	
1639	United Kingdom	1989	1990	1991	S	C	Hospital	Su,A,W,Sp	No	4405	30	g	SS	Other method	Pre/30g	NA	
1681	Czech Republic	NR	NR	2010	S	D	F	NR	No	44	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1690	Switzerland	1992	2000	2002	S	M,S,C	Border posts	Su,A,W,Sp	Yes	2162	10 or 25	g	SS,R	Custom detection	Pre/10 or 25g	6_Custom plate count	CFU/g
1698	Norway	1999	2001	2002	S	P	R	Su,A,W,Sp	No	690	NR	g	SS	Other method	NR	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1699	Finland	1996	1997	1999	S	S	R	Su,Sp	No	37	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1703	Denmark	NR	NR	1998	S	S	M	NR	No	542	25	g	B	Custom detection	Pre/25g	Several	CFU/g
1708	Turkey	2007	2008	2010	S	D	M,R	Su,A,W,Sp	No	280	25	g	SS	FDA	Pre/25g	NA	
1719	Bulgaria	NR	NR	2009	S	M	NR	NR	No	281	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1727	Ireland	1999	2000	2004	S	D	F	Su,A,W,Sp	No	36	25	mL	SS	FDA	Pre/25mL	NA	
1729	United Kingdom	NR	NR	1990	P	M	R	NR	No	102	25	g	SS	Custom detection	Pre/25g	NA	
1742	Hungary	NR	NR	1996	S	M,D,C	R,RCB,C	NR	No	291	25	g	SS	Custom detection	Pre/25g	NA	
1743	Hungary	2004	2004	2006	S	M,D,O	M	NR	Yes	2433	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1749	Portugal	2002	2003	2006	S	D	M	Su,A,W,Sp	No	66	25	g	SS	Custom detection	Pre/25g	NA	
1756	Poland	NR	NR	2005	S	M	R	NR	No	50	NR	g	SS	ISO 11290-1:1996	NR	NA	
1757	Poland	NR	NR	2004	S	D	NR	NR	No	117	NR	g	SS	Other method	NR	NA	
1758	Greece	2005	2010	2013	P	M,D,C	RCB,C	Su,A,W,Sp	No	270	25	g	SS	Several	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1759	Greece	2001	2004	2013	S	C	RCB	NR	No	206	25	g	SS	Custom detection	Pre/25g	NA	
1762	Croatia	2009	2010	2013	S	P,C	S	Su,A,W,Sp	No	100	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
1766	Croatia	1995	1999	2001	S	D	NR	NR	No	112	NR	g or mL	SS	Custom detection	NR	NA	
1768	Estonia	2008	2010	2013	S	M,S	M,R	NR	Yes	8429	25 & 10	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
1774	Serbia	NR	NR	2011	S	S	NR	NR	No	165	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1775	Poland	1997	2001	2004	S	M,S	M	NR	Yes	1862	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1781	Sweden	2010	2010	2012	S	M,S,D	R	Su,A,W,Sp	Yes	1590	25 & 10	g	O	Several	Pre/25g	Several	CFU/g
1782	Italy	1998	2000	2002	S	D,PO,	R,S	Su,A,W,Sp	No	75	NR	g	SS	Custom detection	NR	NA	
1788	Italy	1993	2004	2007	S	M,S,D,C,O	M,R	NR	Yes	3827	25	g	SS	FDA	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1789	United Kingdom	NR	NR	1994	P	M	M	NR	No	96	25	g	SS	FDA	Pre/25g	NA	
1792	France	NR	NR	2007	S	M	M	NR	No	9	10	g	SS	Custom detection	Pre/10g	6_Custom plate count	CFU/g
1798	Portugal	2002	2003	2006	S	D	M	Su,Sp	No	51	NR	g	B	Other method	NR	NA	
1805	United Kingdom	2004	2004	2006	S	D	M,R,C	Sp	Yes	3175	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
1806	United Kingdom	1987	1988	1991	P	M,D,P	R	W,Sp	Yes	57	10	g	SS	Several	Pre/25g	6_Custom plate count	CFU/g
1819	United Kingdom	2005	2006	2008	S	C	Hospitals, residential or care homes	Su,A,W,Sp	No	3249	NR	g	SS	Other method	NR	8_Other method	CFU/g
1820	United Kingdom	1998	1998	1999	S	D	F,R,S	W,Sp	Yes	126	NR	mL	SS	Other method	NR	8_Other method	CFU/g
1821	United Kingdom	2002	2002	2004	S	P	M,R	Su,A	Yes	2096	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
1822	United Kingdom	2004	2005	2008	S	D	R	A	Yes	4437	NR	g	SS	Other method	NR	8_Other method	CFU/g
1823	United Kingdom	2006	2007	2009	S	M,D,C	R	NR	Yes	6984	NR	g	SS	Other method	NR	8_Other method	CFU/g
1824	United Kingdom	2005	2005	2007	S	C	R	Su,A,W,Sp	Yes	2686	NR	g	SS	Other method	NR	8_Other method	CFU/g
1826	Germany	NR	NR	1997	P	D	S	NR,No	No	121	NR	g	SS	NA		Several	+/-
1827	Sweden	1989	1993	1995	S	D	S,D	NR	No	333	25	g	SS	Other method	Pre/25g	NA	
1830	Sweden	NR	NR	1996	S	S	M	NR	No	150	10 & 25	g	SS	Other method	Pre/25g	6_Custom plate count	CFU/g
1831	Spain	NR	NR	2000	S	M	M	NR	No	54	25	g	B,R	Custom detection	Pre/25g	NA	
1833	Spain	NR	NR	1995	S	D	LM	NR	No	11	25	g	SS	Other method	Pre/25g	NA	
1842	Finland	NR	NR	1998	S	S	R	NR	No	200	10	g	SS	Other method	Pre/10g	NA	
1844	United Kingdom	1991	1992	1994	S	M,D,C	R	Su,A,W,Sp	No	564	25	g	SS	Custom detection	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1845	Italy	NR	NR	1994	S	D	NR	NR	No	14	NR	g	SS	NA		6_Custom plate count	CFU/g
1853	Italy	1990	1991	1993	S	D	Ice cream shop	Su,A,W,Sp	No	396	25	g	SS	Other method	Pre/25g	NA	
1855	Italy	2003	2004	2005	S	D	M	A,W,Sp	No	1656	25	g	SS	Custom detection	Pre/25g	NA	
1862	Spain	1992	1993	1996	S	D	S	Su,A,W,Sp	No	101	10 & 25	g	SS	Several	Pre/25g	6_Custom plate count	CFU/g
1869	Spain	NR	NR	2011	S	M	M	NR	No	19	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1871	Italy	2008	2010	2011	S	D,P,C	C	Su,A,W,Sp	No	727	10	g	SS	ISO validated	Pre/10g	NA	
1872	Italy	2009	2012	2013	S	D,P,C	C	Su,A,W,Sp	No	395	10	g	SS	ISO validated	Pre/10g	NA	
1874	Italy	1987	1988	1990	S	D	M,R	Su,A,W,Sp	No	181	25	g or mL	SS	Custom detection	Pre/25g	NA	
1882	Turkey	2008	2008	2010	S	D	R,S	Su,Sp	No	101	25	g	SS	Custom detection	Pre/25g	NA	
1886	United Kingdom	1988	1988	1990	OR	D	NR	Su,A,W,Sp	Yes	49	10 or 25	g	SS	Other method	NR	6_Custom plate count	CFU/g
1887	United Kingdom	1989	1990	1991	S	M	R	Su	Yes	2324	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
1889	Poland	1999	2000	2003	S	S	M	Su,A,W,Sp	No	44	25	g	M	ISO 11290-1:1996	Pre/25g	NA	
1895	United Kingdom	2008	2009	2010	S	M,S,D,P,C	R	Su,A,W,Sp	Yes	5840	25	g	SS	Custom detection	Pre/25g	NA	
1897	United Kingdom	2000	2000	2009	S	C	C	Su,A,W,Sp	Yes	2351	25	g	SS	Other method	Pre/25g	NA	
1898	United Kingdom	NR	NR	2005	S	M,S,D,P,C	R	NR	Yes	13909	NR	g	SS	ISO 11290-1:1996	NR	1_ISO 11290-2:1998	CFU/g
1899	United Kingdom	2005	2006	2007	S	C	R,hospital	A,W,Sp	Yes	1538	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
1900	United Kingdom	2003	2005	2006	S	M,S,D,P,C	R	W,Sp	Yes	3168	25	g	SS	NA		6_Custom plate count	CFU/g
1903	Italy	NR	NR	2009	S	M,S,P	M,R	NR	No	200	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
1904	Italy	NR	NR	2012	S	M	M	NR	No	10	NR	g	SS	ISO 11290-1:1996	NR	1_ISO 11290-2:1998	CFU/g

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1906	United Kingdom	2000	2001	2004	S	M,D,P,C	M,R	Su,A,W,Sp	No	927	25	g	SS	Custom detection	Pre/25g	NA	
1908	Spain	NR	NR	2001	S	D	M	NR	No	24	NR	g	R	NA		8_Other method	CFU/g
1914	Finland	NR	NR	2003	I	S	M	NR	No	300	10	g	B	Other method	NR	NA	
1915	Italy	1989	1999	2000	S	D	NR	NR	No	494	NR	g	SS	Other method	NR	NA	
1916	Greece	NR	NR	2001	S	M	M	NR	No	16	25	g	SS	Custom detection	Pre/25g	NA	
1917	Germany	2009	2010	2012	S	M	R	Su,A,W,Sp	No	300	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
1922	France	NR	NR	2008	I	S	M,NR	NR	No	657	25	g	R	ISO validated	Pre/25g	6_Custom plate count	CFU/g
1923	France	2001	2005	2007	P	S	R	NR	Yes	538	25	g	SS	Several	Pre/25g	Several	CFU/g
1924	Finland	1996	1998	2001	S	S	M	NR	No	40	25	g	SS	Other method	Pre/25g	NA	
1925	Finland	1999	1999	2003	S	S	R,S,G,LM	Su,A,W	No	147	NR	g	SS	ISO 11290-1:1996	NR	1_ISO 11290-2:1998	CFU/g
1932	Spain	2005	2007	2009	S	D	R	NR	No	184	25	g	SS	NA		6_Custom plate count	CFU/g
1933	Serbia	2007	2007	2011	S	S	M	Su,A,Sp	No	120	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
1952	**United Kingdom**	**1989**	**1989**	**1991**	**S,I**	**M**	**R**	**Su,Sp**	**Yes**	**216**	**25**	**g**	**O**	**FDA**	**Pre/25g**	**5_FDA**	**CFU/g**
1953	United Kingdom, The Netherlands, Switzerland	NR	NR	1992	S	M,D	M	NR	No	100	40	g	SS	Custom detection	NR	NA	
1954	Italy	1992	1992	1993	S	D	LM	Su	Yes	62	NR	g	SS	Custom detection	NR	NA	
1955	Italy	NR	NR	1992	S	D	F	NR	No	176	NR	mL	SS	Custom detection	NR	NA	
1961	Italy	NR	NR	2008	I	D	R	NR	No	12	25	g	SS	Custom detection	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
1963	Italy	2004	2005	2011	S	S,C	R	Su,A,W	No	92	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
1975	Czech Republic	2000	2002	2004	S	M,D	M	NR	No	330	NR	g and mL	SS	ISO 11290-1:1996	NR	NA	
1980	Germany	2007	2007	2009	P	M	R	NR	No	42	10	g	SS	Several	NR	6_Custom plate count	CFU/g
1987	United Kingdom	1994	1994	1998	S	M,S,P	R	Su,A,Sp	Yes	3065	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
2003	Ireland	2007	2007	2009	S	D	M	Su,A,W,Sp	No	351	25	g	M	FDA	Pre/25g	NA	
2006	Ireland	NR	NR	2009	P	M,S,D,P,C	NR	NR	No	153	25	g or mL	SS	Several	Pre/25g or mL	NA	
2008	Denmark	NR	NR	2000	S	M	M	NR	No	55	NR	g	SS	Custom detection	NR	NA	
2012	Turkey	2005	2005	2006	S	DC	LM	W,Sp	No	122	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
2013	Turkey	2001	2002	2006	S	D,P	S,LM	NR	No	200	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
2016	Spain	1997	1998	1999	S	D	M	Su,Sp	No	18	25	g	SS	Custom detection	Pre/25g	NA	
2023	Austria	2012	2012	2012	S	M,P	R	W	No	113	25	g	SS	Custom detection	Pre/25g	NA	
2029	Italy	2000	2007	2011	S	C	University canteen	NR	No	229	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
2031	Turkey	NR	NR	2006	S	M	R	NR	No	100	25	g	SS	Custom detection	Pre/25g	NA	
2046	Greece	1992	1992	1998	S	D	M,S	Su,Sp	No	62	25	g	SS	Custom detection	Pre/25g	NA	
2052	Italy	2008	2010	2013	S	D	M	NR	No	114	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
2063	Portugal	1998	1999	2001	S	S	LM	Su,A,W,Sp	No	61	NR	g	SS	Custom detection	NR	NA	
2064	Spain	1996	1996	1998	S	D	S,RCB	Su,A,W,Sp	No	36	NR	g	SS	FDA	NR	NA	
2065	Spain	NR	NR	2010	S	M	R	Su,A,Sp	No	68	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
2067	Italy	NR	NR	2010	S	M,S,D,C	Household,RCB,C	NR	No	693	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
2070	Italy	2005	2006	2010	S	M	M	Su,A,W,Sp	No	140	25	g	SS	Custom detection	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
2072	Italy	NR	NR	2008	S	P	LM	NR	No	56	25	g	SS	Custom detection	Pre/25g	NA	
2076	Portugal	1995	1996	2005	S	D	F,M	NR	No	63	25	g	SS	Custom detection	Pre/25g	NA	
2078	Italy	NR	NR	1996	S	D	R,S	NR	No	164	25	g	SS	Custom detection	Pre/25g	NA	
2080	Slovakia	NR	NR	2012	P	S,D,C	NR	NR	No	23	NR	g	SS	Other method	NR	NA	
2085	Romania	2007	2008	2013	S	D	M	NR	No	40	25	g	M	Custom detection	Pre/25g	NA	
2097	Italy	2005	2006	2010	S	D	R	Su,A,Sp	No	2132	NR	g	SS	Other method	NR	7_MPN	MPN/g
2098	Italy	NR	NR	2012	S	M	M	NR	No	708	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	2_ISO 11290-2:1998/Amd 1:2004	CFU/g
2101	Spain	NR	NR	1994	S	D	M	NR	No	49	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
2107	Italy	NR	NR	2008	P	M,D	M,LM	NR	No	44	10	g	SS	Several	Pre/10g	NA	
2116	Belgium	NR	NR	1997	S	M	R,S	NR	No	45	25	g	SS	Other method	Pre/25g	NA	
2120	Portugal	NR	NR	1995	S	D	R	NR	No	32	25	g	SS	Several	Pre/25g	NA	
2123	Spain	2008	2009	2011	S	M,P	Hospital	Su,A,W,Sp	No	135	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	NA	
2124	Spain	2008	2009	2011	S	M,P,C	Hospital	Su,A,W,Sp	No	60	25	g	SS	NA		1_ISO 11290-2:1998	CFU/g
2129	Norway	1995	1996	2003	S	M	M,R	NR	No	140	25	g	SS	Other method	Pre/25g	NA	
2130	Norway	1991	1992	1995	S	S	M	NR	No	65	50	g	SS	Several	Pre/50g	6_Custom plate count	CFU/g
2132	Norway	NR	NR	1991	S	M,S,D	M,R,butcher's shops	NR	No	228	10	g	SS	Several	Pre/25g	NA	
2134	Sweden	2005	2005	2010	S	D	M	Sp	No	151	NR	g	SS	Other method	NR	6_Custom plate count	CFU/g
2136	Austria	NR	NR	2006	S	MD	S	NR	No	19	10	g	SS	ISO+PCR confirmation	Pre/10g	NA	
2137	Spain	NR	NR	1997	S	M	M,butcher's shop	NR	No	26	25	g	SS	Custom detection	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
2138	Germany	NR	NR	2000	S	D	M,R,S	Su,A	No	41	25	g	SS	Other method	Pre/25g	7_MPN	CFU/cm^2
2139	Germany	1999	1999	2001	S	D	F,M,R,S	Su,A,Sp	No	329	25	g	SS	Other method	Pre/25g	Several	CFU/cm^2
2145	United Kingdom	2003	2003	2007	S	M	R	A	Yes	2976	NR	g	SS	Other method	NR	NA	
2146	United Kingdom	2001	2001	2003	S	P	R,RCB,C	A	Yes	2807	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
2147	United Kingdom	2001	2001	2003	S	P	S,G	Sp	Yes	3677	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
2154	Croatia	NR	NR	2003	S	D	F	Su,Sp	No	38	NR	g	SS	Other method	NR	NA	
2157	Greece	NR	NR	2007	S	D	R	NR	No	12	25	g	SS	Other method	Pre/25g	6_Custom plate count	CFU/g
2159	Greece	NR	NR	1999	S	M	M	NR	No	64	25	g	SS	Custom detection	Pre/25g	NA	
2160	Greece	NR	NR	1998	S	M	M	NR	No	8	25	g	B	Custom detection	Pre/25g	NA	
2161	Greece	NR	NR	2011	S	D	M	NR	No	36	NR	g	R	ISO 11290-1:1996	NR	1_ISO 11290-2:1998	CFU/g
2162	Spain	NR	NR	1993	S	D	NR	NR	No	11	54	g	B	Custom detection	Pre/54g	NA	
2169	Portugal	2007	2008	2012	S	P	S	Su,A,W,Sp	No	151	25	g	SS	Custom detection	Pre/25g	NA	
2175	Italy	NR	NR	2013	S	D	R	NR	No	12	10	g	SS	ISO 11290-1:1996	Pre/10g	1_ISO 11290-2:1998	CFU/g
2176	Italy	NR	NR	2011	S	D	M	W	No	10	10	g	B	ISO 11290-1:1996	Pre/10g	NA	
2184	Austria	NR	NR	2010	S	D	F	NR	No	160	25 & 100	mL	SS	ISO 11290-1:1996	Pre in 25 or 100mL	1_ISO 11290-2:1998	CFU/mL
2191	Spain	NR	NR	2010	I	M,S,P	RCB	NR	No	36	25	g	SS	Custom detection	Pre/25g	NA	
2203	Ireland	NR	NR	1994	S	M	R	NR	No	220	25	g	SS	FDA	Pre/25g	NA	
2218	Turkey	2004	2004	2008	S	M,P,C	R	Su,Sp	No	100	25	g	SS	Custom detection	Pre/25g	NA	
2219	Turkey	2006	2007	2013	S	S	M,R	Su,A,W,Sp	No	100	25	g	SS	Custom detection	Pre/25g	NA	
2220	Turkey	NR	NR	2006	S	M	R,LM	NR	No	100	25	g	SS	FDA	Pre/25g	NA	

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
2224	Spain	1999	2000	2001	S	M,S,P,C	RCB	A,W	No	103	25	g	SS	FDA	Pre/25g	NA	
2225	Spain	NR	NR	2013	S	C	RCB	NR	No	781	25	g	B	ISO 11290-1:1996	Pre/25g	NA	
2226	Spain	2007	2008	2009	S	D	RCB	NR	No	265	25	g or mL	SS	ISO 11290-1:1996	Pre/25g or mL	NA	
2242	Austria	2003	2005	2006	S	S	R	Su,A,W,Sp	No	590	25	g	SS	Other method	Pre/25g	6_Custom plate count	CFU/g
2250	Turkey	2009	2009	2012	S	O	R,LM	Su,A,Sp	No	70	25	g	SS	Other method	Pre/25g	NA	
2261	Turkey	NR	NR	2012	P	D	R,S	NR	No	100	25	mL	SS	Several	Pre/25g	NA	
2264	Greece	1990	1996	1998	S	D	R	Su,W,Sp	No	167	25	g	SS	Custom detection	Pre/25g	7_MPN	CFU/g
2267	France	NR	NR	2005	S	M	M	NR	No	30	25	g	SS	Other method	Pre/25g	8_Other method	CFU/g
2277	Portugal	NR	NR	2006	S	S	R	NR	No	48	10	g	B	ISO 11290-1:1996	Pre/10g	7_MPN	Log CFU/g
2280	Serbia	2004	2005	2007	S	D,C	R	Su,A	No	137	25	g	SS	Custom detection	Pre/25g	NA	
2285	Croatia	NR	NR	2004	S	C	D,RCB,hotel	Su,A,W,Sp	No	283	NR	g	SS	ISO 11290-1:1996/Amd 1:2004	NR	NA	
2294	Belgium	2005	2007	2009	S	M,S,C	M	NR	No	1871	25	g	SS	ISO validated	Pre/25g	6_Custom plate count	CFU/g
2296	Belgium	1997	1998	1999	S	MC	S	Su,A,W,Sp	No	5945	25	g	M	Custom detection	Pre/25g	NA	
2298	Iceland	1991	1997	1998	S	S	M	NR	No	623	25	g	SS	Custom detection	Pre/25g	NA	
2299	Belgium	2001	2002	2004	S	M,S,D,C	S	Su,A,W	Yes	225	25	g	SS	ISO+PCR confirmation	Pre/25g	NA	
2314	Spain	1997	1999	2004	S	M,S,D,P	F,M,R	Su,A,W,Sp	No	3232	25	g	SS	Several	Pre/25g	NA	
2318	Denmark	1995	1999	2001	S	S	M	A,W,Sp	No	936	25	g	SS	Custom detection	Pre/25g	NA	
2320	Greece	NR	NR	2011	S	M	S,D	NR	No	200	25	g	R	Custom detection	Pre/25g	NA	
2327	Austria	2003	2004	2007	S	M,D,P,C,O	R	Su,A,W,Sp	No	709	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
2331	Ireland	NR	NR	1998	S	M,S,D,P,	R	Su,A,W,Sp	No	126	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g

Refid[a]	Country	Start year	End year	Publication year	Study aim[b]	Food categories[c]	Sampling location[d]	Sampling season[e]	Official control	Sampling size	Sample portion (value)	Sample portion (units)	Sampling type[f]	Detection method[g]	Level of detection[h]	Enumeration method	Enumeration units
2341	Greece	NR	NR	2000	S	M	S,D	NR	No	101	25	g	SS	ISO 11290-1:1996	Pre/25g	NA	
2344	United Kingdom	NR	NR	2003	S	M,D,C	R,RCB,C	NR	Yes	2037	NR	g	SS	Other method	NR	8_Other method	CFU/g
2346	United Kingdom	NR	NR	1996	S	C	S,RCB,Petrol stations	NR	No	725	25	g	SS	Custom detection	Pre/25g	6_Custom plate count	CFU/g
2351	Denmark	2002	2003	2006	S	S	M	,A,W,Sp	No	148	25	g	SS	Custom detection	Pre/25g	NA	
2368	Turkey	2001	2002	2005	S	M	S,RCB,Butcher-shops	Su,A,W,Sp	No	59	25	g	SS	FDA	Pre/25g	NA	
2387	Greece	1994	1998	1999	S	M,S,D,P,C	R	NR	Yes	16898	25	g	SS	FDA	Pre/25g	5_FDA	CFU/g
2388	Finland	1995	1997	1998	S	M,S,D	R	NR	No	261	25	g	SS	ISO 11290-1:1996	Pre/25g	1_ISO 11290-2:1998	CFU/g
2389	Greece	NR	NR	2014	S	S	R	NR	No	132	25	g	SS	ISO 11290-1:1996/Amd 1:2004	Pre/25g	2_ISO 11290-2:1998/Amd 1:2004	CFU/g

(a): Full references listed in Appendix E.
(b): S: survey, P: performance of analytical methods, OR: outbreak/recall, I: intervention, O: other.
(c): M: meat, S: seafood, D: dairy, C: composite, O: other.
(d): F: farm, M: manufacturer, R: retail, S: supermarket, G: grocery store, D: delicatessen shop, LM: local (street) market, RCB: restaurant/cafeteria/bar, C: catering, SV: street vendor, O: other, NR: not reported.
(e): Su: summer, A: autumn, W: winter, Sp: spring.
(f): SS: single sample, B: batch.
(g): NA: Not applicable as *L. monocytogenes* were only enumerated.
(h): NR: Not reported, Pre/25g: presence of *L. monocytogenes* in 25 g of food.

Table D. 2: List of eligible records providing information on read-to-eat (RTE) meat products. Description of the products characteristics.

RefID[(a)]	Sub-categories[(b)]	Meat Species[(c)]
108	Cm,Cs,F	Pk,Pl,B,S
130	O (Not specified)	NR
255	Cm,F	Pk,NR
411	O (RTE meat-based products)	NR
493	O (Wet cured)	B
571	O (Not specified)	NR
581	Cm,Cs	NR
665	Cm	Pk,Pl,B
667	F	NR
689	R,Cm	Pk
789	Cs	Pk
859	F	Pk
1182	Cm	NR
1187	F	NR
1191	F,DC	NR
1206	Cm,Cs,F	NR
1208	Cm,Cs,F	NR
1223	Cm	NR
1281	O (Cold-smoked)	Pk
1282	Cm,DC,O (Cold-smoked)	Pk,Pl,B
1318	Cs,F	NR
1326	Cm,Cs,P,F,DC,O (Frozen chicken croquets)	Pk,Pl,O (duck)
1344	CsF,DC	NR
1381	F	NR
1415	F	Pk
1434	O (RTE meat)	NR
1443	F	NR
1452	P	NR
1481	Cm,P	NR
1505	R,F	NR
1538	Cm,P	Pk,Pl
1539	F	Pk
1542	Cm,Cs,F	NR
1556	F	Pk
1562	P	NR
1563	Cm	NR
1578	F,DC	NR
1582	F	Pk,B
1590	Cm,DC	NR
1596	R,Cm,P,F,DC	NR
1616	R,Cm,Cs,F,O (Not specified)	NR
1690	Cm,F,DC	NR
1719	F,DC	NR
1729	Cm	Pl
1742	Cm	NR
1743	F	NR
1756	Cm	Pl
1758	Cs	NR

RefID[(a)]	Sub-categories[(b)]	Meat Species[(c)]
1768	Cm,Cs,F,O (Mixed RTE meat products)	NR
1775	Cm,Cs	NR
1781	Cm,Cs	NR
1788	Cm,Cs,F	NR
1789	Cm	Pl
1792	F	Pk
1806	Cm,P,F	Pk,B
1823	Cm	NR
1831	F,DC	Pk
1844	Cm,P	NR
1869	F	Pk
1887	P	NR
1895	Cm,Cs,P,F	NR
1898	Cm,P,F	Pk,Pl,B
1900	Cm,P	NR
1903	Cm,Cs,F	NR
1904	F	Pk
1906	Cm,F,DC	NR
1916	F	PkB
1917	R,Cm,Cs	Pl
1952	P	NR
1953	DC	NR
1975	Cm,F	NR
1980	O (RTE meat products)	NR
1987	P	Pl,O (red meat)
2006	Cm	Pk,Pl,B
2008	Cm	Pl
2023	Cm	Pl
2031	F	O (camel)
2065	Cm	Pk
2067	Cm	Pk
2070	F	NR
2098	DC	Pk
2107	F	NR
2116	Cm	Pl
2123	Cm	Pk
2124	R,Cm	NR
2129	Cm	Pl
2132	Cm,F	NR
2136	P	NR
2137	F	PkB
2145	Cm	NR
2159	Cm,Cs,F	Pk,Pl
2160	F,DC	Pk
2191	Cm	Pk,Pl,B
2203	Cm,P,F	Pk,Pl,B
2218	Cm	B
2220	F	B
2224	O (Not specified)	Pk,Pl,B
2267	F	Pk
2294	Cm	NR

RefID[(a)]	Sub-categories[(b)]	Meat Species[(c)]
2296	Cm,P,F,DC	Pk,Pl,B,O (horse)
2299	Cm,P	NR
2314	Cm,DC	Pk,Pl
2320	Cm	Pk,Pl
2327	Cs,P,F,DC	NR
2331	Cm	Pk,Pl
2341	Cm	Pk
2344	Cm,P	NR
2368	Cm	Pl,O (red meat)
2387	Cm,O (Preserved not heat treated)	NR
2388	Cm,Cs,P	NR

NR: not reported; RTE: ready-to-eat.
(a): Full references listed in Appendix E.
(b): Cm: cooked meat, Cs: cooked sausages, P: pâté, F: fermented meat, DC: dry-cured meat, O: other (name of food product indicated between brackets).
(c): Pk: pork, Pl: poultry, B: beef, S: sheep.

Table D. 3: List of eligible records providing information on read-to-eat (RTE) seafood products. Description of the products characteristics.

Refid[(a)]	Sub-categories[(b)]	Seafood Species[(c)]
153	O (Not specified)	NR
255	S	S
334	Sh	Mu
571	O (Not specified)	NR
663	CS	S,Ha
859	S	S
867	S	S
963	O (Cooked)	Ce,NR
1182	S	S
1231	CS	Tr
1257	CS	S
1258	S	S
1261	S,C/S	S
1323	Sh	Shelfish and crustaceans
1326	S,O (Frozen pies)	S,Pr/Shr,He,Ce,A
1393	CS	S
1412	CS	S
1413	CS	S
1434	S	S
1442	CS	S
1443	S	S
1451	S	S,C,NR
1452	CS	S,Tr
1491	CS	S
1526	CS,HS	S,Hd,C,M,He,Tr,Tu,marlin,wahoo
1530	O (Several RTE products)	Several
1538	CS	S,Tr

Refid[a]	Sub-categories[b]	Seafood Species[c]
1542	S,O (Marinated)	M,NR
1571	S,O (Surimi)	S,NR
1577	CS	S,Tr
1590	O (Cooked)	Pr/Shr
1591	Sh	Pr/Shr
1614	S,C/S,Sh,O (Cooked)	S,Hd,Pr/Shr,Tr, He
1616	S,O (Not specified)	S,NR
1624	S	S,M,Tr,Ha,pollack
1690	CS,HS,O (Several RTE products)	NR
1699	CS,HS	S,Tr
1703	CS,HS,C/S,O (Cooked)	S,Pr/Shr,Ha,He,Ca,NR
1768	CS,HS,C/S,O (Heat treated, dried)	Ca,NR
1774	S,O (Panned fish, half-cans)	NR
1775	S,C/S	NR
1781	CS,HS,S,C/S	S,He,M,Tr
1788	S	S
1830	CS,HS,C/S	S,M,Tr,He,Wf
1842	CS,HS,C/S	S,Tr,Wf
1889	CS	S
1895	S,Sh	NR
1898	Sh	NR
1900	O (Pâté)	NR
1903	S,C/S	S,C,He,Tr
1914	O (Cooked)	Lamprey
1922	CS	S
1923	S,C/S	S,He,Tr
1924	CS,HS,C/S	Roe,NR
1925	O (Roe)	Tr,Wf,vendace, burbot
1933	CS	Tr
1963	CS	S,swordfish
1987	O (Pâté)	NR
2006	S	S
2063	Sh	Molluscan shelfish
2067	S	S
2080	S	S
2130	S	S
2132	S	S
2191	O (Cooked)	S,C,hake
2219	C/S,O (Raw)	Mu,A
2224	O (Not specified)	NR
2242	CS	S
2277	CS	S
2294	S	NR
2298	O (Cooked)	Pr/Shr
2299	S	S,M,Tr,Ha,sprat
2314	S	S
2318	CS	S
2331	S	NR
2351	CS,C/S	S,Tr,Ha,Tu
2387	O (Preserved not heat treated)	NR
2388	S,C/S	Tr

Refid[a]	Sub-categories[b]	Seafood Species[c]
2389	S,C/S,O (Cooked)	Ce,surimi crab sticks,NR

NR: Not reported; RTE: ready-to-eat.
(a): Full references listed in Appendix E.
(b): S: smoked, CS: cold smoked, HS: hot smoked, C/S: cured/salted, Sh: shelfish, O: other
(c): A: anchovies, S: salmon, C: cod, Ca: caviar, Ce: cephalopods, Ha: halibut, He: herring, M: mackerel, Pr/Shr: prawns/shrimps, Tr: trout, Wf: whitefish

Table D. 4: List of eligible records providing information on read-to-eat (RTE) dairy products. Description of the products characteristics.

RefID[a]	Animal species[b]	Type of milk[c]
56	C	R
153	NR	NR
255	NR	NR
268	C,S,G	R
382	NR	NR
484	C	R
494	NR	R
571	NR	NR
830	C	R
859	S	R
876	S	R
910	C,S	NR
964	S	P
1078	NR	NR
1185	C	R,P
1187	S	NR
1190	NR	P
1195	C,S,G	R
1196	C,S,G	R,P
1206	NR	NR
1207	C,S,G	R,P
1220	S	R
1221	NR	NR
1223	NR	NR
1225	S,G	P
1229	S	R
1235	NR	P
1252	C	R
1291	NR	R
1311	O (water bufalo)	R,P
1316	NR	R,P
1320	NR	P
1323	NR	NR
1326	NR	NR
1344	NR	P
1379	NR	NR
1380	NR	NR
1397	NR	R,P
1409	C	NR
1423	NR	R
1424	NR	R,NR
1434	NR	NR
1443	NR	NR
1486	NR	NR
1505	NR	P,NR
1519	NR	P,
1522	NR	R

RefID[a]	Animal species[b]	Type of milk[c]
1542	C,NR	P
1544	NR	R,P
1551	NR	R
1552	NR	R
1554	S	R
1588	C,S,G	R,P
1596	C,S,G	R,NR
1600	NR	R
1615	NR	R,P
1681	G	P
1708	NR	NR
1727	C	R,P
1742	NR	NR
1743	NR	R,P
1749	NR	R
1757	NR	NR
1758	NR	NR
1766	NR	NR
1781	NR	NR
1782	NR	NR
1788	C	NR
1798	S	R
1805	NR	NR
1806	C,S,G	R,P
1820	S,G	R
1822	C,S,G,O (water bufalo)	R,T,P
1823	NR	NR
1826	NR	NR
1827	NR	R,T,P
1833	C,G	R
1844	NR	NR
1845	NR	NR
1853	NR	NR
1855	NR	NR
1862	C,S,G	R,P
1871	NR	NR
1872	NR	NR
1874	NR	R,P
1882	NR	NR
1886	G	R
1895	NR	NR
1898	NR	NR
1900	NR	NR
1906	NR	R,P
1908	C	R
1915	NR	NR

RefID[(a)]	Animal species[(b)]	Type of milk[(c)]
1932	C	R,P
1953	NR	R
1954	C	P
1955	C	R
1961	S	R
1975	NR	NR
2003	NR	NR
2006	NR	NR
2012	NR	NR
2013	NR	NR
2016	G	NR
2046	NR	NR
2052	C,S,G	NR
2064	G	R
2067	NR	NR
2076	S	R
2078	NR	NR
2080	S	R,P
2085	NR	NR
2097	NR	NR
2101	C	R,P
2107	NR	R
2120	NR	NR

RefID[(a)]	Animal species[(b)]	Type of milk[(c)]
2132	NR	NR
2134	C,S,G	R,P
2136	NR	NR
2138	NR	NR
2139	C,S,G	R,P
2154	S	R
2157	S	P
2161	S	R,P
2162	S	R
2175	C,S	R,P
2176	S	R
2184	G,	R
2226	C	NR
2261	NR	P,NR
2264	NR	NR
2280	NR	NR
2299	NR	R,P
2314	C,S	R
2327	S,O (NR)	NR
2331	NR	NR
2344	NR	NR
2387	NR	NR
2388	NR	NR

NR: not reported.

(a): Full references listed in Appendix E.

(b): M: milk, SCh: soft/semi soft cheese, HCh: hard/firm cheese, FCh: fresh cheese, Ch_ns: cheese (type not specified), Ch_s: cheese (type specified), IC: ice cream, B: butter, C: cream, Y: yoghurt, O: other.

(c): C: cow, S: sheep, G: goat, O: other, NR: not reported.

(d): R: raw, T: thermised, P: pasteurized.

Table D. 5: List of eligible records providing information on produce. Description of the products characteristics.

Refid[(a)]	Sub-categories[(b)]	Fruits species	Leafy greens species	Other vegetables species
130	OV	-	-	Potato
142	LV,OV	-	lettuce, chicory, spinach	bulb vegetables (garlic), root vegetables (carrot), fruit vegetables (aubergine, tomato, marrow, pumpkin), flower vegetables (cauliflower), stem vegetables (fennel, celery), seed vegetables (sesame)
153	LV	-	Not specifyed	-
388	LV,OV	-	Rocket	Cucumber
533	LV,F,OV	NR	Not provided	Not provided
571	O (not specified)	-	-	-
600	LV	-	NR	-
764	LV,OV	-	lettuce, chicory	carrots, tomatoes, etc.
793	LV	-	lettuce	-
873	LV,F,OV	Melon (piel de sapo)	Mixed salad	Rocket
1113	O (mix of vegetables)	-	lettuce, endive, iceberg lettuce and radicchio rosso heads, rucola and baby greens	Red pepper, cucumber
1172	LV,F,OV,S	Apple, peach, orange, mango and pineapple	Endive, lettuce, spinach, arugula and mixed salads	Soybean and alfalfa sprouts, carrot, cron salad,
1240	LV,S	-	watercress, chard, spinach, curly, endive, carrot, mixed salads	-
1244	LV,F,OV	NR	chopped lettuce, radicchio, etc	julien carrots, sliced fennel, etc.
1261	LV,OV	-	NR	NR
1333	LV,OV	-	NR	carrot, corn
1335	LV	-	baby leafs (arugula, lettuce, spinach, endive chicory, radicchio	-
1405	LV	-	Broad-leaved endive, rocket	-
1418	LV	-	endive, curly endive, rucola, red chicory, valerian, white and red lettuce	-
1441	LV,OV	-	NR	carrot
1476	O (salads, type not specifyed)	-	-	-
1505	O (not specified)	-	-	-
1516	LV,F,OV	Pineapple, melon, grapes, apples,	several	bean sprouts

Refid[a]	Sub-categories[b]	Fruits species	Leafy greens species	Other vegetables species
		peaches, and plums		
1535	LV,OV		lettuce, red cabbage	carrot
1542	LV,F	NR	NR	-
1596	LV,OV	watermelon	lettuce	cucumber, tomato, carrots
1616	O (Salads and salad vegetables)	-	-	-
1635	LV	-	radicchio, sugar loaf, curled endive, butterhead lettuce, parsley, chive	-
1638	LV,OV	-	Iceberg lettuce, mustard, cress	Cucumber, tomato
1698	LV,F,O (mushroms)	Strawberries	Pre-cut salad, growing herbs, parsley/dill	Champignons, chantarelle, oyster fungus
1762	LV,OV	-	Iceberg lettuces, rocket, lamb's lettuce, chicoty, cabbage and mixed leafy greens	Root vegetables
1782	LV,OV	-	aromatic herbs	salad, carrot
1806	O (mixed salads)	-	NR	Mushrooms
1821	F,OV	NR	-	Sprouts
1871	LV,OV	-	e.g. fennel, lettuce, radicchio	carrot
1872	LV,OV	-	fennel, lettuce	carrot
1895	LV	-	NR	-
1898	LV,F,OV	-	NR	-
1900	FO (vegetarian pâté)	-	-	-
1903	LV,OV	-	NR	-
1906	LV,OV	-	courgette, broccoli, aubergine, green and red peppers, peas	-
1987	O (not specified)	-	-	-
2006	LV	-	NR	-
2013	OV	-	-	parsley
2023	LV	-	NR	-
2072	LV,OV	-	Different types of lettuce, rocket, spinach	Carrot
2123	LV	-	lettuce	-
2124	LV,OV	-	lettuce	tomato
2146	LV	-	Wide variety (e.g. lettuce, cabbage)	Wide variety (e.g. tomato, carrot, cucumber, onion)
2147	LV	-	lettuce, watercress, spinach, etc.	grated tomato, peppers, mushrooms, etc.
2169	LV	-	Romaine lettuce, psinach, mixed salads	-
2191	OV	-	-	broccoli, courgette, potato, carrot
2218	LV,OV	-	lettuce, parsley	tomatoes, cucumber, green pepers
2224	LV	-	lettuce and spinach	-
2314	OV	-	-	-
2327	LV,F,OV,O (salads, spices and sprouts,		NR	-

Refid[a]	Sub-categories[b]	Fruits species	Leafy greens species	Other vegetables species
	dried fruits)			
2331	O (salads/coleslaw)	-	-	-
2387	OV	-	-	Sprouts and sliced vegetables

NR: Not reported.
(a): Full references listed in Appendix E.
(b): LV: leafy vegetables, F: fruits, OV: other vegetables, S: sprouts, O: other.

Table D. 6: List of eligible records providing information on composite and other types of food products. Description of the products characteristics.

RefID[a]	Product description[b]
126	C: RTE sandwiches
130	O: Egg products
137	C: Hotdog/hamburger
381	C: Salads
382	C: Cooked meals, sandwiches, cakes; O: Frozen foods, tofu spreads
533	C: Composite refrigerated products, sandwiches, salads
534	C: Composed meals; O: Meal components
571	O: Sub-category not specified
1030	C: Mayonnaise based salad, Ezme (tomato condiment), Fried spiced liver, Stuffed mussels
1078	C: Dessert
1206	C: Sandwiches and various RTE packaged salads (tzatziki, eggplant-salad, gardener's salad and Russian salad)
1228	C: Sushi
1244	C: RTE fully cooked food and multi-ingredient preparations
1274	C: Salads
1323	C: Gastronomy products; O: Eggs, Egg-containing poducts (pasta)
1326	C: Frozen canelloni and lasagna, refrigerated potato omelet, Spanish sweet custard, Spanish custard cream,
1332	C: meals
1346	C: Chinese food preparations
1348	C: Meals
1406	O: Different categories
1407	C: Cooked chilled food
1426	C: Foods intended for consumption without cooking and cooked foods intended to receive further cooking prior to consumption
1443	C: Pastries, mayonnaise-based deli salad
1450	C: Fish, salad, egg, cold meat and mayonnaise dishes
1470	O: Wide variety of foods
1476	O: RTE foods
1504	C: Pastries
1542	C: Delicatessen foods
1616	C: Prepared meals
1639	C: Precooked chilled foods
1690	C: Meat meals
1742	C: Pastry, buffet meals
1743	O: Several products
1758	C: Pastries, desserts, sandwiches
1759	C: sandwiches and bakery products and desserts

RefID[(a)]	Product description[(b)]
1762	C: Delicatessen salads
1782	C: Salads (with sauce, with seafood, with vegetables), pesto, pre-cooked vegetables (potato, corn, beetroot)
1788	C: Several RTE products
1819	C: Sandwiches
1823	C: Sandwiches, confectionery; O: Probiotic drinks
1824	C: prepackaged mixed vegetable salads (with meat and seafood)
1844	C: Cooked chill meals, prepared vegetables, coleslaw, rice, misc
1871	C: meals and multi ingredients preparations
1872	C: meals and multi-ingredient preparations
1895	C: Pasta- and rice-based salads, sandwiches, sushi
1897	C: Meals
1898	C: Meat pies, cakes, rice, pasta, pizza, sandwiches
1899	C: sandwiches
1900	C: cream cakes, sandwiches, kebab, pastry (meat and vegetarian), sausage rolls
1906	C: Pastry
1963	C: Seafood salad
2006	C: Wide variety of meals, desserts and sandwiches
2012	C: Baked potato
2029	C: wide variety
2067	C: Ready salads and sandwiches
2080	C: paris salad
2124	C: salads
2218	C: several meals
2224	C: omelette
2225	C: meals
2250	O: bulgur ball
2280	C: Toppings for fast food and meat meals
2285	C: Cakes and pastry
2294	C: mayonnaise-based deli-salads
2296	C: salads, meals and sauces
2299	C: salads
2327	C: Sandwiches; O: Meat/cheese spreads
2344	C: Gravy/stock, cooked mince, cooked meat meals, sandwiches; O: Cooked rice
2346	C: Sandwiches
2387	C: Ready prepared dishes; O: Mayonnaise

RTE: ready-to-eat.
(a): Full references listed in Appendix E.
(b): C: composite food/s, O: other foods.

Table D. 7: Information provided in the eligible records in relation to potential risk factors associated with the production environment

RefID[(a)]	HACCP	Food handlers education	C+D programme	FCS testing	FCS results	NFCS testing	NFCS results	Food handler's testing	Food handler's results
108	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
137	NC	NC	NC	NC		NC	-	Present	Lm-
411	Present	NC	Present	Present	Lm+	NC	-	NC	-
534	NC	NC	NC	Present	Lm-	Present	Lm-	NC	-
571	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
667	NC	NC	NC	Present	Lm+	Present	Lm-	NC	-
1196	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1231	NC	NC	Present	Present	Lm+	Present	Lm+	Present	Lm+
1244	NC	NC	NC	Present	LmNT	NC	-	Present	LmNT
1348	Present	Present	Present	NC		NC	-	NC	-
1407	NC	NC	NC	Present	Lm+	NC	-	Present	Lm-
1418	Present	NC	NC	NC		NC	-	NC	-
1442	NC	NC	NC	Present	Lm+	NC	-	NC	-
1451	Present	Present	Present	NC		NC	-	NC	-
1481	Present	Present	NC	NC		NC	-	NC	-
1519	NC	NC	NC	Present	Lm+	Present	Lm+	Present	LmNT
1582	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1590	NC	NC	NC	Present	Lm+	Present	Lm+	Present	Lm+
1591	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1635	Present	NC	NC	Present	Lm-	NC	-	NC	-
1638	Present	NC	NC	NC		NC	-	NC	-
1699	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1727	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1789	NC	NC	NC	Present	Lm+	NC	-	NC	-
1792	NC	NC	NC	Present	Lm+	Present	Lm-	NC	-
1798	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1805	Present	Present	NC	NC		NC	-	NC	-
1869	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1904	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1924	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
1933	NC	NC	NC	Present	Lm+	NC	-	Present	Lm+
2052	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-

2123	NC	Present	NC	Present	LMNT	Present	LMNT	NC	-
2124	NC	Present	NC	Present	LMNT	Present	LMNT	NC	-
2130	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
2159	NC	NC	NC	Present	Lm+	Present	Lm-	NC	-
2267	NC	NC	NC	Present	Lm+	NC	-	NC	-
2318	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-
2351	NC	NC	NC	Present	Lm+	Present	Lm+	NC	-

C+D: cleaning and disinfection; FCS: food contact surfaces; HACCP: Hazard Analysis and Critical Control Point; Lm+: *L. monocytogenes* detected; Lm-: *Lm* not detected, LmNT: *Lm* not tested; NC: not considered; NFCS: non-food contact surfaces.

(a): Full references listed in Appendix E.

Table D. 8: Information provided in the eligible records in relation to potential risk factors associated with the product characteristics

RefID[(a)]	Processing[(b)]	Exposure to contamination[(c)]	AMA/ AMP[(d)]	Post-lethal treatment application	pH/a_w data	Smoking[(e)]	Packaging type[(f)]	Packaging site[(g)]	Shelf-life[(h)]	Retail storage temperature (ºC)[(i)]
56	R	Yes (Pt)	No	No	Yes	na	NR	NPk	NR	4 (D)
108	H/C,Cu,F	D	NR	NR	No	NR	V,N	NR	NR	NR
126	R,F	Yes (A)	No	No	No	na	N	NPk	NR	NR
130	H/C	Yes (A)	NR	No	No	NR	No	NPk	NR	NR
137	R,H/C	Yes (A)	NR	No	No	na	No	NPk	NR	NR
142	R,MP	Yes (Pk)	NR	NR	No	na	NR	M,NPk	W	NR
153	R,F	D	NR	NR	No	NR	NR	NR	NR	NR
255	H/C,Cu,F	D	NR	NR	No	S,NR	NR	NR	NR	NR
268	R	Yes (Pt)	No	No	No	na	NR	NR	NR	NR
334	H/C	D	NR	NR	No	NS	NR	NR	NR	NR
381	R,H/C	Yes (A,Pt)	NR	NR	No	na	NR	NR	NR	NR
382	R,H/CF	D	NR	NR	No	na	NR	NR	NR	NR
388	R	D	No	No	No	na	NR	NR	NR	NR
411	R,H/C,Cu,F	D	NR	NR	No	NR	NR	NR	NR	NR
484	R	Yes (Pt)	No	No	No	na	No	NR	NR	NR
493	S/D	D	NR	No	Yes	S	NR	NR	NR	NR
494	FS/D	D	NR	No	No	na	NR	NR	NR	NR
533	R,H/C,O (NR)	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
534	R,H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
571	O (NR)	D	NR	NR	No	NR	NR	NR	Expired	NR
581	H/C,Cu,F	Yes (C/S)	NR	NR	No	NR	NR	NR	W	NR
600	R	Yes (C/S,Pt)	NR	NR	No	na	Type NR	M	NR	NR
663	CS	Yes (Pk,C/S)	NR	NR	Yes	S	NR	M	NR	NR
665	H/C	Yes (Pk,C/S)	NR	NR	No	NR	V	M	W	4 (M)
667	F	No	NR	NR	Yes	NS	No	NPk	W	NR
689	R,H/C	Yes (Pk)	NR	NR	Yes	S	O	M	W	2 (M)
764	R	Yes (Pt)	NR	NR	No	na	No	NPk	NR	5-6 (P)
789	H/C	No	No	No	Yes	NS	MAP,V,No	M	NR	4 (M)
793	R	Yes (Pk,C/S,Pt)	NR	NR	No	na	NR,No	M,NPk	NR	NR
830	R	Yes (Pt)	No	No	No	na	No	NPk	NR	2.5-4 (D)
859	R,H/C,F	D	NR	NR	No	NS	NR	NR	NR	NR
867	S/D	Yes (NR)	NR	NR	No	S	NR	NR	NR	NR
873	R	Yes (Pk,C/S,A)	NR	NR	No	na	NR	NR	W	4-5 (P)
876	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
910	F,S/D	Yes (Pk)	NR	NR	Yes	na	NR	NR	NR	NR
963	H/C	Yes (Pt)	NR	No	No	NS	No	NPk	NR	NR
964	F	D	NR	No	No	na	No	NPk	NR	NR
1030	R,H/C,M	Yes (Pk,Pt)	NR	NR	No	na	NR	NR	NR	NR
1078	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1113	R	Yes (Pk,C/S)	NR	No	No	na	NR	M	NR	NR
1172	R	Yes (Pk,C/S,A)	NR	No	No	na	NR	M	W	NR
1182	H/C,S/D	Yes (Pk,C/S)	NR	NR	No	S	V	M,S	NR	NR
1185	R,H/C	Yes (Pt)	No	NR	No	na	NR,No	NR	NR	NR
1187	F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
1190	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1191	F,S/D	Yes (Pk,C/S)	NR	NR	No	NR	V	NR	NR	NR
1195	R,F	No	NR	NR	Yes	na	NR	NR	W	NR
1196	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1206	R,H/C,F,S/D	Yes (Pk,C/S,A)	NR	NR	No	NR	NR	NR	NR	NR
1207	F	Yes (Pk,C/S)	NR	NR	Yes	na	MAP,V,O	M,S	W	NR
1208	H/CF	D	NR	NR	No	NR	MAP,V	NR	W	NR
1220	F	D	NR	NR	Yes	na	V	M	W	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
1221	F,S/D	D	NR	No	No	na	NR	NR	NR	NR
1223	H/CF	D	Yes (FS	No	No	NR	NR	NR	NR	NR
1225	F,S/D	Yes (Pk)	No	No	No	na	MAP,N	NR	NR	NR
1228	R,H/C	Yes (Pk,C/S,A)	Yes (FS)	NR	No	na	NR	NR	NR	NR
1229	R,F	Yes (Pt)	NR	NR	No	na	NR	NR	NR	NR
1231[j]	**S/D**	**D**	**NR**	**NR**	**No**	**S**	**NR**	**NR**	**NR**	**NR**
1235	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1240	R	Yes (Pk,C/S)	NR	No	No	na	NR	M	W	NR
1244	R,H/C	Yes (A,Pt)	NR	NR	No	na	NR	NR	NR	NR
1252	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1257	S/D	Yes (Pk)	NR	No	No	S	NR	NR	W	4,8 (S)
1258	S/D	Yes (Pk)	NR	NR	No	S	V	M	NR	NR
1261	R,M,S/D	Yes (Pk,C/S)	NR	NR	No	S	NR	M	NR	NR
1274	R,H/C	Yes (C/Sl,A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1281	S/D	Yes (Pk)	NR	NR	No	S(N)	V	M	O	NR
1282	H/C,Cu,F,S/D	Yes (Pk,C/S)	NR	NR	No	S	V	M	O	NR
1291	R	Yes (Pt)	No	No	No	na	No	NPk	W	NR
1311	R,F,S/D	Yes (Pt)	NR	NR	No	na	NR	NR	NR	NR
1316	R,F,S/D	Yes (Pt)	NR	NR	No	na	NR,No	NPkNR	NR	NR
1318	H/C,F	Yes (Pk,C/S)	NR	NR	Yes	S	V,No	NR	NR	NR
1320	H/C	D	NR	NR	No	na	NR	NPk	NR	NR
1323	R,H/C,F,S/D	Yes (Pk,C/S,A,Pt)	NR	NR	No	NS	NR	NR	NR	NR
1326	H/C,Cu,F,M,S/D	Yes (NR)	NR	NR	No	S	NR	NR	NR	NR
1332	R,H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1333	R	Yes (Pk,C/S,A)	NR	NR	No	na	NR	M	W	NR
1335	R	Yes (Pk,C/S)	NR	No	No	na	NR	M	NR	NR
1344	R,H/C,Cu,F,S/D	D	NR	NR	No	NR	NR	NR	NR	NR
1346	H/C	Yes (Pt)	NR	NR	No	na	No	NPk	NR	NR
1348	R,H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1379	F,S/D	D	NR	NR	No	na	NR	M,NR	NR	NR
1380	F	D	NR	NR	No	na	NR	NR	NR	NR
1381	F	D	NR	NR	No	NR	NR	NR	NR	NR

RefID[(a)]	Processing[(b)]	Exposure to contamination[(c)]	AMA/ AMP[(d)]	Post-lethal treatment application	pH/a_w data	Smoking[(e)]	Packaging type[(f)]	Packaging site[(g)]	Shelf-life[(h)]	Retail storage temperature (ºC)[(i)]
1393	S/D	Yes (Pk,C/S)	NR	NR	Yes	S	V	M	W	2,10 (S)
1397	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1405	R	Yes (Pk,C/S)	NR	No	No	na	NR	M	W	NR
1406	O (NR,several)	D	NR	NR	No	na	NR	NR	NR	NR
1407	O (NR)	D	NR	NR	No	na	NR	M	W	NR
1409	F	D	NR	NR	No	na	NR	NR	NR	NR
1412	S/D	Yes (Pk,C/S)	NR	NR	No	S	V	M	W	NR
1413	S/D	D	NR	NR	No	S	NR	NR	NR	NR
1415	F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
1418	R	Yes (Pk,C/S)	NR	No	No	na	N	M	O	NR
1423	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1424	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1426	R,H/C	Yes (NR)	NR	NR	No	na	NR	NR	NR	NR
1434	H/C,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1441	R	Yes (Pk,C/S)	NR	No	No	na	NR	M	W	NR
1442	S/D	D	NR	NR	No	S	NR	NR	NR	NR
1443	H/C,F,S/D	Yes (Pk,C/S,A)	NR	NR	No	S	VNR	NR	NR	NR
1450	R,H/C,Cu,F,S/D	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1451	S/D	D	NR	NR	No	S	NR	NR	NR	NR
1452	H/C,S/D	Yes (Pk)	NR	NR	No	S,NS	V,N	M,NPk	NR	NR
1470	R,H/C,Cu,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1476	R,H/C,Cu,F,M,S/D	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1481	H/C	D	NR	NR	No	NR,NS	NR,No	NPk,NR	NR	NR
1486	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1491	S/D	Yes (Pk)	NR	NR	No	S(N)	V	M	NR	NR
1504	H/C	D	NR	NR	No	na	NR	NR	NR	NR
1505	R,H/C,F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
1516	R	Yes (Pk,C/S)	NR	No	No	na	MAP	M	NR	NR
1519	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1522	R,F	D	NR	NR	No	na	NR	NR	NR	NR
1526	S/D	D	NR	NR	No	S	NR	NR	NR	NR
1530	R,H/C,F,M,S/D	D	NR	NR	No	S,NS	NR	NR	W	4,10 (S)

RefID[(a)]	Processing[(b)]	Exposure to contamination[(c)]	AMA/ AMP[(d)]	Post-lethal treatment application	pH/a_w data	Smoking[(e)]	Packaging type[(f)]	Packaging site[(g)]	Shelf-life[(h)]	Retail storage temperature (ºC)[(i)]
1535	R	Yes (Pk,C/S)	NR	No	No	na	N	M	NR	4 (P)
1538	H/C,S/D	Yes (Pk,C/S)	NR	NR	No	S	V	M,S	NR	NR
1539	F	D	NR	NR	No	NS	NR	NR	NR	NR
1542	R,H/C,Cu,F,M,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1544	R,F,S/D	Yes (Pt)	NR	NR	No	na	NR	NR	NR	NR
1551	R	Yes (Pt)	No	No	No	na	No	NPk	NR	NR
1552	R	Yes (Pt)	No	No	No	na	No	NPk	NR	NR
1554	F,S/D	Yes (Pk,C/S)	NR	NR	No	na	NR	NR	NR	NR
1556	Cu,F	No	NR	NR	No	NS	NR	NR	NR	NR
1562	H/C	Yes (Pk,C/S)	NR	NR	No	NS	NR,No	NPk,NR	O	<5-ambient (M)
1563	H/C	Yes (C/S)	NR	NR	No	NR	NR	NR	NR	NR
1571	H/C,S/D	D	NR	NR	No	S,NS	NR	NR	W	3.8-14 (S)
1577	S/D	Yes (Pk)	NR	NR	Yes	S	V	M	W	NR
1578	Cu,F,S/D	D	NR	NR	No	NR	NR	NR	W	3-10.1 (M)
1582	FS/D	D	NR	NR	Yes	NS	NR	NR	NR	NR
1588	R,F,S/D	Yes (Pk,Pt)	NR	NR	No	na	NR	NR	NR	NR
1590	H/C,S/D	D	NR	NR	No	S	NR	NR	NR	NR
1591	H/C	D	NR	NR	No	NS	NR	NR	NR	NR
1596	R,H/C,Cu,F,S/D	Yes (C/S,Pt)	NR	NR	No	NS	MAP,N,NR	M,NPk	NR	NR
1600	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
1614	R,H/CM,S/D	Yes (Pk)	Yes (FS)	NR	No	S	V,N	NR	W	NR
1615	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1616	R,H/C,Cu,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1624	S/D	Yes (Pk)	NR	NR	No	S	V	NR	W	NR
1635	R	Yes (Pk)	NR	No	No	na	NR	M	NR	NR
1638	R	Yes (C/S,A)	NR	No	No	na	No	NPk	NR	NR
1639	H/C	Yes(A)	NR	NR	No	na	No	NPk	NR	NR
1681	F	D	NR	NR	Yes	na	NR	NR	NR	NR
1690	H/C,Cu,F,M,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1698	R	Yes (Pk,C/S)	NR	NR	No	na	NR,No	M,NPk	NR	NR
1699	S/D	Yes (Pk)	NR	NR	No	S	V	M	NR	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
1703	H/C,S/D	Yes (Pk)	NR	NR	No	S,NS	NR	M	NR	5 (S)
1708	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1719	S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1727	R,H/C	D	NR	NR	No	na	NR	NR	NR	NR
1729	H/C	Yes (Pk,C/S)	NR	NR	No	NS	NR	NR	W	NR
1742	R,H/C,S/D	D	NR	NR	No	NR,NS	NR	NR	NR	NR
1743	H/C,F,S/D	D	NR	NR	No	NR,NS	NR	NR	NR	NR
1749	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
1756	H/C	D	NR	NR	No	NS	NR	NR	NR	NR
1757	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1758	R,H/C,F	Yes(Pk,A)	NR	NR	No	NS	N,NR	NR	NR	NR
1759	R,H/C,F	D	NR	NR	No	na	NR	NR	NR	NR
1762	R	Yes (Pk,C/S,A)	NR	NR	No	na	N	M	O	NR
1766	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1768	H/C,Cu,F,S/D	D	NR	NR	No	S,NS	NR	NR	W	NR
1774	H/C,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1775	H/C,M,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1781	H/C,Cu,F,M,S/D	Yes (Pk,C/S)	NR	NR	Yes	S,NS	V,NR	NR	W	NR
1782	R,H/C,F	D	NR	NR	No	na	NR	NR	NR	NR
1788	R,H/C,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1789	H/C	D	NR	NR	No	NS	NR	NR	W	NR
1792	F,S/D	D	NR	NR	Yes	NS	NR	NR	NR	NR
1798	F	D	NR	NR	No	na	NR	NR	NR	NR
1805	F	Yes (Pk)	NR	NR	No	na	NR	NR	NR	NR
1806	R,H/C,F,S/D	D	NR	NR	Yes	NR	N	S	NR	NR
1819	R,H/C,F	D	NR	NR	No	na	No	NPk	NR	NR
1820	R	Yes (Pt)	No	NR	No	na	No	NPk	NR	NR
1821	R	D	NR	NR	No	na	NR	M	NR	NR
1822	F,S/D	Yes (C/S)	NR	NR	No	na	NR	M,S	NR	NR
1823	R,H/C,F,S/D	D	NR	NR	No	NS	NR	NR	W	NR
1824	R,H/C,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1826	F	D	NR	NR	No	na	NR	NR	NR	NR
1827	F	Yes (C/S)	NR	NR	No	na	N,NR	M,S	NR	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
1830	H/CS/D	Yes (Pk)	NR	NR	No	S,NS	V	M	NR	NR
1831	F,S/D	D	NR	NR	Yes	NS	NR	NR	NR	NR
1833	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
1842	H/C,S/D	Yes (Pk,C/S)	NR	NR	Yes	S,NS	V	NR	NR	0-13.5 (S)
1844	H/C,F,S/D	D	NR	NR	No	NR	NR	NR	NR	NR
1845	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1853	IC	Yes (Pt)	Yes (FS)	No	No	na	No	NPk	NR	NR
1855	F,S/D	Yes (Pk)	NR	NR	No	na	N	M	O	NR
1862	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
1869	F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
1871	R,H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1872	R,H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1874	R,F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1882	R,F	Yes (Pt)	Yes (FS)	NR	No	na	NR	NR	NR	NR
1886	F	D	NR	NR	No	na	NR	NR	NR	NR
1887	H/C	D	NR	NR	No	NS	NR	NR	NR	NR
1889	S/D	Yes (Pk,C/S)	NR	NR	No	S	V	M	NR	NR
1895	R,H/C,Cu,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1897	H/C	Yes (A,Pt)	NR	NR	No	na	No	NPk	NR	NR
1898	R,H/C,Cu,F,S/D, IC	D	NR	NR	No	NS	NR	NR	NR	NR
1899	R,H/C,S/D	D	NR	NR	No	na	N,No	NR	NR	NR
1900	R,H/C	D	NR	NR	No	NS	NR	NR	NR	NR
1903	R,H/C,Cu,F,M,S/D	D	NR	NR	Yes	S,NR,NS	NR	NR	NR	NR
1904	F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
1906	R,H/C,Cu,FS/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1908	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
1914	H/C	D	NR	NR	No	S(N)	NR	NR	NR	3,22 (S)
1915	F,S/D,BP	D	NR	NR	No	na	NR	NR	NR	NR
1916	Cu,F,S/D	No	NR	NR	Yes	NS	NR	NR	O	15-16 (M)
1917	R,H/C	Yes (Pk,C/S)	NR	NR	No	NR	MAP,V,N	NR	O	4 (M)

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
1922[j]	**H/C,S/D**	**D**	**NR**	**NR**	**No**	**S**	**V**	**M**	**NR**	**-2,4,8 (M)**
1923	R,S/D	Yes (Pk)	NR	NR	No	S,NS	V,No	NR	W	NR
1924	S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1925	R	Yes (Pk)	Yes (FS)	NR	No	NS	NR	NR	W	NR
1932	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1933	S/D	Yes (Pk)	NR	NR	No	S	V	M	W	4,10 (S)
1952[j]	**H/C**	**Yes (C/S)**	**NR**	**NR**	**No**	**NS**	**V,N**	**M,NPk**	**NR**	**4,8 (M)**
1953	F,S/D	D	NR	NR	Yes	NR,NS	NR	NR	NR	NR
1954	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
1955	R	Yes (Pt)	NR	NR	No	na	No	NPk	NR	NR
1961	F	D	NR	NR	No	na	NR	NR	NR	4 (D)
1963	R,S/D	D	NR	NR	Yes	S,NS	MAP	NR	NR	0-4 (S and C)
1975	H/C,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
1980	H/C,F	Yes (Pk)	NR	NR	No	NR	V	NR	O	NR
1987	H/C	Yes (Pk,C/S)	NR	NR	No	NS	NR	M,NPk	NR	84% ≤8ºC, 16% >8ºC
2003	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
2006	R,H/C	D	Yes (FS)	NR	No	S,NS	NR	NR	NR	NR
2008	H/C	D	NR	NR	No	S,NS	NR	M	NR	NR
2012	H/C,F,S/D,BP	D	NR	NR	No	na	NR	NR	NR	NR
2013	F	D	NR	NR	No	na	NR,No	NPk,NR	NR	NR
2016	F	D	NR	NR	Yes	na	NR	NR	NR	NR
2023	R,H/C	Yes (A)	No	No	No	NS	NR	S	NR	NR
2029	R,H/C,F,S/D	Yes(A,Pt)	NR	No	No	na	No	NPk	NR	NR
2031	F	D	NR	NR	No	NS	NR	NR	NR	NR
2046	F	D	NR	NR	Yes	na	NR	NR	NR	NR
2052	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
2063	R	D	NR	NR	No	NS	NR	NR	NR	NR
2064	F	Yes (Pk,C/S)	NR	NR	Yes	na	NR	NR	NR	NR
2065	H/C	Yes (C/S)	NR	NR	No	NS	N	S	NR	NR
2067	R,H/C,F,S/D	D	NR	NR	No	S,NS	NR	NR	NR	NR
2070	F	D	NR	NR	Yes	NR	NR	NR	NR	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
2072	R	Yes (Pk,C/S)	No	NR	No	na	N	M	O	NR
2076	F	D	NR	NR	No	na	NR	NR	NR	NR
2078	F	D	NR	NR	No	na	NR	NR	NR	NR
2080	R,H/C,F	Yes (A)	NR	NR	No	S,NS	NR	NR	NR	NR
2085	IC	Yes (Pk,	Yes (FS)	NR	No	na	N	M	NR	NR
2097	F	D	NR	NR	Yes	na	NR	NR	NR	NR
2098	S/D	Yes (Pk,O)	NR	NR	Yes	NR	NR	M	NR	NR
2101	F	D	NR	NR	Yes	na	NR	NR	NR	NR
2107	F,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
2116	H/C	Yes (Pk,C/S)	NR	NR	No	NR	Type NR,No	M,NPk	NR	NR
2120	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
2123	R,H/C	Yes (Pt)	No	No	No	NS	No	NPk	NR	NR
2124	R,H/C	Yes (Pt)	NR	NR	No	NS	No	NPk	NR	NR
2129	H/C	Yes (Pk)	NR	NR	No	NR	V,N	M	NR	NR
2130	S/D	Yes (Pk)	NR	NR	No	S(N)	V	M	NR	NR
2132	H/C,F,S/D	Yes (Pk,C/S)	NR	NR	No	S	V,N	M,S	NR	NR
2134	F	D	NR	NR	Yes	na	O	NR	NR	NR
2136	H/C,F	D	NR	NR	No	NS	NR	NR	NR	NR
2137	F	D	NR	NR	No	NS	NR	NR	NR	NR
2138	F	D	NR	NR	No	na	NR	NR	NR	NR
2139	F,S/D	D	NR	NR	No	na	NR	NR	NR	NR
2145	H/C	D	NR	NR	No	NS	MAP,V	NR	O	NR
2146	R	D	NR	NR	No	na	N	NR	NR	28% ≤8ºC, 5.4% >8ºC
2147	R	Yes (Pk,C/S)	NR	NR	No	na	NR	NR	NR	91% ≤8ºC, 6% >8ºC
2154	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
2157	F	D	NR	NR	No	na	N	NR	W	
2159	H/C,F	Yes (Pk,C/S)	NR	Yes (thermal treatment)	No	NR	V,NR	M	NR	
2160	Cu,F,S/D	D	NR	NR	Yes	S(N)	NR	NR	NR	
2161	F,S/D	D	NR	NR	Yes	na	NR	NR	NR	NR
2162	F	D	NR	NR	Yes	na	NR	NR	NR	NR

RefID[a]	Processing[b]	Exposure to contamination[c]	AMA/ AMP[d]	Post-lethal treatment application	pH/a_w data	Smoking[e]	Packaging type[f]	Packaging site[g]	Shelf-life[h]	Retail storage temperature (ºC)[i]
2169	R	Yes (Pk,C/S)	NR	NR	No	na	NR	NR	W	NR
2175	F,S/D	D	NR	NR	Yes	na	NR	NR	W	NR
2176	F,S/D	D	NR	NR	Yes	na	NR	NR	W	NR
2184	R	Yes (Pt)	NR	NR	No	na	No	NPk	NR	NR
2191	H/C	Yes (Pt)	NR	NR	No	NS	No	NPk	O	NR
2203	H/C,F	Yes (Pk,C/S)	NR	NR	No	NR	MAP,V,No	M,NPk	NR	NR
2218	R,H/C	Yes (Pt)	NR	NR	No	NS	NR	NR	NR	4-12 (M,P,C)
2219	R,S/D	D	NR	NR	No	NS	NR	NR	NR	NR
2220	F	D	NR	Yes (thermal treatment)	Yes	NS	NR	NR	NR	NR
2224	R,H/C	Yes (Pt)	NR	NR	No	NS	No	NPk	NR	NR
2225	R,H/C	Yes (Pt)	NR	NR	No	na	No	NPk	NR	NR
2226	R,H/C	D	NR	NR	No	na	NR	NR	NR	NR
2242	S/D	D	NR	NR	No	S	NR	NR	NR	NR
2250	R	D	NR	NR	No	na	NR	NR	NR	NR
2261	R,F,S/D,IC	D	Yes (FS)	NR	No	na	NR	NR	NR	NR
2264	F	Yes (Pk)	NR	NR	No	na	Type NR	NR	NR	NR
2267	F,S/D	D	NR	NR	Yes	NS	NR	NR	NR	NR
2277	S/D	Yes (Pk,C/S)	NR	NR	Yes	S	V	NR	O	5 (S)
2280	R,H/C	Yes (A)	NR	NR	No	na	NR	NR	NR	NR
2285	H/C	D	NR	NR	No	na	NR	NR	NR	4-10 (C)
2294	R,H/C,S/D	D	NR	NR	No	S,NS	NR	NR	O	4 (S)
2296	R,H/C,Cu	Yes (C/S)	NR	NR	No	NR,NS	NR	M,S	NR	NR
2298	H/C	D	NR	NR	No	NS	NR	NR	NR	NR
2299	R,H/C,F,S/D,O,	Yes (Pk)	NR	NR	No	S,NS	MAP,V,N,NR	NR	NR	NR
2314	R,H/C,Cu,F,S/D	D	Yes (FS)	NR	No	S,NS	NR	NR	NR	NR
2318	S/D	Yes (Pk,C/S)	NR	NR	No	S(N)	V	M	O	5 (S)
2320	H/C	Yes (Pk,C/S)	NR	NR	No	S,NS	NR	M	NR	NR
2327	R,H/C,Cu,F,S/D	Yes (Pk)	NR	NR	No	NS	NR	NR	W	NR
2331	R,H/C,IC	Yes (Pk,C/S)	NR	NR	No	S,NS	MAP,N,NR	NR	NR	NR
2341	H/C	Yes (Pk,C/S)	NR	NR	No	NS	V	M,S	NR	NR

RefID[(a)]	Processing[(b)]	Exposure to contamination[(c)]	AMA/ AMP[(d)]	Post-lethal treatment application	pH/a_w data	Smoking[(e)]	Packaging type[(f)]	Packaging site[(g)]	Shelf-life[(h)]	Retail storage temperature (ºC)[(i)]
2344	R,H/C,F	Yes (Pk,C/S,Pt)	Yes (FS)	NR	No	NS	NR	NR	NR	NR
2346	R,H/C,F,S/D	No	NR	NR	No	na	NR	NR	NR	NR
2351	S/D	Yes (Pk,C/S)	NR	NR	No	S(N)	V	M	NR	NR
2368	H/C	D	NR	NR	No	NR	NR	NR	NR	NR
2387	R,H/C,F,S/D	Yes (Pk,C/S)	NR	NR	No	S,NS	MAP,V	NR	NR	NR
2388	H/C,F,S/D	D	NR	NR	No	S,NS	V,NR	NR	W	3.5-5.0 (S)
2389	H/C,M,S/D	Yes (Pk,C/S)	NR	NR	No	S,NS	Type NR	NR	NR	NR

NR: not reported.

(a): Full references listed in Appendix E.
(b): R: raw, H/C: heated/cooked, Cu: cured, F: fermented, M: marinated, S/D: salted/dried, IC: ice cream elaboration, BP: butter production, MP: minimally processed, CS: cold smoked.
(c): D: doubtful, A: assembling with other ingredients, Pk: (re)packaging, C/S: cutting/slicing, Pt: partitioning.
(d): Antimicrobial agent (AMA) or process (AMP) to limit or suppress *Listeria monocytogenes* growth). FS: freezing storage.
(e): NS: Products not smoked, S(N): smoking (natural), S: smoking (type not specified), na: not applicable.
(f): MAP: modified atmosphere packaging, V: vacuum, N: normal atmosphere, No: No packaging.
(g): M: by manufacturer, S: in-store, NPk: not pre-packaged.
(h): W: within shelf-life, O: other.
(i): M:Temperature of meat products, S: seafood, D: dairy, P: produce, C: composite.
(j): In bold intervention studies reporting prevalence of *L. monocytogenes* diferent than zero and comparable with a reference treatment.

Table D. 9: Prevalence and levels of *Listeria monocytogenes* in meat products

						Semi-quantitative levels									
RefID[a]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[c] (level,n)**	**Units**	**% >100**
	Cooked meat														
255	Cooked ham	487	8	0.016	NR										
665	Vacuum packaged cooked sliced meat (after slicing and packaging)	127	NR		SQ	0								CFU/g	0
665	Vacuum packaged cooked sliced meat (end of shelf-life)	127	NR		SQ	10								CFU/g	0
1182	Cooked meat products (in-store packaged)	369	34	0.092	NR										
1206	Heat-treated meat products	14	0	0.000	NR										
1208	Precut (sliced or cubed) RTE heat-treated meat products	160	13	0.081	NR										
1223	Cooked ham	67	0	0.000	NR										
1326	Cooked ham	24	3	0.125	SQ										0
1326	Cooked turkey breast & Pork luncheon meat	24	4	0.167	SQ										0
1434	RTE meat	18	5	0.278	NR										
1481	Cold meats	2078	60	0.029	SQ										0.03
1538	Deli meat products (Vacuum packaged by producer)	220	6	0.027	SQ	0	2					4	<10,4	CFU/g	0.9
1538	Deli meat products (in-store packaged)	200	17	0.085	SQ	3	7					6	>1000,1	CFU/g	4
1563	Cold, sliced, RTE meats (cut/slied on or off the premises)	3455	NR		SQ		5	0					<20,3442; <100,8	CFU/g	0.14
1729	RTE pre-cooked chilled chicken	102	29	0.284	NR										
1742	Heat treated meat products (brawn, liver sausages, hamburger, susages, ham)	112	17	0.152	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels					>10	<10	Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000					
1756	Poultry meat heat treated products (e.g. pâté and sausages)	50	0	0.000	NR										
1768	Fried meat products	204	0	0.000	NR										
1775	Pasteurized canned pork ham	1293	0	0.000	NR										
1781	Turkey	60	1	0.017	SQ							1		CFU/g	0
1781	Ham	310	4	0.013	SQ							4		CFU/g	0
1781	Roast beef	43	0	0.000	NR										
1789	Cooked poultry products	96	0	0.000	NR										
1823	Sliced meats (within shelf-life)	1484	55	0.037	SQ	3							>0.04-10,42; >100,10	CFU/g	0.7
1823	Sliced meats (end of shelf-life)	684	29	0.042	SQ	4							>0.04-10,18; >100,7	CFU/g	1
1844	Cooked meat	68	8	0.118	NR										
1895	Cooked meat	1321	29	0.022	SQ								20-60, 3	CFU/g	0
1895	Smoked sausage	143	0	0.000	NR										
1898	Meat sliced (beef, poultry)	1589	NR		SQ										0.7
1898	Meat sliced (ham)	973	NR		SQ										0
1917	Heated turkey breast	57	1	0.018	SQ		1					55		CFU/g	0
1975	Smoked and cooked meat products	65	0	0.000	NR										
2006	Cooked meats (beek, pork, turkey)	18	0	0.000	NR										
2006	Cooked ham	10	0	0.000											
2008	Smoked and non-smoked heat treated turkey products	55	4	0.073	NR										
2023	Meat of chicken doner kebab	71	2	0.028	NR										
2065	Cooked ham and chopped pork (in-store sliced)	68	5	0.074	NR										
2067	Ham	135	7	0.052	NR										
2116	Sliced RTE poultry products (unpackaged)	36	7	0.194	NR										

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels					>10	<10	Other[(c)] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000					
2116	Sliced RTE poultry products (packaged)	9	0	0.000	NR										
2123	Cooked ham	60	0	0.000	NR										
2124	Cooked meat products	18	0	0.000	NR										
2129	Processed poultry (vacuum)	91	1	0.011	NR										
2129	Grilled broilers (single-packaged)	49	1	0.020	NR										
2132	Sliced and vacuum-packaged processed meat	35	4	0.114	SQ								1-300, 4	CFU/g	
2145	Cooked meats (vacuum and MAP)	2976	190	0.064	SQ		13	10	3				<10-<20,143; 20-<10,20; 1e6-<1e7,1	CFU/g	0.91
2159	Sliced vacuum-packaged cooked meats	30	2	0.067	NR										
2191	Sous vide meats (chicken breast, foie gras, pork loin, veal entrecote)	12	0	0.000	NR										
2203	Cooked ham (not prepackaged)	20	2	0.100	NR										
2203	Cooked ham (MAP packaged)	20	0	0.000	NR										
2203	Cooked meat (turkey, roast beef) MAP packaged and not-prepackaged	120	0	0.000	NR										
2218	Fried liver	20	0	0.000	NR										
2294	Cooked meat products	639	7	0.011	SQ										0
2296	Cooked meat products*	3405	167	0.049	SQ						48			CFU/g	
2299	Ham (prepackaged and not prepackaged)	5	0	0.000											
2299	Sliced cold meat (prepackaged and not prepackaged)	9	0	0.000	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels					>10	<10	Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000					
2314	Cooked meats, sliced (mortadella, chopped pork and turkey, cooked ham)	396	35	0.088	NR										
2320	Sliced boiled turkey ham	50	0	0.000	NR										
2320	Sliced boiled pork ham	50	2	0.040	NR										
2320	Sliced smoked turkey ham	50	0	0.000	NR										
2320	Sliced smoked pork ham	50	0	0.000	NR										
2331	Sliced cooked ham (open)	10	5	0.500	NR										
2331	Sliced cooked ham (MAP)	10	2	0.200	NR										
2331	Sliced cooked turkey (open)	10	3	0.300	NR										
2331	Sliced cooked turkey (MAP)	10	1	0.100	NR										
2341	Cooked ham (freshly cut)	71	1	0.014	NR										
2341	Cooked ham (pre-packaged)	30	5	0.167	NR										
2344	Sliced cooked meats (vacuum-packaged)	439	1	0.002	SQ										0
2368	Cooked meat (red meat)	31	2	0.065	NR										
2368	Cooked meat (chicken)	28	1	0.036	NR										
2387	Heat-treated meat products (year 1994-95)	772	45	0.058	SQ	12								CFU/g	1.4
2387	Heat treated meat products handled after heat treatment (year 1997-98)	6809	NR		SQ	590						6194		CFU/g	0.4
2388	Sliced or unsliced sausages and ham, frankfurters and pâtés	68	24	0.353	SQ									CFU/g	13.2
	Cooked sausages														

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level,n)	Units	% >100
689	Cooked sausages (coarse, semi-coarse and finely ground)	1049	19	0.018	NR										
789	Morcela de arroz	54	0	0.000	NR										
1318	Hot smoked sausages	15	0	0.000	NR										
1318	Hot smoked sausages (vacuum packaged)	14	3	0.214	NR										
1758	Sausages frankfurters	13	3	0.231	NR										
1775	Cooked sausages	84	2	0.024	NR										
1781	Sausage	35	0	0.000	NR										
1906	Smoked sausages	48	0	0.000	NR										
1906	Blood sausages	9	1	0.111	NR										
1917	Frankfurter (non-sliced)	114	5	0.044	SQ	3						109	>100,2	CFU/g	2
1917	Emulsion type sausages other than frankfurter (non-sliced)	30	0	0.000	SQ	0						30		CFU/g	0
1917	Emulsion type sausages (sliced)	88	0	0.000	SQ		0					88		CFU/g	0
2159	Non-sliced vacuum-packaged cooked meats	18	1	0.056	NR										
2159	Emulsion type sausages heated in final packs	12	0	0.000	NR										
2327	Cooked sausage and pâté	112	5	0.045	NR										
	Dry cured meat														
1326	Cured dried pork sausages	65	11	0.169	SQ										0
1690	Cured and dryed meat products	132	4	0.030	NR										
1906	Dry cured ham	44	1	0.023	NR										
1953	Ham (Bundner Rohdchinken, jambon d'Ardennes, jamón serrano and prosciutto di Parma)	50	0	0.000	NR										
2098	Parma ham	708	14	0.020	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels					>10	<10	Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000					
2296	Raw cured meat products*	824	113	0.137	SQ						48			CFU/g	
2314	Cured meats, sliced (salami, chorizo, salchichon)	345	23	0.067	NR										
2327	Cured meat products	77	1	0.013	NR										
	Fermented meat														
255	Dryed pork sausages	192	12	0.063	NR										
667	Fermented sausages (end of ripening)	50	4	0.080	NR										
859	Spanish Chorizo (ISO 11290-1)	52	29	0.558	SQ						0			CFU/g	
859	Spanish Chorizo (SureTect)	52	40	0.769	NR										
1187	Fermented sausages	80	0	0.000	NR										
1191	Turkish fermented sausage	25	5	0.200	NR										
1191	Salami	25	4	0.160	NR										
1206	Salami	11	0	0.000	NR										
1208	Precut (sliced or cubed) RTE fermented meat products	49	4	0.082	NR										
1318	Fermented raw sausages	21	4	0.190	NR										
1381	Sucuk (Turkish style fermented sausage)	300	35	0.117	NR										
1415	Fermented italian sausages	237	36	0.152	SQ	0							<3MPN/g,24; 3-9MPN/g,12;	0	
1443	Vacuum packaged sliced salami	112	23	0.205	SQ										0
1539	Short-ripened salami (cacciatori)	77	NR		SQ	10							>100, 1	MPN/g	1.3
1556	Salami cacciatore	1020	232	0.227	SQ										0
1582	Traditional fermented sausages	21	9	0.429	NR										
1690	Fermented sausages	142	21	0.148	NR										
1719	Raw-dried sasusages	141	16	0.113	NR										
1719	Raw-smoked sausages	140	12	0.086	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level,n)	Units	% >100
1743	Salami	12	2	0.167	NR										
1792	Fermented sausages (traditional)	9	3	0.333	Q[d;c1]										
1831	European dry-sausages	54	0	0.000	NR										
1869	Traditional fermented sausages	19	3	0.158	NR										
1895	Fermented meats	316	6	0.019	NR										
1898	Salami	276	NR		SQ										0
1904	Traditional fermented sausage "salsiccia sarda"	10	8	0.800	NR										
1906	Spanish-style sausage	27	1	0.037	NR										
1916	Dry salami	16	0	0.000	NR										
1975	Fermented dry meat products	45	8	0.178	NR										
2031	Fermented sausages (camel meat)	100	9	0.090	NR										
2070	Salami	140	48	0.343	NR										
2107	Fermented sausages	2	0	0.000	NR										
2132	Fermented sausages (90% sliced at the stores)	70	0	0.000	NR										
2137	Longaniza de Aragon	26	0	0.000	NR										
2159	Dry fermented sausages (salamis)	4	0	0.000	NR										
2160	Traditional Greek salami	8	0	0.000	NR										
2203	Salami (vacuum packaged and not-prepackaged)	40	0	0.000	NR										
2220	Pasteurized soudjouck Afyon-style	100	7	0.070	NR										
2267	Dried sausages (saucisse, saucisson, rosette, chorizo)	30	3	0.100	SQ								<3,3	CFU/g	0
2327	Fermented sausages	65	1	0.015	NR										
	Other meat products														

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels							Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10			
108	RTE meat_vacuum pack	14	6	0.429	NR										
108	RTE meat_NO vacuum pack	26	0	0.000	NR										
130	Meat products	22	0	0.000	NR										
411	RTEMP (Ready-to-eat meat-based products)	20	5	0.250	NR										
493	Pastrami (traditionally produced)	20	0	0.000	NR										
571	Meat products	100	4.2	0.042	NR										
581	Cold cuts	125	1	0.008	NR										
1191	Sausage (type not reported)	25	3	0.120	NR										
1191	Sliced pastrami	25	2	0.080	NR										
1281	Cold smoked pork (vacuum packaged) Latvia	267	99	0.371	NR										
1281	Cold smoked pork (vacuum packaged) Lithuania	45	21	0.467	NR										
1282	Sliced vacuum packaged meat products	211	38	0.180	SQ		1						0.04 - <100, 6	2.8	
1326	Frozen chicken croquetes	65	4	0.062	SQ										0
1326	Meat products (several subcaterogies)	323	0	0.000	SQ										0
1344	Meat products (cooked ham, dry-cured ham, mortadella, salami, etc)	61	0	0.000	NR										
1505	Processed meat products	50	9	0.180	NR										
1542	Meat products	1044	36	0.034	NR										
1578	Speciality meats (continental sausages, cured or fermented meats, dried meats)	2359	NR		SQ										0.25

						Semi-quantitative levels									
RefID[a]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[c] (level,n)**	**Units**	**% >100**
1590	RTE meats (cold-smoked lamb and cooked meats)	43	1	0.023	NR										
1596	RTE meats (Ham, chorizo, curedham, bacon, salami, pâté, etc.)	47	10	0.213	NR										
1616	Products included in "other" category	-	-		NR										
1690	Cooked-and cured meat products	255	15	0.059	NR										
1768	Sausages and smoked meat sausages	2153	6	0.003	NR										
1768	Smoked meat products	1154	25	0.022	NR										
1768	Mixed RTE meat products	2569	93	0.036	NR										
1781	Other (rump steak, hamburguer meat, other)	59	1	0.017	SQ							1		CFU/g	
1788	Dried or cooked sausages	641	25	0.039	NR										
1788	Cooked or salted treated meats	151	4	0.026	NR										
1806	Meat products (fermented sausage, pâtés, dried beef and ham, roast beef and cooked chicken products)	21	2	0.095	NR										
1903	Meat products (semi-dry fermented sausages and deli meats)	50	10	0.200	NR										
1980	RTE meat products (before date of minimum durability)	17	2	0.118	NR										
1980	RTE meat products (after date of minimum durability)	25	1	0.040	NR										
2224	RTE meats	15	0	0.000	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels					>10	<10	Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000					
2299	Bacon	3	1	0.333	NR										
2387	Preserved meat products not heat-treated (year 1994-95)	328	77	0.235	SQ	6								CFU/g	0.6
2387	Preserved meat products not heat-treated (year 1997-98)	357	NR		SQ	51						301		CFU/g	1.4
	Pâté														
859	Pork pâté (ISO 11290-1)	56	13	0.232	SQ						0			CFU/g	
859	Pork pâté (SureTect)	52	11	0.212	NR										
1452	Pâté (not prepackaged)	140	6	0.043	SQ	5	1								0.7
1452	Pâté (prepackaged)	42	4	0.095	SQ	4									0
1481	Pâté	1178	22	0.019	SQ										0
1538	Pâté (Vacuum packaged by producer)	120	1	0.008	SQ	1								CFU/g	0
1538	Pâté (in-store packaged)	41	0	0.000	SQ										0
1562	Pâté (prepackaged and loose)	2460	211	0.086	SQ			16	15	5			<200,138; 200-1000,26; >1 000 000,3		
1768	Pâté products	666	11	0.017	NR										
1844	Pâté	40	14	0.350	NR										
1887	Pâté	2324	187	0.080	SQ								>1000,35		
1895	Pâté	411	1	0.002	NR										
1898	Pâté	507	NR		SQ										0
1900	Pâté	260	NR		SQ										0.4
1952[b]	**Pâté (slices from loaves on display)**	**155**	**46**	**0.297**	**SQ**		**4**	**4**					**<20,21; 20-100,4; >10 000,9; not performed,4**	**CFU/g**	**11**
1952[b]	**Pâté (unopened packages)**	**50**	**23**	**0.460**	**SQ**		**3**						**<20,17; 20-100,2; >10 000,1**	**CFU/g**	**8**
1952[b]	**Pâté (vacuum-packaged portions)**	**11**	**6**	**0.545**	**SQ**								**<20,4; not performed,2**	**CFU/g**	**0**

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels							Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10			
1952[b]	**Pâté (7 loaves of 2kg, 21 days storage at 4ºC)**	**56**	**37**	**0.661**	**SQ**								**Counts for every pâté loave available in the pdf)**		
1987	Meat based pâté	1804	37	0.021	SQ			2	2				<200,29; 200-1000,1; >1e6,2	CFU/g	0.4
1987	Poultry based pâté	528	17	0.032	SQ			1	2	1			<200,11; 200-1000,2	CFU/g	1.1
1987	Pâté (Type not known)	380	11	0.029	SQ				1				<200,9; >1e6,1	CFU/g	0.5
2136	Pâté	8	0	0.000	NR										
2203	Pâté (Vacuum-packaged)	20	0	0.000	NR										
2299	Pâté (prepackaged and not prepackaged)	23	0	0.000	NR										
2344	Pâté (not shelf stable varieties)	128	1	0.008	SQ										0
	Raw meat														
689	Raw sausages (RTE: raw smoked sausages, mettwurst, tatar)	133	47	0.353	NR										
1917	Raw spreadable sausage	11	4	0.364	SQ		4					6		CFU/g	0

CFU: colony forming units; N: number of samples taken, NR: not reported; RTE: ready-to-eat, Q: quantitative; SQ: semi-quantitative; s: number of positive samples.

(a): Full references listed in Appendix E.

(b): In bold intervention studies reporting prevalence of *Listeria monocytogenes* different than zero and comparable with a reference treatment.

(c): Semi-quantitative levels in a range/level different from those specified in the previous columns. Range/level, number of cases is indicated. Different semi-quantitative values for the same RefID are separated by semicolons.

(d): Concentration levels c1=1.5, 2.8 and 1.2 log CFU/g.

Table D. 10: Prevalence and levels of *Listeria monocytogenes* in seafood products

						Semi-quantitative levels									
RefID[a]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000 -10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[c] (level, n)**	**Units**	**% >100**
	Cold smoked														
663	Cold-smoked Greenland halibut	56	4	0.071	NR										
663	Cold-smoked salmon	59	8	0.136	NR										
1231[b]	**Cold-smoked rainbow trout(before cleaning & disinfection)**	**22**	**22**	**1.000**	**SQ**								**9+ by direct plating**		
1231[b]	**Cold-smoked rainbow trout (after cleaning & disinfection)**	**22**	**0**	**0**	**NR**										
1257	Cold-smoked salmon (period A)	626	41	0.065	NR										
1257	Cold-smoked salmon (period B, plants with higher prevalence)	384	63	0.164	SQ								Maximum: 2800	CFU/g	17
1393	Sliced cold-smoked salmon (2ºC)	100	20	0.200	SQ								>1100, 1		1
1393	Sliced cold-smoked salmon (10ºC)	65	12	0.185	SQ								15,1; 20,1; 290,1; 1100,1	CFU/g	6.1
1412	Vacuum-packaged pre-sliced cold-smoked salmon	120	26	0.217	SQ	20	2						0.04-10,4	CFU/g	2
1413	Cold-smoked salmon	21	2	0.095	NR										
1442	Cold-smoked salmon	33	4	0.121	NR										
1452	Cold smoked salmon (not prepackaged)	42	12	0.286	SQ	8	4	0							9.5
1452	Cold smoked salmon (vacuum packaged)	90	16	0.178	SQ	6	9	1							11.1
1452	Cold smoked trout (vacuum packaged)	38	10	0.263	SQ	4	5	1							15.8
1491	Cold-smoked Atlantic salmon	44	3	0.068	NR										
1526	Cold-smoked fish	58	2	0.034	NR										
1538	Cold-smoked salmon (vacuum packaged)	102	11	0.108	SQ	1	1					5	>1000,4	CFU/g	4.9
1538	Cold-smoked rainbow trout (vacuum packaged)	40	10	0.250	SQ	2	1					4	>1000,3	CFU/g	10
1577	Vacuum packaged smoked salmon fillets	30	0	0.000	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels										
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level, n)	Units	% >100	
1577	Vacuum packaged smoked trout fillets	24	0	0.000	NR											
1690	Cold-smoked fish	814	114	0.140	NR											
1703	Cold-smoked salmon	190	78	0.411	SQ	34	12					28	>1000,4	CFU/g	8.4	
1703	Cold-smoked halibut	20	12	0.600	SQ	2	3					6	>1000,1	CFU/g	20	
1768	Cold-smoked fish products	70	23	0.329	NR											
1781	Cold-smoked salmon and trout	206	32	0.155	SQ								<1-2.1, 32	log CFU/g		
1830	Cold-smoked fish (rainbow trout and salmon, vacuum)	26	3	0.115	SQ		1		1				<100, 1	CFU/g	7.7	
1842	Cold-smoked rainbow trout (sliced)	20	5	0.250	NR											
1842	Cold-smoked rainbow trout (not sliced)	42	4	0.095	NR											
1889	Sliced vacuum-packaged cold-smoked salmon	44	27	0.614	NR											
1922[b]	**Vacuum-packaged cold-smoked salmon (time 0)**	**360**	**26**	**0.072**	**NR**											
1922[b]	**Vacuum-packaged cold-smoked salmon (not superchilled)**	**198**	**51**	**0.258**	**SQ**								**<0.2,31; 0.2-100,15; >100,5**	**CFU/g**	**2.5**	
1922[b]	**Vacuum-packaged cold-smoked salmon (superchilled 14 days)**	**132**	**33**	**0.250**	**SQ**								**<0.2,14; 0.2-100,11; >100,8**	**CFU/g**	**6**	
1922[b]	**Vacuum-packaged cold-smoked salmon (superchilled 28 days)**	**132**	**30**	**0.227**	**SQ**								**<0.2,30; 0.2-100,6; >100,10**	**CFU/g**	**7.6**	
1924	Cold smoked fish	12	2	0.167	NR											
1933	Cold-smoked trout (vacuum packaged) stored at 4ºC	60	2	0.033	NR											
1933	Cold-smoked trout (vacuum packaged) stored at 10ºC	60	8	0.133	NR											
1963	Cold-smoked fish	50	6	0.120	SQ				1				<100,5	CFU/g	2	
2242	Cold-smoked salmon	202	27	0.134	SQ								>30,000, 1	CFU/g	0.3	
2277	Sliced vacuum-packaged cold smoked salmon	48	0	0.000	SQ								<0.3, 48	log CFU/g	0	
2318	Cold smoked salmon (sliced)	936	65	0.069	NR											
2351	Cold smoked salmon (sliced	102	4	0.039	NR											

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels								Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level, n)		
	and vacuum packaged)														
	Cured/Salted														
1326	Salted anhovies	12	0	0.000	SQ										0
1326	Salted herring	15	0	0.000	SQ										0
1703	Gravad fish	91	23	0.253	SQ	10	5					5	>1000,3	CFU/g	8.8
1703	Cured seafood (brined shrimps and surimi, oil marinated shrimps, caviar, marinated herring)	191	8	0.042	SQ							8		CFU/g	0
1768	Salted fish products	391	38	0.097	NR										
1774	Salted fish	15	0	0.000	NR										
1781	Gravad (salmon and trout)	194	28	0.144	SQ								<1-3.4, 28	log CFU/g	
1830	Gravad fish (rainbow trout and salmon, vacuum)	58	12	0.207	SQ		5	2					<100, 5	CFU/g	12.1
1842	Gravad rainbow trout (sliced)	31	10	0.323	NR										
1842	Gravad rainbow trout (not sliced)	12	4	0.333	NR										
1903	Cooked marinated products	42	2	0.048	NR										
1903	Raw marinated products	8	0	0.000	NR										
1923	Carpaccio-like salmon	50	25	0.500	SQ										12
1924	Cold salted fish	10	2	0.200	NR										
2219	Salted anchovy	50	6	0.120	NR										
2389	Dried fish	16	2	0.125	SQ										0
2389	Salted fish	18	2	0.111	SQ										0
2389	Raw marinated fish	9	1	0.111	SQ										0
	Hot smoked														
1526	Hot-smoked fish	23	0	0.000	NR										
1690	Hot-smoked fish	471	56	0.119	NR										
1768	Hot-smoked fish products	197	11	0.056	NR										
1781	Hot smoked (salmon, white fish, mackerel, trout)	113	2	0.018	SQ							2		CFU/g	
1830	Hot-smoked fish (vacuum)	66	1	0.015	SQ					1				CFU/g	1.5

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels								Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level, n)		
1842	Hot smoked fish	95	1	0.011	NR										
1924	Hot smoked fish	13	1	0.077	NR										
	Other seafood products														
153	Seafood products	12	0	0.000	NR										
255	Smoked salmon	803	69	0.086	NR										
571	Seafood products	100	1.6	0.016	NR										
963	Cooked fish and cephalopods	227	0	0.000	NR										
1261	Prepackaged gravad and smoked salmon	100	52	0.520	NR										
1326	Frozen Atlantic bonito small pies	10	2	0.200	SQ										0
1326	Frozen surimi crab sticks	14	0	0.000	SQ										0
1530	RTE seafood products	38	12	0.316	SQ										5.3
1542	Fish products	120	2	0.017	NR										
1571	Crabsticks (surimi)	60	0	0.000	NR										
1571	Young eels (surimi)	65	0	0.000	NR										
1590	RTE seafood (Cooked shrimps)	63	3	0.048	NR										
1614	Dried haddock	5	0	0.000	NR										
1614	Gravad fish (ocean perch and salmon)	23	6	0.261	NR										
1614	Other (shelfish, pastas (minced fish with spices, pasteurized), other)	19	1	0.053	NR										
1616	Products included in "other" category	-	-		NR										
1690	Marinated fish	125	47	0.376	NR										
1690	RTE fish and seafood products	151	11	0.073	NR										
1699	RTE vacuum-packaged fish products (hot and cold smoked and cold salted)	37	8	0.216	NR										
1703	Heat-treated seafood (hot-smoked, pâté, fish cake)	50	6	0.120	SQ	0	3					2	>1000,1	CFU/g	8
1768	RTE fish products (heat-treated fish products, cold treated fish products, dried fish, preserved fish products (heat-treated and	729	17	0.023	NR										

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels								Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[c] (level, n)		
	not heat-treated), caviar)														
1774	Panned fish products	43	1	0.023	NR										
1774	Fish half-cans	15	0	0.000	NR										
1774	Heat-treated and RTE fish products	20	0	0.000	NR										
1775	Marinated fish	34	0	0.000	NR										
1781	Other	38	4	0.105	SQ							4		CFU/g	
1900	Fish pâté	42	NR		SQ										0
1914	Charcoal-broiled european river lampreys	300	0	0.000	NR										
1923	Herb-flavored slices of raw and gravad salmon	111	54	0.486	SQ										29.7
1924	Roe	5	0	0.000	NR										
1925	Frozen roe	65	0	0.000	NR										
1925	Frozen-thawed roe	48	1	0.021	NR										
1925	Fresh roe	34	6	0.176	NR										
1987	Seafood based pâté	122	9	0.074	SQ								<200,6; 200-1000,2	CFU/g	1.6
2063	Fresh molluscan shelfish	61	8	0.131	NR										
2191	Sous vide fish (codfish, gilt head sea beam, hake, salmon)	12	0	0.000	NR										
2224	RTE fish	7	0	0.000	NR										
2298	Cooked-peeled shrimps	623	165	0.265	NR										
2299	Herring fillets	5	0	0.000	NR										
2299	Fish butter	3	0	0.000	NR										
2299	Other (prodcuts not specified)	4	0	0.000	NR										
2351	Cold smoked fish (trout, halibut, tuna) and gravad salmon	46	22	0.478	NR										
2387	Preserved fish products not heat-treated (smoked,cured,etc) (year 1994-95)	335	35	0.104	SQ	11								CFU/g	1.8
2387	Preserved fish products not heat-treated (smoked,cured,etc) (year 1997-98)	282	NR		SQ	60						219		CFU/g	1.1

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels							Other[c] (level, n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10			
2388	Vacuum-packaged smoked and cold-salted fish	110	22	0.200	SQ										9
2389	Cooked marinated cephalopods and surimi crab stick	13	0	0.000	NR										
	Shelfish														
334	Boiled mussel_MPN method	10	3	0.300	SQ								<3,7; 3.6,3	MPN/g	
334	Boiled mussel_ISO11290-2	10	0	0.000	SQ							10		CFU/g	
1323	Shellfish	1494	0	0.000	NR										
1323	Crustaceans	347	0	0.000	NR										
1591	Cooked peeled shrimp	82	0	0.000	NR										
1614	Shrimps (heat treated and frozen)	11	1	0.091	NR										
1895	Crustaceans	147	6	0.041	NR										
1898	Crustaceans	189	NR		SQ										0
2219	Raw mussel	50	1	0.020	NR										
	Smoked														
859	Smoked salmon (ISO 11290-1)	65	15	0.231	SQ						0			CFU/g	
859	Smoked salmon (SureTect)	65	13	0.200	NR										
867	Smoked salmon	10	0.9	0.090	NR										
1182	Smoked salmon (vacuum packaged)	52	14	0.269	NR										
1258	Smoked salmon (vacuum packaged)	226	15	0.066	NR										
1326	Smoked salmon	89	7	0.079	SQ										0
1434	Smoked salmon	18	2	0.111	NR										
1443	Smoked salmon	132	45	0.341	SQ										0
1451	Smoked salmon	176	49	0.278	SQ	45	1						>10000,3	CFU/g	2.3
1451	Smoked cod	32	8	0.250	SQ	8									0
1451	Smoked fish (other than salmon and cod)	37	9	0.243	SQ	9									0
1571	Smoked salmon	125	6	0.048	NR										
1614	Smoked (salmon, minced salmon, herring and trout)	31	2	0.065	NR										
1624	Smoked salmon (vacuum	177	25	0.141	NR										

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels								Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[(c)] (level, n)		
	packaged)														
1624	Smoked mackerel (vacuum packaged)	32	2	0.063	NR										
1624	Smoked halibut (vacuum packaged)	28	1	0.036	NR										
1624	Smoked trout (vacuum packaged)	9	3	0.333	NR										
1624	Smoked pollack (vacuum packaged)	15	2	0.133	NR										
1768	Smoked fish	296	7	0.024	NR										
1774	Smoked fish	72	2	0.028	NR										
1775	Smoked fish	451	4	0.009	NR										
1781	Smoked herring	7	0	0.000	NR										
1788	Smoked salmon	104	11	0.106	NR										
1895	Smoked fish	178	12	0.067	NR										
1903	Smoked fish	50	6	0.120	NR										
1923	Smoked fish (herring, salmon and trout)	323	45	0.139	SQ										0.93
1923	Herb-flavored slices of smoked salmon	54	10	0.185	SQ										1.85
2006	Smoked salmon	20	3	0.150	NR										
2067	Smoked salmon	19	0	0.000	NR										
2080	Smoked salmon	7	1	0.143	NR										
2130	Vacuum-packaged smoked salmon	65	7	0.108	NR										
2132	Vacuum-packaged smoked salmon	33	3	0.091	NR										
2294	Smoked fish (start shelf life)	45	13	0.289	SQ	1								CFU/g	
2294	Smoked fish (end of shelf life)	45	13	0.289	SQ	3	1								2.2
2299	Smoked fish	81	17	0.210	NR										
2314	Smoked salmon (sliced)	100	28	0.280	NR										
2331	Smoked fish	15	2	0.133	NR										
2389	Smoked fish	76	3	0.039	Q[(d;c1)],SQ										1.3

CFU: colony forming units; MPN: most probable number; N: number of samples taken; NR: not reported; RTE: ready-to-eat, Q: quantitative; SQ: semi-quantitative; s: number of positive samples.

(a): Full references listed in Appendix E.

(b): In bold intervention studies reporting prevalence of *Listeria monocytogenes* diferent than zero and comparable with a reference treatment.

(c): Semi-quantitative levels in a range/level different from those specified in the previous columns. Range/level, number of cases is indicated. Different semi-quantitative values for the same RefID are separated by semicolons.
(d): Concentration levels c1=110 CFU/g.

Table D. 11: Prevalence and levels of *Listeria monocytogenes* in dairy products

						Semi-quantitative levels									
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
	Butter														
1078	Butter	616	160	0.260	NR										
1235	Butter	10	0	0.000	NR										
1805	Butter	3175	13	0.004	SQ							13		CFU/g	0
1874	Butter	20	0	0.000	NR										
1895	Butter	419	0	0.000	NR										
2012	Butter	42	0	0.000	NR										
2261	Butter	10	0	0.000	NR										
1316	Butter	4	0	0.000	NR										
1424	Butter	64	12	0.188	NR										
1823	Butter	878	0	0.000	NR										
	Cheese														
255	Cheese (pasteurised)	624	14	0.022	NR										
494	White chesees	100	1	0.010	NR										
494	Tulum cheeses	100	1	0.010	NR										
910	Cheese creations	3	0	0.000	NR										
964	Ricotta salata	33	7	0.212	NR										
1078	Cheese	459	12	0.026	NR										
1196	Several cheese varieties (Small scale producer)	206	7	0.034	NR										
1220	Semi hard Idiazabal cheese (vacuum packaged)	51	0	0.000	NR										
1223	Cheese	66	9	0.136	NR										
1225	Graviera cheese (diferent packaging types)	120	0	0.000	NR										
1229	Cheese (sheep)	28	0	0.000	NR										
1235	White cheese (ripened)	85	2	0.024	NR										
1252	Cheese (soft and hard)	189	0	0.000	NR										
1316	Cheese (several types)	62	3	0.048	NR										
1323	Cheeses	13,858	148	0.011	NR										
1326	Cheeses	209	0	0.000	SQ										0
1344	Cheese (several types)	89	3	0.034	NR										

						Semi-quantitative levels								
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
1380	Tulum cheese	250	12	0.048	NR										
1424	Cheese	16	0	0.000	NR										
1434	Cheese	14	5	0.357	NR										
1486	Herbed cheeses	50	4	0.080	NR										
1505	Feta Cheese	10	0	0.000	NR										
1519	Cheese	44	0	0.000	NR										
1544	Cheese (molle, cagliata, con muffa in superficie, semiduro, fuso, a pasta filata)	71	0	0.000	NR										
1588	Cheese (cows hard, goats, ewes)	683	24	0.035	NR										
1600	Van otlu (semi-hard cheese)	30	9	0.300	NR										
1600	Carra (herby) (semi-hard cheese)	30	14	0.467	NR										
1600	Konya kuflu (semi-hard cheese)	30	7	0.233	NR										
1600	Urfa tulum (semi-hard cheese)	30	4	0.133	NR										
1708	Processed cheese	70	1	0.014	NR										
1708	Dil cheese	45	0	0.000	NR										
1708	Kasar cheese	60	1	0.017	NR										
1743	Cheese (including cottage cheese)	236	19	0.081	NR										
1749	San Jorge cheese	66	0	0.000	NR										
1823	Spreadable cheese	725	0	0.000	NR										
1833	Valdeón blue cheese	11	0	0.000	NR										
1862	Cheese from Asturias (short ripened)	101	9	0.089	NR										
1898	Cheese	16	NR		SQ										0
1906	Cheese (from pasteurized milk)	371	6	0.016	NR										
1932	Arzua-Ulloa cheese (raw-milk)	57	NR		SQ										12.3
1932	Arzua-Ulloa cheese (pasteurized-milk)	67	NR		SQ										1.5
1932	Arzua-Ulloa cheese (organic pasteurized-milk)	60	NR		SQ										0
2003	Farmhouse cheese	351	21	0.060	SQ										3

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[(c)] (level, n)	Units	% >100
2012	Cheese	42	3	0.071	NR										
2052	Pasta filata cheese (mozzarella, scamoza, etc)	25	2	0.080	NR										
2064	Tenerife cheese	36	6	0.167	NR										
2080	Sheep's cheese (pasteurized milk)	6	0	0.000	NR										
2080	Sheep's cheese (raw milk)	5	1	0.200	NR										
2101	Raw-milk cheese	30	0	0.000	NR										
2101	Mixed-milk (raw and pasteurized) cheeese	19	1	0.053	NR										
2107	Raw milk ripened cheese	11	0	0.000											
2134	Cheese (produced in farm dairies)	151	0	0.000	NR										
2136	Blue-veined cheese	6	0	0.000	NR										
2261	Cheese (kashar, white and curd)	42	0	0.000	NR										
2299	Cheese (raw milk, not prepackaged)	15	7	0.467	NR										
2299	Cheese (pasteurized milk, not prepackaged)	10	6	0.600	NR										
2299	Cheese (pasteurized milk, prepackaged)	1	0	0.000	NR										
2327	Sheep milk cheese	27	0	0.000	NR										
2387	Cheese or cheese products	73	NR		SQ	14						59			0
	Cream														
1223	Fresh cream (pasteurised)	4	1	0.250	NR										
1326	UHT cream	45	0	0.000	SQ										0
1522	Domestic cream of raw milk	60	7	0.117	NR										
1588	Cows cream (raw and pasteurized)	88	2	0.023	NR										
2006	Fresh cream	4	0	0.000	NR										
	Fresh cheese														
1206	Whey cheese	6	0	0.000	NR										
1311	Curd and mozzarella cheese (from water buffalo milk)	40	0	0.000	NR										
1326	Fresh cheese	78	1	0.013	SQ										0

						Semi-quantitative levels								
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
1409	Burrata cheese	404	0	0.000	NR										
1423	Fresh cheeses	8	1	0.125	SQ										0
1443	Mozzarella	186	0	0.000	SQ										0
1522	Domestic fresh cheese	60	4	0.067	NR										
1544	Fresh cheese	17	0	0.000	NR										
1681	Farm fresh goat's cheese (with and without herbs)	44	0	0.000	NR										
1708	White cheese	105	5	0.048	NR										
1742	Cottage and curd cheese	21	0	0.000	NR										
1822	Unripened soft (fresh) cheese (raw, thermized or pasteurized milk)	474	2	0.004	SQ										0
1845	Monte Veronese cheese (fresh)	7	0	0.000	NR										
1882	Fresh soft cheese	48	6	0.125	NR										
1906	Fresh cheese	50	2	0.040	NR										
1961	Vastedda cheese (brine salted and unsalted) 30 days storage	12	0	0.000	NR										
2016	Cameros cheese	18	1	0.056	NR										
2046	Pichtogalo Chanion cheese	62	4	0.065	NR										
2052	Fresh cheese	15	1	0.067	NR										
2052	Ricotta	30	0	0.000	NR										
2078	Mozzarella	29	4	0.138	NR										
2078	Several fresh cheeses (robiola, crescenza, mascarpone, ricotta and tonino)	32	1	0.031	NR										
2107	Raw milk Fresh cheese	31	8	0.258	Q^{c1}										
2120	Queijo fresco	8	0	0.000	NR										
2327	Fresh cheese	25	1	0.040	NR										
2388	Fresh cheese	36	0	0.000	NR										
	Hard/firm cheese														
859	Raw sheep milk cured cheese (ISO11290-1)	43	0	0.000	NR										
859	Raw sheep milk cured cheese (SureTect)	43	1	0.023	SQ						0			CFU/g	

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[(c)] (level, n)	Units	% >100
876	Sharri cheese (hard mountain cheese)	12	0	0.000	NR										
910	Semi hard/hard ripened cheese	33	1	0.030	SQ							1		CFU/g	
964	Pecorino Romano rind	50	3	0.060	NR										
1195	Hard cheese	13	NR		SQ										0
1206	Hard cheese	10	0	0.000	NR										
1379	Mihalic cheese	100	5	0.050	NR										
1423	SEmi-hard (mold ripened) and hard cheeses	8	0	0.000	SQ										0
1505	Hard cheese	10	0	0.000	NR										
1554	Pecorino Siciliano "primosale" cheese	50	0	0.000	SQ										0
1596	Hard and semi-hard cheeses sold loose	34	0	0.000	NR										
1596	Hard and semi-hard cheeses sold wrapped	34	8	0.235	NR										
1742	Hard-cheese	14	0	0.000	NR										
1822	Semi-hard cheese (raw, thermized milk)	951	8	0.008	SQ										0.1
1822	Semi-hard cheese (pasteurized milk)	584	2	0.003	SQ										0
1823	Hard cheese	1242	2	0.002	SQ								>0.04-10,2	CFU/g	0
1845	Monte Veronese cheese (ripened)	7	0	0.000	NR										
1953	Cheese (Grana Padano, Manchego, Montasio, Parmigiano)	50	0	0.000	NR										
1954	Toma cheese	62	0	0.000	NR										
1961	Vastedda cheese (brine salted and unsalted) 60 days storage	12	0	0.000	NR										
2052	Ripened cheese	44	0	0.000	NR										
2097	Asiago and Crescenza	886	2	0.002	SQ								<0.36,2	MPN/g	0
2139	Red smear cheese (hard)	45	1	0.022	SQ							1		CFU/g	0
2154	Hard artisanal farmhouse cheeses	38	0	0.000	NR										
2161	Graviera cheese (raw milk)	18	0	0.000	NR										

						Semi-quantitative levels								
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
2161	Graviera cheese (pasteurized milk)	18	0	0.000	NR										
2175	Pecorino cheese	12	0	0.000	NR										
2176	Pecorino di Farindola cheese	10	0	0.000	NR										
2261	Mihalic cheese	18	1	0.056	NR										
2388	Hard and semi-hard cheeses	11	0	0.000	NR										
	Ice cream														
153	Dairy products (42 raw milk,140 cheese,11 butter,2 yoghurt,1 cream)	196	0	0.000	NR										
255	Ice cream	758	6	0.008	NR										
1078	Ice cream	76	1	0.013	NR										
1223	Ice crream	14	1	0.071	NR										
1323	Ice creams	1734	5	0.003	NR										
1326	Ice cream	82	0	0.000	SQ										0
1424	Ice-cream	7	1	0.143	NR										
1615	Ice cream	89	0	0.000	NR										
1743	Ice cream	613	18	0.029	NR										
1853	Artisanal ice cream	396	0	0.000	NR										
1882	Ice cream	21	1	0.048	NR										
1898	Ice cream	174	NR		SQ										0
2006	Ice-creams	34	0	0.000	NR										
2085	Ice cream	40	0	0.000	NR										
2261	Ice cream	20	0	0.000	NR										
2280	Ice cream	30	0	0.000	NR										
2331	Ice cream	37	0	0.000	NR										
2344	ice cream (unwrapped varieties)	125	1	0.008	NR										
	Milk														
56	Raw milk (cow)	72	3	0.042	Q^{c2}										
268	Cow's raw milk	50	1	0.020	NR										
268	Sheep's raw milk	75	2	0.027	NR										
268	Goat's raw milk	15	0	0.000	NR										
484	Raw cow milk	14	NR		SQ								<1,14	CFU/mL	0

						Semi-quantitative levels								
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
830	Raw cow milk	50	1	0.020	NR										
1185	Raw milk (cow)	100	1	0.010	NR										
1185	Pasteurized milk (cow)	20	1	0.050	NR										
1229	Milk (sheep)	106	0	0.000	NR										
1235	Milk	47	0	0.000	NR										
1252	Milk (raw, cow)	158	0	0.000	NR										
1291	Raw milk (farm)	289	5	0.017	NR										
1291	Raw milk (vending machines)	320	5	0.016	NR										
1311	Water buffalo milk (raw)	20	0	0.000	NR										
1311	Water buffalo milk (pasteurized)	20	0	0.000	NR										
1316	Milk (raw)	17	0	0.000	NR										
1316	Milk (pasteurized and UHT)	8	0	0.000	NR										
1320	Milk (pasteurized)	3000	3	0.001	NR										
1323	Milk and cream	3182	19	0.006	NR										
1344	Milk (pasteurized)	80	0	0.000	NR										
1424	Raw milk	143	9	0.063	NR										
1505	Pasteurized milk	10	0	0.000	NR										
1522	Domestic raw milk	60	6	0.100	NR										
1544	Milk (raw)	85	0	0.000	NR										
1544	Milk (pasteurised)	7	0	0.000	NR										
1551	Raw milk	15181	83	0.005	NR										
1552	Raw milk	99	1	0.010	NR										
1588	Milk (cow and goat, raw and pasteurized)	1936	29	0.015	NR										
1596	Raw milk (sheep, cow, goat)	212	5	0.024	NR										
1615	Raw milk	176	27	0.153	NR										
1615	Pasteurized milk	147	1	0.007	NR										
1727	Milk (raw, cow)	18	4	0.222	NR										
1727	Milk (pasteurized, cow)	18	0	0.000	NR										
1743	Raw milk	252	29	0.115	NR										
1743	Pasteurized milk	935	11	0.012	NR										
1820	Unpasteurized goat's and ewe's milk	126	0	0.000	NR										

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[(c)] (level, n)	Units	% >100
1874	Raw milk	40	0	0.000	NR										
1882	Raw milk	32	1	0.031	NR										
1906	Raw milk	6	1	0.167	NR										
1906	Pasteurized milk	28	0	0.000	NR										
1955	Bovine raw milk	176	0	0.000	NR										
1975	Pasterurized milk	20	1	0.050	NR										
2006	Flavoured milk	6	0	0.000	NR										
2184	Goat raw milk	160	0	0.000	NR										
2226	Room-temperature milk	95	0	0.000	NR										
2226	Warm milk	95	0	0.000	NR										
2261	Pasteurised milk	10	0	0.000	NR										
2314	Cow milk (raw)	340	23	0.068	NR										
2314	Sheep milk (raw)	202	6	0.030	NR										
382	Cream cheese	18	1	0.056	NR										
	Other dairy products														
571	Dairy products	100	3.9	0.039	NR										
1078	Yogurt	202	9	0.045	NR										
1235	Yoghurt	15	0	0.000	NR										
1311	Whey (from water buffalo milk)	20	0	0.000	NR										
1311	Yoghurt (from water buffalo milk)	20	0	0.000	NR										
1326	Yoghurt	48	0	0.000	SQ										0
1379	Hosmerim dessert	100	3	0.030	NR										
1424	Yougurt	9	0	0.000	NR										
1443	Cream Cheese	108	2	0.019	SQ										0
1505	Yoghurt	10	0	0.000	NR										
1542	Dairy products	549	10	0.018	NR										
1588	Yoghurt and ice cream	330	7	0.021	NR										
1615	Dairy products (pasteurized cream, yoghurt, buttermilk, butter, UHT milk)	71	0	0.000	NR										
1742	Butter and whipped cream	5	1	0.200	NR										

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels									
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>100,000-1,000,000	>10	<10	Other[(c)] (level, n)	Units	% >100
1742	Other dairy (raw mixed milk and sheep cheese)	8	0	0.000	NR										
1743	Cream, sour cream and butter	220	11	0.050	NR										
1757	Milk, cheese, butter, fermented milk products	117	0	0.000	NR										
1758	Yogurt	8	0	0.000	NR										
1758	Cream	2	0	0.000	NR										
1766	Home-made milk and dairy products	112	15	0.134	NR										
1782	Dairy products (not specified)	29	0	0.000	NR										
1788	Milk and cheese	2498	27	0.011	NR										
1806	Yoghurts	5	0	0.000	NR										
1900	Custard slices	254	NR		SQ										0
1915	Dairy products (butter and cheese (ricotta, mozzarella, erborinati among others)	494	40	0.081	NR										
1975	Final products (dairy)	200	0	0.000	NR										
2226	Dairy products (crème caramel, custard, mousse, puding)	75	0	0.000	NR										
2280	Dairy products (not specified)	31	0	0.000	NR										
2388	Yoghurts	5	0	0.000	NR										
	Soft/semisoft cheese														
910	Soft cheese-mould	50	0	0.000	NR										
910	Soft cheese-red smear	22	1	0.045	Q[c3]										
1187	Soft cheese	120	6	0.050	NR										
1190	Soft cheese (fresh cheese, pasteurized milk) ISO method	100	2	0.020	SQ										0
1190	Soft cheese (fresh cheese, pasteurized milk) PCR method	100	7	0.070	SQ										4
1195	Soft cheese	35	NR		Q[c4],SQ	1	1							CFU/g	1
1196	Semihard raw ovine cheese (Artisanal producer)	81	11	0.136	NR										
1196	Semi hard pasteurized cow milk (industrial producer)	2500	5	0.002	NR										
1206	Semi-hard cheese	14	0	0.000	NR										

						Semi-quantitative levels									
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
1206	Soft cheese	12	0	0.000	NR										
1207	Soft cheeses (whey, acid curd and interior mold-ripened cheeses)	137	0	0.000	SQ										0
1221	Homemade white chesse	142	0	0.000	NR										
1397	Soft and semi-soft cheeses	17	0	0.000	NR										
1423	Soft redsmear cheeses	14	1	0.071	SQ										0
1423	Blue veined cheeses	8	0	0.000	SQ										0
1423	Soft-mold ripened cheeses	33	0	0.000	SQ										0
1505	Soft Cheese	10	4	0.400	NR										
1544	Cheese (erborinato)	25	2	0.080	NR										
1588	Soft cheese (ripened and not ripened, cow)	1135	67	0.059	NR										
1615	Soft cheese	33	0	0.000	NR										
1742	Soft cheese	15	0	0.000	NR										
1758	Feta cheese	19	1	0.053	NR										
1758	White cheese	17	0	0.000	NR										
1781	Mould-ripened cheese	456	2	0.004	SQ								<10 - >10^4, 2		0
1781	Smear-ripened cheese	62	0	0.000	NR										
1798	Farmhouse ewe's cheese	51	17	0.333	NR										
1806	Soft cheese	20	4	0.200	NR										
1822	Ripened soft cheese (raw, thermized milk)	806	8	0.010	SQ										0
1822	Ripened soft cheese (pasteurized milk)	1622	1	0.001	SQ										0
1826	Soft cheese, semisoft cheese, cream cheese, and cheese spreads	121	15	0.124	NR										
1827	Soft and semi-soft cheeses (whole or pre-cut, raw an thermally treated milk)	333	20	0.060	SQ		2	2	1					CFU/g	25
1844	Soft cheese	251	1	0.004	NR										
1855	Gorgonzola cheese (after packaging)	1489	31	0.021	NR										
1855	Gorgonzola cheese (after packaging)	167	8	0.048	NR										

						Semi-quantitative levels									
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
1871	Soft cheese	26	3	0.115	NR										
1872	Soft cheese	35	0	0.000	NR										
1874	Soft cheese (very short ripening)	54	0	0.000	NR										
1874	Soft cheese (few weeks ripening and thin rind)	67	2	0.030	NR										
1886	Halloumi cheese (full-fat soft unripened)	49	28	0.571	SQ					1		22	>1x10^6,1; >1x10^7,4	CFU/g	21.4
1895	Soft-cheese	473	0	0.000	NR										
1908	Tetilla (raw cow's milk chese)	24	2	0.083	NR										
2013	White cheese (not pre-packaged)	70	4	0.057	NR										
2013	White cheese (pre-packaged)	30	0	0.000	NR										
2067	Fresh soft cheese	258	9	0.035	NR										
2076	Soft cheese (raw ewe's milk)	63	29	0.460	NR										
2078	Gorgonzola	58	3	0.052	NR										
2078	Taleggio	45	0	0.000	NR										
2097	Brie	300	3	0.010	SQ								<0.36-110,3	MPN/g	
2097	Camembert	178	0	0.000	NR										
2097	Gorgonzola	444	21	0.047	SQ								<0.36-9.3,21	MPN/g	0
2097	Taleggio	324	21	0.065	SQ								<0.36-460,21	MPN/g	
2120	Camembert	8	1	0.125	NR										
2120	Queijo Serra das Estrelas	8	2	0.250	NR										
2120	Queijo Flamenco	8	0	0.000	NR										
2132	Soft cheese (imported, 90% cut from large pieces)	90	10	0.111	SQ								>1000, 4	CFU/g	
2136	Soft cheese	5	0	0.000	NR										
2138	Acid curd cheese (e.g. harzer, mainzer)	41	2	0.049	SQ							2		CFU/cm^2	
2139	Red smear cheese (soft and semi-soft)	284	20	0.070	SQ	1	3	2	1	1		12			35
2157	Galotory cheese (industrial)	6	1	0.167	SQ							6		CFU/g	0
2157	Galotory cheese (artisanal)	6	2	0.333	SQ							6		CFU/g	0

						Semi-quantitative levels									
RefID[(a)]	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>100,000-1,000,000**	**>10**	**<10**	**Other[(c)] (level, n)**	**Units**	**% >100**
2162	La Serena cheese	11	0	0.000	NR										
2264	Pre-packaged Greek whey cheeses (Manouri, Anthotyros, Myzithra)	167	26	0.156	Q[c5]										
2314	Soft cheese	99	1	0.010	NR										
2327	Soft cheese	200	11	0.055	NR										
2344	Soft matured cheese	122	5	0.041	NR										
2388	Soft cheeses	31	0	0.000	NR										

CFU: colony forming units; N: number of samples taken, NR: not reported; Q: quantitative; SQ: semi-quantitative; s: number of positive samples, UHT: ultra high temperature.

(a): Full references listed in Appendix E.

(b): Concentration levels c1=4000 CFU/g, c2=7 CFU/mL, c3=9500 CFU/g, c4=30 & 200 CFU/g, c5=20.9 CFU/g.

(c): Semi-quantitative levels in a range/level different from those specified in the previous columns. Range/level, number of cases is indicated. Different semi-quantitative values for the same RefID are separated by semicolons.

Table D. 12: Prevalence and levels of *Listeria monocytogenes* in produce

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels				Other[(c)] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	<10			
	Fruits											
1172	Fresh-cut fruit	21	0	0.000	SQ							0
1516	Mixed fruit salad	80	3	0.038	NR							
1516	Melon	80	0	0.000	NR							
1542	Fresh fruit	83	0	0.000	NR							
1698	Strawberries	173	1	0.006	NR							
1821	Pre-cut RTE fruit	997	78	0.078	SQ		1			<20,76; 20-100,1	CFU/g	0.1
1900	Dried fruits	555	NR		SQ							0
2327	Fruits	11	0	0.000	NR							
2327	Dried fruits	8	0	0.000	NR							
	Leafy_vegetables											
153	Raw leafy greens	44	6	0.136	NR							
388	Rocket	100	7	0.070	NR							
600	Fresh leafy greens (sold in bulk packaging)	1372	17	0.012	NR							
600	RTE leafy greens (fresh cut sold in packets)	1160	4	0.003	NR							
793	RTE lettuce (cold season)	20	2	0.100	NR							
793	RTE lettuce (warm season)	10	0	0.000	NR							
1335	RTE salads	579	0	0.000	NR							
1405	Broad-leaved endive	8	0	0.000	NR							
1405	Rocket salad	8	0	0.000	NR							
1418	Fresh RTE vegetables	699	0	0.000	NR							
1441	RTE salad vegetables (leafy vegetables)	20	1	0.050	NR							
1616	Products included in "other" category	-	-		NR							
1635	Mixed chicory salad (radicchio, sugar loaf, curled endive)	9	0	0.000	NR							
1635	Mix of lettuce and herbs (butterhead lettuce, parsley, chive)	9	0	0.000	NR							
1698	Pre-cut salad (lettuces)	100	0	0.000	NR							
1698	Growing herbs	130	0	0.000	NR							
1698	Pre-cut parsley and dill	100	0	0.000	NR							
1762	Iceberg lettuces	24	0	0.000	NR							
1762	Leafy vegetables (rocket, lamb's lettuce, chicory)	11	0	0.000	NR							

RefID[a]	Product	n	s	Prevalence	Levels	Semi-quantitative levels				Other[c] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	<10			
1762	Cabbages	19	1	0.053	NR							
1895	Green salad	335	3	0.009	SQ					10,1	CFU/g	0
1898	Coleslaw	226	NR		SQ							0
1898	Prepared mixed salads	224	NR		SQ							0
2006	Salad (leaves)	9	0	0.000	NR							
2023	Salad of chicken doner kebab	42	1	0.024	NR							
2123	Lettuce salads	75	0	0.000	NR							
2124	Lettuce salads	22	0	0.000	NR							
2224	RTE lettuce	10	1	0.100	NR							
2224	RTE spinach	10	0	0.000	NR							
2327	Produce	33	0	0.000	NR							
2331	Pre-prepared salads/coleslaw	34	0	0.000	NR							
	Other vegetables											
130	Potato gateau	22	6	0.273	NR							
130	Cooked vegetables	8	0	0.000	NR							
142	Fresh produce (unprocessed and minimally processed)	125	1	0.008	SQ					<1,1	log CFU/g	0
388	Cucumber	100	6	0.060	NR							
533	Pre-cut fresh vegetables and fruits	23	NP		SQ							0
571	Produce	100	9.4	0.094	NR							
764	Salad preparations	48	0	0.000	NR							
873	Minimally processed fresh-cut samples (rocket, mixed salad and melon) (ISO11290-1 and MPN))	NR	0		SQ					<0.03	MPN/g	
1113	Minimally processed packaged salads (end of production)	781	0	0.000	NR							
1113	Minimally processed packaged salads (retail)	1151	0	0.000	NR							
1172	Fresh cut vegetables (pre-packaged)	236	2	0.008	Q[(b,c1)],SQ							0.38
1172	Sprouts (soybean and alfalfa)	15	0	0.000	SQ							0
1240	Sprouts	39	0	0.000	NR							
1516	Fresh-cut vegetables	560	66	0.118	NR							
1698	Mushrooms	156	1	0.006	NR							
1762	Root vegetables	6	0	0.000	NR							
1821	Sprouted seeds	808	28	0.035	SQ		1			<20,27	CFU/g	0.12
1900	Vegetarian pâté	28	NR		SQ							0
1906	Frozen vegetables	271	35	0.129	NR							

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels				Other[(c)] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	<10			
1987	Vegetable based pâté	231	6	0.026	SQ			1		<200,5	CFU/g	0.4
2013	Parsley	100	2	0.020	NR							
2124	Tomato salads	6	0	0.000	NR							
2191	Sous vide vegetables (broccoli, courgette, potato, carrot)	12	0	0.000	NR							
2314	Frozen vegetables	1750	31	0.018	NR							
2327	Spices and sprouts	28	0	0.000	NR							
2327	Seeds	7	0	0.000	NR							
2387	Sprouts or sliced vegetables	350	NR		SQ	80			268		CFU/g	0.5
	Several produce											
1240	RTE vegetables (individual ingredients)	78	0	0.000	NR							
1240	Mixed salads	42	2	0.048	NR							
1244	RTE raw fruit and vegetables	65	0	0.000	NR							
1261	RTE salads (delicatessen salads and pre-cut mixed salads)	80	1	0.013	NR							
1333	RTE salads	50	0	0.000	NR							
1441	RTE salad vegetables (leafy vegetables and carrot)	20	0	0.000	NR							
1476	Salads	116	3	0.026	NR							
1505	RTE salads	50	0	0.000	NR							
1535	RTE mixe vegetable salads	70	21	0.300	NR							
1542	Fresh vegetables	180	1	0.006	NR							
1596	RTE vegetables (soya roots, watermelon, herbs, mixed salads)	23	0	0.000	NR							
1638	RTE salad vegetables (Heads of iceberg lettuce, cucumber, tomato, mustard, cress)	33	0	0.000	NR							
1762	Mixed vegetables	17	0	0.000	NR							
1782	Pre-packaged RTE vegetables	18	0	0.000	NR							
1806	Salads (including mushrooms, with and without dressing)	11	0	0.000	NR							
1821	Unpasteurized fruit and vegetable juices	291	2	0.007	SQ					<20,2	CFU/g	0
1871	Raw vegetables ready for consumption	182	0	0.000	NR							
1872	Raw vegetables ready for consumption	52	1	0.019	NR							
1898	Fruit and vegetables (fresh)	1260	NR		SQ							0
1898	Fruit and vegetables (dry)	29	NR		SQ							0
1903	Pre-packaged mixed salads	50	1	0.020	NR							
2072	Mixed RTE vegetable salads	56	0	0.000	NR							
2124	Mixed salads	8	0	0.000	NR							

RefID[(a)]	Product	n	s	Prevalence	Levels	Semi-quantitative levels				Other[(c)] (level,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	<10			
2146	Open RTE salad vegetables	2807	88	0.031	Q[(b;c2)],SQ		1				CFU/g	0
2147	RTE bagged salad vegetables	3677	88	0.024	SQ		1			20-<100,1		0
2169	Packaged minimally processed leafy salads	151	1	0.007	SQ					<100,1	CFU/g	0
2218	Green salad	20	6	0.300	NR							

CFU: colony forming units; N: number of samples taken, NR: not reported; Q: quantitative; SQ: semi-quantitative; s: number of positive samples.

(a): Full references listed in Appendix E

(b): Concentration levels c1=130 and <100 CFU/g, c2=840 CFU/g

(c): Semi-quantitative levels in a range/level different from those specified in the previous columns. Range/level, number of cases is indicated. Different semi-quantitative values for the same RefID are separated by semicolons.

Table D. 13: Prevalence and levels of *Listeria monocytogenes* in composite food and other type of products

RefID (a)	Product	n	s	Prevalence	Levels	Semi-quantitative levels								
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>10	<10	Other(c) (value,n)	Units	% >100
	Composite Food													
126	Sandwiches with cheese	80	0	0.000	NR									
126	Sandwiches with soudjouk	80	0	0.000	NR									
126	Sandwiches with cheese, soudjouk and salad	60	1	0.017	NR									
126	Sandwiches with cheese and soudjouk	50	0	0.000	NR									
130	Rice	16	1	0.063	NR									
130	Pasta	28	0	0.000	NR									
137	Hotdog/hamburguer	20	4	0.200	NR									
381	Salads	261	15	0.057	NR									
382	Cooked meals	18	6	0.333	NR									
382	Sandwiches	18	4	0.222	NR									
382	Cakes	18	1	0.056	NR									
533	RTE sauces with raw materials	12	NP		SQ									5
533	RTE refrigerated foods	29	NP		SQ									0
533	Sandwiches	29	NP		SQ									1
533	Salads	29	NP		SQ									4
534	Composed meals (Ardennes egg, Veal stew with hot vegetables and potatoes, Meat escalope with hot vegetables and rice, fresh mixed fruit meal (3x), tuna salad, chicken salad, meat loaf with hot vegetables and potatoes, tomato salsa)	9	1	0.111	SQ									0
1030	Mayonnaise-based salad	25	1	0.040	NR									
1030	Ezme (Turkish style tomato dip/condiment)	25	2	0.080	NR									
1030	Fried spiced liver	25	1	0.040	NR									
1030	Stuffed mussles	25	0	0.000	NR									
1078	Desserts (Tiramisu and chocolate mousse made with raw eggs)	99	0	0.000	NR									
1206	Various RTE packaged salads	7	0	0.000	NR									
1206	Sandwiches	12	0	0.000	NR									
1228	Fresh sushi (nigiri and maki)	125	0	0.000	NR									
1228	Frozen sushi (nigiri and maki)	125	0	0.000	NR									
1244	RTE fully cooked food for immediate consumption	266	0	0.000	NR									

RefID (a)	Product	n	s	Prevalence	Levels	Semi-quantitative levels								
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>10	<10	Other(c) (value,n)	Units	% >100
1244	RTE fully cooked food with minimum further handling	229	0	0.000	NR									
1244	RTE multi-ingredient preparations	213	0	0.000	NR									
1274	Summer salad	25	NR		Q(b;c1),SQ									4
1274	Russian type salad	24	NR		SQ									0
1274	Valencian salad	28	NR		Q(b;c3),SQ									7.1
1323	Gastronomy products	1097	18	0.016	NR									
1326	Frozen canelloni	73	11	0.151	Q(b;c2),SQ									1.4
1326	Frozen lasagna	15	0	0.000	SQ									0
1326	Refrigerated potato omelet	10	0	0.000	SQ									0
1326	Spanish sweet custard	15	0	0.000	SQ									0
1326	Spanish custard cream	10	0	0.000	SQ									0
1332	Meals (Heat treated and non-heat treated)	898	0	0.000	NR									
1346	Traditional Chinese preparations (starters, courses and dressings)	118	0	0.000	NR									
1348	Meals	894	0	0.000	SQ									0
1407	Cooked chilled food	135	0	0.000	SQ									0
1426	Foods intended for consumption without cooking (salads and sauces)	182	17	0.093	SQ		1	3				0.04-100,12	CFU/g	2.2
1426	Cooked foods intended to receive further cooking prior to consumption (poultry, seafoods, vegetables, omelettes, pasta, soups)	918	27	0.029	SQ		2	2				0.04-100,20	CFU/g	2.6
1443	Pastries	392	4	0.010	SQ									0
1443	Mayonnaise-basad deli salad	115	31	0.270	SQ									0
1450	Fish dishes	248	46	0.185	SQ	45	1							0.4
1450	Salad dishes	932	45	0.048	SQ	45								0
1450	Egg dishes	288	63	0.219	SQ	63								0
1450	Cold meat dishes	120	6	0.050	SQ	5	1							0.8
1450	Mayonnaise dishes	674	48	0.071	SQ	48								0
1476	Abugannus (eggplant salad)	30	2	0.067	NR									
1476	RTE foods (hummus, walnuts and red pepper, parsley salads, thyme salads, broad bean salad, traditional salted yoghurt)	93	0	0.000	NR									
1504	Confectionery pastries (filled with butter-cream, whipped dairy cream and custard)	300	41	0.137	NR									

RefID (a)	Product	n	s	Prevalence	Levels	Semi-quantitative levels				>10	<10	Other(c) (value,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000					
1542	Delicatessen products	96	5	0.052	NR									
1542	Confectionery products	108	1	0.009	NR									
1639	Precooked chilled foods (meat)	1856	105	0.057	NR									
1639	Precooked chilled foods (other)	2549	49	0.019	NR									
1690	Meat meals	72	9	0.125	NR									
1742	Buffet meals	55	4	0.073	NR									
1758	Frozen pastries	67	10	0.149	NR									
1758	Teramosalata	3	0	0.000	NR									
1758	Dessert (oven baked)	14	0	0.000	NR									
1758	Dessert with dairy cream	18	6	0.333	NR									
1758	Sandwiches	109	8	0.073	NR									
1759	Sandwiches	65	5	0.077	NR									
1759	Desserts (oven baked)	28	0	0.000	NR									
1759	Desserts (with dairy cream)	15	3	0.200	NR									
1759	Oven baked pastries	52	2	0.038	NR									
1759	Frozen pastries (ready to bake)	46	4	0.087	NR									
1762	Delicatessen salads	23	0	0.000	NR									
1782	Regrigerated products (Salads (with sauce, with seafood, with vegetables), pesto, precooked products (potato, corn and beetroot)	28	0	0.000	NR									
1819	Sandwiches	3249	88	0.027	SQ						87	20,1		0
1823	Sandwiches	1088	76	0.070	SQ	9						>0.04-10,63; >100,4	CFU/g	0.4
1823	Confectionery	515	4	0.008	SQ							>0.04-10,4	CFU/g	0
1824	Mixed salad with meat	1268	76	0.060	SQ	1	2				73		CFU/g	0.16
1824	MIxed salad with seafood	1418	54	0.038	SQ	1					53		CFU/g	0
1844	Cook chill meals	75	9	0.120	NR									
1871	First and second courses (cooked ready for consumption)	462	0	0.000	NR									
1871	Multi-ingredients preparations (cooked and uncooked ready for consumption)	182	0	0.000	NR									
1872	Fully cooked foods	195	0	0.000	NR									
1872	Fully cooked food with minimum handling prior to consumption	102	0	0.000										

						Semi-quantitative levels								
RefID (a)	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>10**	**<10**	**Other**(c) **(value,n)**	**Units**	**% >100**
1872	Multi-ingredients preparations (cooked and uncooked foods ready for consumption)	11	0	0.000	NR									
1895	Pasta- and rice-based salads	404	15	0.037	NR									
1895	Sandwiches	1643	86	0.052	NR									
1895	Sushi	50	1	0.020										
1897	RTE meals served in schools	2351	0	0.000	NR									
1898	Meat meal, meat pies, pork pies, sausage roll, quiche	2208	NR		SQ									0
1898	Cakes without dairy cream	808	NR		SQ									2.9
1898	Sandwiches with salad	1662	NR		SQ									0.5
1898	Sandwiches without salad	2273	NR		SQ									0.4
1898	Sandwiches with cheese	42	NR		SQ									0
1898	Cakes with dairy cream, cooked rice, pizza, pasta, RTE meals, sandwiches with cheese	1453	NR		SQ									0
1899	Sandwiches (in retailers)	588	26	0.044	SQ							>20,5	CFU/g	
1899	Sandwiches (in hospitals)	950	27	0.028	SQ							>20,2	CFU/g	
1900	Cream cakes	433	NR		SQ									0
1900	Egg mayonnaise sandwiches	475	NR		SQ									0.4
1900	Kebab	13	NR		SQ									0
1900	Pastry (meat)	515	NR		SQ									0
1900	Pastry (vegetarian)	126	NR		SQ									0
1900	Sausage rolls	350	NR		SQ									0
1906	Pastry	73	3	0.041	NR									
1963	Seafood salad	42	2	0.048	SQ							<100,2	CFU/g	0
2006	Desserts (cake, trifle, custard)	16	0	0.000	NR									
2006	Sandwiches (chicken)	6	1	0.167	NR									
2006	Sandwiches (egg salad, tuna, ham)	5	0	0.000										
2006	Several products (quiche, sauce, lasagna, noodles, etc.)	25	0	0.000										
2012	Baked potatoes (with butter and cheese)	38	0	0.000	NR									
2029	Cooked and warm-served products	74	0	0.000	NR									
2029	Cooked and cold-served products	92	0	0.000	NR									
2029	Cold gastronomy products	63	0	0.000	NR									
2067	Ready salads	162	2	0.012	NR									

RefID (a)	Product	n	s	Prevalence	Levels	Semi-quantitative levels				>10	<10	Other(c) (value,n)	Units	% >100
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000					
2067	Sandwiches	119	7	0.059	NR									
2080	Paris salad	5	1	0.200	NR									
2124	Rice salads, bean salads, amyonnaise-based salads	6	0	0.000	NR									
2218	Mayonnaise based salad (boiled potatoes, carrots and peas)	20	4	0.200	NR									
2218	Kadinbudu kofte (meat meal)	20	0	0.000	NR									
2218	Rice stuffed mussel	20	0	0.000	NR									
2224	Spanish potato omelette	19	0	0.000	NR									
2225	Cereal-, vegetable-, legume- and fruit-based dishes	781	0	0.000	NR									
2280	Toppings for fast food	39	0	0.000	NR									
2280	Heat treated meat meals of fast food	37	0	0.000	NR									
2285	Cakes and pastry with cream and fruits	283	12	0.042	NR									
2294	Mayonnaise-based deli-salads	1187	80	0.067	SQ									0
2296	Salads (meat, fish, fish&shrimp,other)*	874	186	0.213	SQ					22			CFU/g	
2296	Meals and sauces to be warmed up (pasteurized and non-pasteurized)*	842	94	0.112	SQ					16				
2299	Meat salads	12	0	0.000	NR									
2299	Fish salads	45	16	0.356	NR									
2299	Vegetable/egg salads	11	2	0.182	NR									
2327	Sandwiches	10	0	0.000	NR									
2327	Salad	60	0	0.000	NR									
2344	Cooked mince	147	NR		SQ									0
2344	Cooked meat meals	206	NR		SQ									0
2344	Sandwiches	513	NR		SQ									0
2346	Prepackaged sandwiches with different fillings	725	5	0.007	SQ	2	1	1	1				CFU/g	0.41
2387	Ready-prepared dishes	3861	NR		SQ	409					3450		CFU/g	0.1
	Other types of food													
130	Egg products	12	0	0.000	NR									
382	Frozen foods	18	4	0.222	NR									
382	Tofu bread spreads	18	2	0.111	NR									
382	OVERALL RTE foods	912	18	0.020	SQ									1.97
534	Meal components (fried meat, cooked fish, milkshake, sliced vegetables and fruits, cooked meat)	21	0	0.000	NR									

RefID (a)	Product	n	s	Prevalence	Levels	Semi-quantitative levels								
						>10-100	>100-1,000	>1,000-10,000	>10,000-100,000	>10	<10	Other(c) (value,n)	Units	% >100
571	Miscellaneous	100	7.1	0.071	NR									
1323	Eggs	431	0	0.000	NR									
1323	Egg-containing products (pasta all'uovo)	425	13	0.031	NR									
1406	Refrigerated Processed Foods of Extended Durability (REPFEDs)	1117	NR		SQ									0
1470	Wide variety of foods	28235	519	0.018	NR									
1616	Category I foods (intended for consumption without further cooking and including smoked salmon, cured and cooked meats, various pâtés containing either poultry, fish or other sea foods, salad vegetables and various prepared salads)	171	8	0.047	NR									
1616	Category II foods (have received cooking presumed sufficient to eliminate Listeria, but nevertheless intended to receive further cooking prior to consumption, include meat and poultry products and ready-prepared meals comprising vegetables plus either chicken, turkey, pork, beef, lamb or fish)	229	28	0.122	NR									
1616	Category III foods (receive a minimal cooking insufficient to eliminate Listeria and intended to be thoroughly cooked before consumption, include meat, poultry and fish products)	110	55	0.500	NR									
1616	Category IV foods (uncooked packaged meals consisting of meat portions and a mixture of vegetables)	3	3	1.000	NR									
1742	Sweets (pastry (with cheese, butter and cream), ice-cream, parfait, cream, chestnut pure, cocoa powder)	57	8	0.140	NR									
1743	Several products (coca, garlic soup, egg cream, germ)	177	13	0.073	NR									
1788	Several RTE products	433	7	0.016	NR									
1823	Probiotic drinks	368	0	0.000	NR									
1844	Prepared vegetables, coleslaw, rice, misc	130	7	0.054	NR									
2250	Bulgur balls (cig kofte without meat)	70	12	0.171	NR									
2327	Meat/cheese spread	34	1	0.029	NR									
2327	Other RTE products (type not specified)	12	0	0.000	NR									
2344	Cooked rice	139	NR		SQ									0
2344	Gravy/stock	82	NR		SQ									0

						Semi-quantitative levels								
RefID (a)	**Product**	**n**	**s**	**Prevalence**	**Levels**	**>10-100**	**>100-1,000**	**>1,000-10,000**	**>10,000-100,000**	**>10**	**<10**	**Other**(c) **(value,n)**	**Units**	**% >100**
2387	Mayonnaise (meat or vegetable)	3731	NR		SQ	172					3542		CFU/g	0.5

CFU: colony forming units; N: number of samples taken, NR: not reported; Q: quantitative; SQ: semi-quantitative; s: number of positive samples.

(a): Full references listed in Appendix E.

(b): Concentration levels c1=139 (PCR) and 120 (Culture) CFU/g, c2=2600 CFU/g, c3=442 & 637 (PCR) and 500 & 750 (Culture) CFU/g.

(c): Semi-quantitative levels in a range/level different from those specified in the previous columns. Range/level, number of cases is indicated. Different semi-quantitative values for the same RefID are separated by semicolons.

Table D. 14: Number, origin and serotype (%) of the characterized isolates

	Isolates		Serotype (%)																	
Refid[a]	**n**	**Origin[b]**	**1/2a**	**1/2b**	**1/2c**	**3a**	**3b**	**4a**	**4b**	**4ab**	**4c**	**4d**	**4e**	**I1[c]**	**I2[d]**	**II1[e]**	**II2[f]**	**1[g]**	**4[g]**	**1/2**	**Other**
108	42	RTE,nRTE,E												83.3	16.7						
137	4	RTE	50						50												
142	1	RTE							100												
153	4	RTE												50		25	25				
494	200	RTE	0.5					0.5													
667	20	RTE	25	25	50																
964	44	RTE	93.2	6.8																	
1030	4	RTE												50		50					
1182	50	RTE	74	14	4				8												
1185	2	RTE																50	50		
1196	11	RTE							100												
1281	120	RTE	80	205	15.8		0.8		0.8												
1282	42	RTE	88.1		11.9																
1291	10	RTE	60																		40 (4b/4e)
1344	3	RTE																100			
1413	3	RTE	100																		
1426	44	RTE	29.5	227	11.4				36.4												
1504	41	RTE	34	22	2				37										5		
1530	15	RTE	73.3	6.6					13.3			6.6									
1535	NR	RTE				NR	NR														
1538	45	RTE	35.5	8.9	17.8						37.8										
1542	36	RTE	52.8		19.4				2.8	2.8		2.8									
1556	232	RTE	22	8				0.9	12	2.2	0.9	0.4	0.4								
1571	6	RTE	50						50												
1578	54	RTE	40.7	16.7	42.6																
1588	124	RTE							33.9										60.5	5.6	
1596	36	RTE,nRTE	22.2	55.5			5.5		16.7												
1615	29	RTE	27.6	24.1	13.8				13.8											20.7	
1624	60	RTE,nRTE	53.3		10				36.7												
1690	270	RTE,nRTE,E	57	10	9	1	1.5		10											0.4	1 (atypical sg4,10 (sg 7)

	Isolates		Serotype (%)																	
Refid[a]	**n**	**Origin[b]**	**1/2a**	**1/2b**	**1/2c**	**3a**	**3b**	**4a**	**4b**	**4ab**	**4c**	**4d**	**4e**	**I1[c]**	**I2[d]**	**II1[e]**	**II2[f]**	**1[g]**	**4[g]**	**1/2**	**Other**
1698	2	RTE																50	50		
1699	8	RTE	100																		
1743	111	RTE	45.1	7.2	0.9			11.7	27	7.2			0.9								
1788	35	RTE	40	17.1	25.7		2.9		14.3												
1798	114	RTE,nRTE,E	1.75	16.7	11.4				69.3												0.88 (1a)
1819	60	RTE	53.3	3.3	13.3				30												
1823	147	RTE	62.5	14.3	2				21												
1824	107	RTE	65	14	12				8.4												
1827	20	RTE																90	10		
1830	16	RTE																		56.2	12.5 (3), 31.3 (4)
1887	1280	RTE	61						31.8												7.3 (other)
1903	69	RTE	53.62	13.04	11.6		1.45		14.5												5.79 (4b/4e)
1904	3	RTE	100																		
1917	10	RTE	100																		
1922	42	RTE												97.6			2.4				
1952	91	RTE							63											5	29 (4b(X)), 3 (unknown)
1963	51	RTE	58.8	21.6	9.8								7.8								
1987	58	RTE	46	3	16		12		16												2 (4 not 4b), 5 (other)
2052	3	RTE	66.7	33.3																	
2065	6	RTE	33.3	16.6	33.3		16.6														
2076	24	RTE	4.2	12.5					83.3												
2098	13	RTE	30.8	7.7	61.5																
2130	88	RTE,nRTE,E																84			
2132	12	RTE,nRTE																58.3	25		
2219	8	RTE														12.5	87.5				

	Isolates		Serotype (%)																	
Refid[a]	**n**	**Origin[b]**	**1/2a**	**1/2b**	**1/2c**	**3a**	**3b**	**4a**	**4b**	**4ab**	**4c**	**4d**	**4e**	**I1[c]**	**I2[d]**	**II1[e]**	**II2[f]**	**1[g]**	**4[g]**	**1/2**	**Other**
2220	7	RTE																			14.3 (1ab), 42.9 (1/2ab), 42.9 (5/6ab)
2267	3	RTE	66.6	33.3																	
2285	12	RTE	25	16.7			50		8.3												
2314	307	RTE,nRTE	39.4	17.2	18.9		0.65	0.32	23.1		0.32										
2344	9	RTE																		100	

(a): Full references listed in Appendix E.
(b): RTE: RTE products, nRTE: non-RTE products, E:environmental samples.
(c): I.1=1/2a-3a.
(d): I.2=1/2c-3c.
(e): II.1=4b-4d-4e.
(f): II.2=1/2b-3b-7.
(g): Serogroup (sg).

Appendix E – Descriptive analysis of the prevalence data extracted by ready-to-eat (RTE) food sub-categories, corresponding to the box-plot shown in Figure 15

Sub-category	Mean	Minimum	P25	Median	P75	Maximum
Raw meat	0.36	0.35	0.36	0.36	0.36	0.36
Cooked meat	0.07	0.00	0.00	0.03	0.09	0.50
Cooked sausages	0.05	0.00	0.00	0.02	0.05	0.23
Pâte	0.14	0.00	0.01	0.03	0.22	0.66
Fermented meat	0.15	0.00	0.00	0.10	0.19	0.80
Dry cured meat	0.06	0.00	0.02	0.03	0.08	0.17
Other meat	0.11	0.00	0.01	0.04	0.18	0.47
Cold smoked	0.19	0.00	0.07	0.13	0.25	1.00
Hot smoked	0.04	0.00	0.01	0.02	0.07	0.12
Smoked	0.14	0.00	0.06	0.12	0.23	0.34
Cured/salted	0.15	0.00	0.05	0.12	0.21	0.50
Shelfish	0.06	0.00	0.00	0.01	0.05	0.30
Other seafood	0.11	0.00	0.00	0.03	0.18	0.52
Milk	0.03	0.00	0.00	0.01	0.03	0.22
Cheese	0.08	0.00	0.00	0.02	0.08	0.60
Fresh cheese	0.04	0.00	0.00	0.01	0.06	0.26
Soft/semisoft cheese	0.07	0.00	0.00	0.03	0.07	0.57
Hard/firm cheese	0.02	0.00	0.00	0.00	0.01	0.24
Ice cream	0.02	0.00	0.00	0.00	0.01	0.14
Butter	0.05	0.00	0.00	0.00	0.00	0.26
Cream	0.08	0.00	0.00	0.02	0.12	0.25
Other dairy	0.02	0.00	0.00	0.00	0.03	0.20
Leafy vegetables	0.02	0.00	0.00	0.00	0.02	0.14
Fruits	0.02	0.00	0.00	0.00	0.01	0.08
Other vegetables	0.03	0.00	0.00	0.01	0.03	0.27
Several	0.03	0.00	0.00	0.00	0.02	0.30
Composite food	0.05	0.00	0.00	0.01	0.07	0.36
Other food	0.12	0.00	0.02	0.05	0.12	1.00

P25: 25th percentile, P75: 75th percentile.

Appendix F – List of eligible records by ReferenceID numbers

(ReferenceID as recorded by Distiller SR – Full reference)

56 - Bacci, C., Lanzoni, E., Alpigiani, I., Boni, E., Vismarra, A., Bonardi, S. and Brindani, F., 2014. Listeria monocytogenes in raw milk and artificially contaminated aliquots. Large Animal Review, 20, 175-180.

108 - Bolocan, A. S., Oniciuc, E. A., Alvarez-Ordonez, A., Wagner, M., Rychli, K., Jordan, K. and Nicolau, A. I., 2015. Putative cross-contamination routes of Listeria monocytogenes in a meat processing facility in Romania. Journal of Food Protection, 78, 1664-1674.

126 - Buyukyoruk, S., Beyaz, D., Goksoy, E. O., Kok, F. and Kocak, P., 2014. Microbiological evaluation of ready-to-eat sandwiches served near hospitals and schools. Ankara Universitesi Veteriner Fakultesi Dergisi, 61, 193-198.

130 - Caggiano, G., De Giglio, O., Lovero, G., Rutigliano, S., Diella, G., Balbino, S., Napoli, C. and Montagna, M. T., 2015. Detection of Listeria monocytogenes in ready-to-eat foods sampled from a catering service in Apulia, Italy. Annali di Igiene : Medicina Preventiva e di Comunita, 27, 590-4.

137 - Campos, J., Gil, J., Mourao, J., Peixe, L. and Antunes, P., 2015. Ready-to-eat street-vended food as a potential vehicle of bacterial pathogens and antimicrobial resistance: An exploratory study in Porto region, Portugal. International Journal of Food Microbiology, 206, 1-6.

142 - Cardamone, C., Aleo, A., Mammina, C., Oliveri, G. and Di Noto, A. M., 2015. Assessment of the microbiological quality of fresh produce on sale in Sicily, Italy: preliminary results. Journal of Biological Research-Thessaloniki, 22, 1-6.

153 - Cetinkaya, F., Mus, T. E., Yibar, A., Guclu, N., Tavsanli, H. and Cibik, R., 2014. PREVALENCE, SEROTYPE IDENTIFICATION BY MULTIPLEX POLYMERASE CHAIN REACTION AND ANTIMICROBIAL RESISTANCE PATTERNS OF LISTERIA MONOCYTOGENES ISOLATED FROM RETAIL FOODS. Journal of Food Safety, 34, 42-49.

255 - Domenech, E., Jimenez-Belenguer, A., Amoros, J. A., Ferrus, M. A. and Escriche, I., 2015. Prevalence and antimicrobial resistance of Listeria monocytogenes and Salmonella strains isolated in ready-to-eat foods in Eastern Spain. Food Control, 47, 120-125.

268 - Durmaz, H., Avci, M. and Aygun, O., 2015. The presence of Listeria species in corn silage and raw milk produced in Southeast region of Turkey. Kafkas Universitesi Veteriner Fakultesi Dergisi, 21, 41-44.

334 - Garrido-Maestu, A., Vieites-Maneiro, R., Penaranda, E. and Cabado, A. G., 2015. Development, and complete evaluation, of a novel Most-Probable-Number (MPN) qPCR method for accurate and express quantification of Listeria monocytogenes in foodstuffs. European Food Research and Technology, 241, 697-706.

381 - Gurler, Z., Pamuk, S., Yildirim, Y. and Ertas, N., 2015. The microbiological quality of ready-to-eat salads in Turkey: A focus on Salmonella spp. and Listeria monocytogenes. International Journal of Food Microbiology, 196, 79-83.

382 - Gusman, V., Medic, D., Jelesic, Z., Mihajlovic-Ukropina, M., Milosevic, V. and Povazan, A., 2014. LISTERIA MONOCYTOGENES ISOLATED IN READY-TO-EAT FOOD IN SOUTH BACKA REGION OF VOJVODINA PROVINCE, SERBIA. Archives of Biological Sciences, 66, 11-14.

388 - Hadjilouka, A., Mantzourani, K. S., Katsarou, A., Cavaiuolo, M., Ferrante, A., Paramithiotis, S., Mataragas, M. and Drosinos, E. H., 2015. Estimation of Listeria monocytogenes and Escherichia coli O157:H7 prevalence and lvels in naturally contaminated rocket and cucumber samples by deterministic and stochastic approaches. Journal of Food Protection, 78, 311-322.

411 - Henriques, A. R., da Gama, L. T. and Fraqueza, M. J., 2014. Assessing Listeria monocytogenes presence in Portuguese ready-to-eat meat processing industries based on hygienic and safety audit. Food Research International, 63, 81-88.

484 - Kalmus, P., Kramarenko, T., Roasto, M., Meremae, K. and Viltrop, A., 2015. Quality of raw milk intended for direct consumption in Estonia. Food Control, 51, 135-139.

493 - Karabiyikli, S., Oncul, N. and Cevahiroglu, H., 2015. Microbiological safety of pastrami: A traditional meat product. Lwt-Food Science and Technology, 64, 1-5.

494 - Karadal, F. and Yildirim, Y., 2014. Antimicrobial susceptibility and serotype distribution of Listeria monocytogenes isolates obtained from raw milk cheese samples sold in Nigde. Ankara Universitesi Veteriner Fakultesi Dergisi, 61, 255-260.

533 - Lahou, E., Jacxsens, L., Van Landeghem, F. and Uyttendaele, M., 2014. Microbiological sampling plan based on risk classification to verify supplier selection and production of served meals in food service operation. Food Microbiology, 41, 60-75.

534 - Lahou, E., Jacxsens, L., Verbunt, E. and Uyttendaele, M., 2015. Evaluation of the food safety management system in a hospital food service operation toward Listeria monocytogenes. Food Control, 49, 75-84.

571 - Leong, D., Alvarez-Ordonez, A. and Jordan, K., 2014. Monitoring occurrence and persistence of Listeria monocytogenes in foods and food processing environments in the Republic of Ireland. Frontiers in Microbiology, 5, 8.

581 - Liandris, E., Gazouli, M., Taka, S., Andreadou, M., Vaiopoulou, A., Tzimotoudis, N., Kasampalidis, I., Mpaseas, D., Fyliousis, G., Poltrionieri, P., Cook, N. and Ikonomopoulos, J., 2014. Evaluation of the microbial safety of child food of animal origin in Greece. Journal of Food Science, 79, M362-M368.

600 - Losio, M. N., Pavoni, E., Bilei, S., Bertasi, B., Bove, D., Capuano, F., Farneti, S., Blasi, G., Comin, D., Cardamone, C., Decastelli, L., Delibato, E., De Santis, P., Di Pasquale, S., Gattuso, A., Goffredo, E., Fadda, A., Pisanu, M. and De Medici, D., 2015. Microbiological survey of raw and ready-to-eat leafy green vegetables marketed in Italy. International Journal of Food Microbiology, 210, 88-91.

663 - Mejlholm, O., Boknaes, N. and Dalgaard, P., 2015. Development and validation of a stochastic model for potential growth of Listeria monocytogenes in naturally contaminated lightly preserved seafood. Food Microbiology, 45, 276-289.

665 - Meldrum, R. J., Charles, D., Mannion, P. and Ellis, P., 2014. Variation in the microbiological quality of commercially produced vacuum-packed cooked sliced meat between production and the end of shelf-life. International Journal of Environmental Health Research, 24, 269-277.

667 - Meloni, D., Consolati, S. G., Mazza, R., Mureddu, A., Fois, F., Piras, F. and Mazzette, R., 2014. Presence and molecular characterization of the major serovars of Listeria monocytogenes in ten Sardinian fermented sausage processing plants. Meat Science, 97, 443-450.

689 - Modzelewska-Kapitula, M. and Maj-Sobotka, K., 2014. The microbial safety of ready-to-eat raw and cooked sausages in Poland: Listeria monocytogenes and Salmonella spp. occurrence. Food Control, 36, 212-216.

764 - Osimani, A., Aquilanti, L. and Clementi, F., 2015. Evaluation of HACCP system implementation on the quality of mixed fresh-cut salad prepared in a university canteen: a case study. Journal of Environmental Health, 77, 78-84.

789 - Pereira, J. A., Dionisio, L., Patarata, L. and Matos, T. J. S., 2015. Effect of packaging technology on microbiological and sensory quality of a cooked blood sausage, Morcela de Arroz, from Monchique region of Portugal. Meat Science, 101, 33-41.

793 - Perez-Rodriguez, F., Gonzalez-Garcia, P., Valero, A., Hernandez, M. and Rodriguez-Lazaro, D., 2014. Impact of the prevalence of different pathogens on the performance of sampling plans in lettuce products. International Journal of Food Microbiology, 184, 69-73.

830 - Pyz-Lukasik, R., Paszkiewicz, W., Tatara, M. R., Brodzki, P. and Belkot, Z., 2015. Microbiological quality of milk sold directly from producers to consumers. Journal of Dairy Science, 98, 4294-4301.

859 - Rodriguez-Lazaro, D., Gonzalez-Garcia, P., Valero, A. and Hernandez, M., 2015. Application of the SureTect detection methods for Listeria monocytogenes and Listeria spp. in meat, dairy, fish, and vegetable products. Food Analytical Methods, 8, 1-6.

867 - Rotariu, O., Thomas, D. J. I., Goodburn, K. E., Hutchison, M. L. and Strachan, N. J. C., 2014. Smoked salmon industry practices and their association with Listeria monocytogenes. Food Control, 35, 284-292.

873 - Russo, P., Botticella, G., Capozzi, V., Massa, S., Spano, G. and Beneduce, L., 2014. A fast, reliable, and sensitive method for detection and quantification of Listeria monocytogenes and Escherichia coli O157:H7 in ready-to-eat fresh-cut products by MPN-qPCR. BioMed Research International, 2014, 608296.

876 - Rysha, A., Markov, K., Frece, J., Cvek, D. and Delas, F., 2014. A survey of the microbiological quality of Sharri, a hard mountain cheese from Kosovo. International Journal of Dairy Technology, 67, 277-282.

910 - Schoder, D., Strauss, A., Szakmary-Brandle, K. and Wagner, M., 2015. How safe is European Internet cheese? A purchase and microbiological investigation. Food Control, 54, 225-230.

963 - Sospedra, I., Rubert, J., Soriano, J. M., Manes, J. and Fuentes, M. V., 2015. Prevalence of bacteria and absence of anisakid parasites in raw and prepared fish and seafood dishes in Spanish restaurants. Journal of Food Protection, 78, 615-618.

964 - Spanu, C., Scarano, C., Ibba, M., Spanu, V. and De Santis, E. P. L., 2015. Occurrence and traceability of Listeria monocytogenes strains isolated from sheep's milk cheese-making plants environment. Food Control, 47, 318-325.

1030 - Terzi, G., Gucukoglu, A., Cadirci, O., Uyanik, T. and Alisarli, M., 2015. Serotyping and antibiotic susceptibility of Listeria monocytogenes isolated from ready-to-eat foods in Samsun, Turkey. Turkish Journal of Veterinary & Animal Sciences, 39, 211-217.

1078 - Verraes, C., Uyttendaele, M., Clinquart, A., Daube, G., Sindic, M., Berkvens, D. and Herman, L., 2015. Microbiological safety and quality aspects of the short supply chain SWOT analysis of the Belgian case study. British Food Journal, 117, 2250-2264.

1113 - Wijnands, L. M., Delfgou-van Asch, E. H. M., Beerepoot-Mensink, M. E., van der Meij-Florijn, A., Fitz-James, I., van Leusden, F. M. and Pielaat, A., 2014. Prevalence and concentration of bacterial pathogens in raw produce and minimally processed packaged salads produced in and for The Netherlands. Journal of Food Protection, 77, 388-394.

1172 - Abadias, M., Usall, J., Anguera, M., Solson, C. and Vinas, I., 2008. Microbiological quality of fresh, minimally-processed fruit and vegetables, and sprouts from retail establishments. International Journal of Food Microbiology, 123, 121-129.

1182 - Aguado, V., Vitas, A. I. and Garcia-Jalon, I., 2001. Random amplified polymorphic DNA typing applied to the study of cross-contamination by Listeria monocytogenes in processed food products. Journal of Food Protection, 64, 716-720.

1185 - Ahrabi, S. S., Erguven, S. and Gunalp, A., 1998. Detection of Listeria in raw and pasteurized milk. Central European Journal of Public Health, 6, 254-5.

1187 - Akpolat, N. O., Elci, S., Atmaca, S. and Gul, K., 2004. Listeria monocytogenes in products of animal origin in turkey. Veterinary Research Communications, 28, 561-567.

1190 - Alessandria, V., Rantsiou, K., Dolci, P. and Cocolin, L., 2010. Molecular methods to assess Listeria monocytogenes route of contamination in a dairy processing plant. International Journal of Food Microbiology, 141, S156-S162.

1191 - Alisarli, M., Atasever, M. and Gokmen, M., 2005. Contamination of some vacuum-packaged meat products with Listeria monocytogenes. Acta Alimentaria, 34, 331-334.

1195 - Almeida, G., Figueiredo, A., Rola, M., Barros, R. M., Gibbs, P., Hogg, T. and Teixeira, P., 2007. Microbiological characterization of randomly selected Portuguese raw milk cheeses with reference to food safety. Journal of Food Protection, 70, 1710-1716.

1196 - Almeida, G., Magalhaes, R., Carneiro, L., Santos, I., Silva, J., Ferreira, V., Hogg, T. and Teixeira, P., 2013. Foci of contamination of Listeria monocytogenes in different cheese processing plants. International Journal of Food Microbiology, 167, 303-309.

1206 - Angelidis, A. S., Chronis, E. N., Papageorgiou, D. K., Kazakis, II, Arsenoglou, K. C. and Stathopoulos, G. A., 2006. Non-lactic acid, contaminating microbial flora in ready-to-eat foods: A potential food-quality index. Food Microbiology, 23, 95-100.

1207 - Angelidis, A. S., Georgiadou, S. S., Zafeiropoulou, V., Velonakis, E. N., Papageorgiou, D. K. and Vatopoulos, A., 2012. A survey of soft cheeses in Greek retail outlets highlights a low prevalence of Listeria spp. Dairy Science & Technology, 92, 189-201.

1208 - Angelidis, A. S. and Koutsoumanis, K., 2006. Prevalence and concentration of Listeria monocytogenes in sliced ready-to-eat meat products in the Hellenic retail market. Journal of Food Protection, 69, 938-942.

1220 - Arrese, E. and Arroyo-Izaga, M., 2012. Prevalence of Listeria monocytogenes in Idiazabal cheese. Nutricion Hospitalaria, 27, 2139-2141.

1221 - Arslan, S. and Ozdemir, F., 2008. Prevalence and antimicrobial resistance of Listeria spp. in homemade white cheese. Food Control, 19, 360-363.

1223 - Art, D. and Andre, P., 1991. Comparison of three selective isolation media for the detection of L. monocytogenes in foods. Zentralblatt fur Bakteriologie : International Journal of Medical Microbiology, 275, 79-84.

1225 - Arvanitoyannis, I. S., Kargaki, G. K. and Hadjichristodoulou, C., 2011. Effect of several MAP compositions on the microbiological and sensory properties of Graviera cheese. Anaerobe, 17, 310-314.

1228 - Atanassova, V., Reich, F. and Klein, G., 2008. Microbiological quality of sushi from sushi bars and retailers. Journal of Food Protection, 71, 860-864.

1229 - Atil, E., Ertas, H. B. and Ozbey, G., 2011. Isolation and molecular characterization of Listeria spp. from animals, food and environmental samples. Veterinarni Medicina, 56, 386-394.

1231 - Autio, T., Hielm, S., Miettinen, M., Sjoberg, A. M., Aarnisalo, K., Bjorkroth, J., Mattila-Sandholm, T. and Korkeala, H., 1999. Sources of Listeria monocytogenes contamination in a cold-smoked rainbow trout processing plant detected by pulsed-field gel electrophoresis typing. Applied and Environmental Microbiology, 65, 150-155.

1235 - Aygun, O. and Pehlivanlar, S., 2006. Listeria spp. in the raw milk and dairy products in Antakya, Turkey. Food Control, 17, 676-679.

1240 - Badosa, E., Trias, R., Pares, D., Pla, M. and Montesinos, E., 2008. Microbiological quality of fresh fruit and vegetable products in Catalonia (Spain) using normalised plate-counting methods and real time polymerase chain reaction (QPCR). Journal of the Science of Food and Agriculture, 88, 605-611.

1244 - Balzaretti, C. M. and Marzano, M. A., 2013. Prevention of travel-related foodborne diseases: Microbiological risk assessment of food handlers and ready-to-eat foods in northern Italy airport restaurants. Food Control, 29, 202-207.

1252 - Bartoli, M., 1993. APPEARANCE OF THE LISTERIA-MONOCYTOGENES IN THE CAMPANIA REGION. Industrie Alimentari, 32, 371-372.

1257 - Beaufort, A., Rudelle, S., Gnanou-Besse, N., Toquin, M. T., Kerouanton, A., Bergis, H., Salvat, G. and Cornu, M., 2007. Prevalence and growth of Listeria monocytogenes in naturally contaminated cold-smoked salmon. Letters in Applied Microbiology, 44, 406-411.

1258 - Becker, B., Jordan, S. and Holzapfel, W. H., 2005. Rapid and specific detection of Listeria monocytogenes in smoked salmon with BAX (R)-PCR. Food Control, 16, 717-721.

1261 - Becker, B., Schuler, S., Lohneis, M., Sabrowski, A., Curtis, G. D. W. and Holzapfel, W. H., 2006. Comparison of two chromogenic media for the detection of Listeria momocytogenes with the plating media recommended by EN/DIN 11290-1. International Journal of Food Microbiology, 109, 127-131.

1274 - Berrada, H., Soriano, J. M., Pico, Y. and Manes, J., 2006. Quantification of Listeria monocytogenes in salads by real time quantitative PCR. International Journal of Food Microbiology, 107, 202-6.

1281 - Berzins, A., Horman, A., Lunden, J. and Korkeala, H., 2007. Factors associated with Listeria monocytogenes contamination of cold-smoked pork products produced in Latvia and Lithuania. International Journal of Food Microbiology, 115, 173-179.

1282 - Berzins, A., Terentjeva, M. and Korkeala, H., 2009. Prevalence and genetic diversity of Listeria monocytogenes in vacuum-packaged ready-to-eat meat products at retail markets in Latvia. Journal of Food Protection, 72, 1283-1287.

1291 - Bianchi, D. M., Barbaro, A., Gallina, S., Vitale, N., Chiavacci, L., Caramelli, M. and Decastelli, L., 2013. Monitoring of foodborne pathogenic bacteria in vending machine raw milk in Piedmont, Italy. Food Control, 32, 435-439.

1311 - Braun, P. G. and Preuss, S. E., 2007. Microbial quality of water buffalo milk and milk products in Germany. Milchwissenschaft-Milk Science International, 62, 276-278.

1316 - Buldrini, A., Maini, C. and Sanavio, G., 1990. LISTERIA SPP ISOLATION FROM DAIRY AND MEAT FOOD-PRODUCTS. Industrie Alimentari, 29, 550-552.

1318 - Buncic, S., 1991. The incidence of Listeria monocytogenes in slaughtered animals, in meat, and in meat products in Yugoslavia. International Journal of Food Microbiology, 12, 173-80.

1320 - Burden, P., Stross, P., Andrews, N. J. and Greenwood, M. H., 1995. Factors affecting results obtained with European Community tests for pasteurized milk sampled at the heat treatment establishment. International Journal of Food Microbiology, 26, 177-86.

1323 - Busani, L., Cigliano, A., Taioli, E., Caligiuri, V., Chiavacci, L., Di Bella, C., Battisti, A., Duranti, A., Gianfranceschi, M., Nardella, M. C., Ricci, A., Rolesu, S., Tamba, M., Marabelli, R., Caprioli, A. and Italian Grp Vet, E., 2005. Prevalence of Salmonella enterica and Listeria monocytogenes contamination in foods of animal origin in Italy. Journal of Food Protection, 68, 1729-1733.

1326 - Cabedo, L., Barrot, L. P. I. and Canelles, A. T. I., 2008. Prevalence of Listeria monocytogenes and Salmonella in ready-to-eat food in Catalonia, Spain. Journal of Food Protection, 71, 855-859.

1332 - Campos Diaz, J., Rodriguez Alvarez, C., Sierra Lopez, A. and Arias Rodriguez, A., 2003. Microbiological study of the meals served in school lunch rooms on the island of Tenerife, Spain. Revista Espanola de Salud Publica, 77, 749-60.

1333 - Campos, J., Mourao, J., Pestana, N., Peixe, L., Novais, C. and Antunes, P., 2013. Microbiological quality of ready-to-eat salads: an underestimated vehicle of bacteria and clinically relevant antibiotic resistance genes. International Journal of Food Microbiology, 166, 464-70.

1335 - Caponigro, V., Ventura, M., Chiancone, I., Amato, L., Parente, E. and Piro, F., 2010. Variation of microbial load and visual quality of ready-to-eat salads by vegetable type, season, processor and retailer. Food Microbiology, 27, 1071-1077.

1344 - Castellucci, M. C., Simili, M., Adorisio, E., De Cicco, A. L., Sebastiani, L. and Sebastiani Annicchiarico, L., 1996. Presence of Listeria monocytogenes and Listeria spp. in various kinds of food. Annali di Igiene : Medicina Preventiva e di Comunita, 8, 667-674.

1346 - Catellani, P., Alberghini, L., Feletti, S. and Boldrin, V., 2010. Survey on the microbiological quality of Chinese food preparations. Veterinary Research Communications, 34, S183-S187.

1348 - Cenci-Goga, B. T., Ortenzi, R., Bartocci, E., Codega de Oliveira, A., Clementi, F. and Vizzani, A., 2005. Effect of the implementation of HACCP on the microbiological quality of meals at a university restaurant. Foodborne Pathogens and Disease, 2, 138-45.

1379 - Cokal, Y., Dagdelen, A., Cenet, O. and Gunsen, U., 2012. Presence of L. monocytogenes and some bacterial pathogens in two Turkish traditional foods, Mihalic cheese and Hosmerim dessert. Food Control, 26, 337-340.

1380 - Colak, H., Hampikyan, H., Bingol, E. B. and Ulusoy, B., 2007. Prevalence of L-monocytogenes and Salmonella spp. in Tulum cheese. Food Control, 18, 576-579.

1381 - Colak, H., Hampikyan, H., Ulusoy, B. and Bingol, E. B., 2007. Presence of Listeria monocytogenes in Turkish style fermented sausage (sucuk). Food Control, 18, 30-32.

1393 - Cortesi, M. L., Sarli, T., Santoro, A., Murru, N. and Pepe, T., 1997. Distribution and behavior of Listeria monocytogenes in three lots of naturally-contaminated vacuum-packed smoked salmon stored at 2 and 10 degrees C. International Journal of Food Microbiology, 37, 209-214.

1397 - Coveney, H. M., Fitzgerald, G. F. and Daly, C., 1994. A STUDY OF THE MICROBIOLOGICAL STATUS OF IRISH FARMHOUSE CHEESES WITH EMPHASIS ON SELECTED PATHOGENIC AND SPOILAGE MICROORGANISMS. Journal of Applied Bacteriology, 77, 621-630.

1405 - D'Acunzo, F., Del Cimmuto, A., Marinelli, L., Aurigemma, C. and De Giusti, M., 2012. Ready-to-eat vegetables production with low-level water chlorination. An evaluation of water quality and of its impact on end products. Annali Dell Istituto Superiore Di Sanita, 48, 151-160.

1406 - Daelman, J., Jacxsens, L., Devlieghere, F. and Uyttendaele, M., 2013. Microbial safety and quality of various types of cooked chilled foods. Food Control, 30, 510-517.

1407 - Daelman, J., Jacxsens, L., Lahou, E., Devlieghere, F. and Uyttendaele, M., 2013. Assessment of the microbial safety and quality of cooked chilled foods and their production process. International Journal of Food Microbiology, 160, 193-200.

1409 - Dambrosio, A., Quaglia, N. C., Saracino, M., Malcangi, M., Montagna, C., Quinto, M., Lorusso, V. and Normanno, G., 2013. Microbiological quality of burrata cheese produced in Puglia region: Southern Italy. Journal of Food Protection, 76, 1981-1984.

1412 - Dass, S. C., Cummins, E. J. and Abu-Ghannam, N., 2011. PREVALENCE AND TYPING OF LISTERIA MONOCYTOGENES STRAINS IN RETAIL VACUUM-PACKED COLD-SMOKED SALMON IN THE REPUBLIC OF IRELAND. Journal of Food Safety, 31, 21-27.

1413 - Dauphin, G., Ragimbeau, C. and Malle, P., 2001. Use of PFGE typing for tracing contamination with Listeria monocytogenes in three cold-smoked salmon processing plants. International Journal of Food Microbiology, 64, 51-61.

1415 - De Cesare, A., Mioni, R. and Manfreda, G., 2007. Prevalence of Listeria monocytogenes in fresh and fermented Italian sausages and ribotyping of contaminating strains. International Journal of Food Microbiology, 120, 124-130.

1418 - De Giusti, M., Aurigemma, C., Marinelli, L., Tufi, D., De Medici, D., Di Pasquale, S., De Vito, C. and Boccia, A., 2010. The evaluation of the microbial safety of fresh ready-to-eat vegetables produced by different technologies in Italy. Journal of Applied Microbiology, 109, 996-1006.

1423 - De Reu, K., Debeuckelaere, W., Botteldoorn, N., De Block, J. and Herman, L., 2002. Hygienic parameters, toxins and pathogen occurrence in raw milk cheeses. Journal of Food Safety, 22, 183-196.

1424 - De Reu, K., Grijspeerdt, K. and Herman, L., 2004. A Belgian survey of hygiene indicator bacteria and pathogenic bacteria in raw milk and direct marketing of raw milk farm products. Journal of Food Safety, 24, 17-36.

1426 - de Simon, M. and Ferrer, M. D., 1998. Initial numbers, serovars and phagevars of Listeria monocytogenes isolated in prepared foods in the city of Barcelona (Spain). International Journal of Food Microbiology, 44, 141-144.

1434 - Delibato, E., Gattuso, A., Minucci, A., Auricchio, B., De Medici, D., Toti, L., Castagnola, M., Capoluongo, E. and Gianfranceschi, M. V., 2009. PCR experion automated electrophoresis system to detect Listeria monocytogenes in foods. Journal of Separation Science, 32, 3817-3821.

1441 - Di Benedetto, M. A., Cannova, L., Di Piazza, F., Amodio, E., Bono, F., Cerame, G. and Romano, N., 2007. Hygienic-sanitary quality of ready-to-eat salad vegetables on sale in the city of Palermo (Sicily). Igiene e Sanita Pubblica, 63, 659-70.

1442 - Di Ciccio, P., Meloni, D., Festino, A. R., Conter, M., Zanardi, E., Ghidini, S., Vergara, A., Mazzette, R. and Ianieri, A., 2012. Longitudinal study on the sources of Listeria monocytogenes contamination in cold-smoked salmon and its processing environment in Italy. International Journal of Food Microbiology, 158, 79-84.

1443 - Di Pinto, A., Novello, L., Montemurro, F., Bonerba, E. and Tantillo, G., 2010. Occurrence of Listeria monocytogenes in ready-to-eat foods from supermarkets in Southern Italy. New Microbiologica, 33, 249-252.

1450 - Domenech, E., Amoros, J. A. and Escriche, I., 2011. Food Safety Objectives for Listeria monocytogenes in Spanish food sampled in cafeterias and restaurants. Journal of Food Protection, 74, 1569-1573.

1451 - Domenech, E., Amoros, J. A., Martorell, S. and Escriche, I., 2012. Safety assessment of smoked fish related to Listeria monocytogenes prevalence using risk management metrics. Food Control, 25, 233-238.

1452 - Dominguez, C., Gomez, I. and Zumalacarregui, J., 2001. Prevalence and contamination levels of Listeria monocytogenes in smoked fish and pâté sold in Spain. Journal of Food Protection, 64, 2075-2077.

1470 - Eleftheriadou, M., Varnava-Tello, A., Metta-Loizidou, M., Nikolaou, A. S. and Akkelidou, D., 2002. The microbiological profile of foods in the Republic of Cyprus: 1991-2000. Food Microbiology, 19, 463-471.

1476 - Elmali, M., Oner, S. and Yaman, H., 2013. Detection of Listeria monocytogenes by using PCR method in refrigerated ready-to-eat food consumed in Turkey. Medycyna Weterynaryjna, 69, 36-39.

1481 - Elson, R., Burgess, F., Little, C. L., Mitchell, R. T. and Local Authorities, C., 2004. Microbiological examination of ready-to-eat cold sliced meats and pâté from catering and retail premises in the UK. Journal of Applied Microbiology, 96, 499-509.

1486 - Erkan, E. M., Ciftcioglu, G., Vural, A. and Aksu, H., 2007. Some microbiological characteristics of herbed cheeses. Journal of Food Quality, 30, 228-236.

1491 - Espe, M., Kiessling, A., Lunestad, B. T., Torrissen, O. J. and Rora, A. M. B., 2004. Quality of cold smoked salmon collected in one French hypermarket during a period of 1 year. Lebensmittel-Wissenschaft Und-Technologie-Food Science and Technology, 37, 627-638.

1504 - Ferron, P. and Michard, J., 1993. DISTRIBUTION OF LISTERIA SPP IN CONFECTIONERS PASTRIES FROM WESTERN FRANCE - COMPARISON OF ENRICHMENT METHODS. International Journal of Food Microbiology, 18, 289-303.

1505 - Filiousis, G., Johansson, A., Frey, J. and Perreten, V., 2009. Prevalence, genetic diversity and antimicrobial susceptibility of Listeria monocytogenes isolated from open-air food markets in Greece. Food Control, 20, 314-317.

1516 - Francis, G. A. and O'Beirne, D., 2006. Isolation and pulsed-field gel electrophoresis typing of Listeria monocytogenes from modified atmosphere packaged fresh-cut vegetables collected in Ireland. Journal of Food Protection, 69, 2524-2528.

1519 - Franco Abuin, C. M., Quinto Fernandez, E. J., Fente Sampayo, C., Rodriguez Otero, J. L., Dominguez Rodriguez, L. and Cepeda Saez, A., 1996. Incidence of Listeria species in the environment of a cheese processing plant throughout one year. Archiv Fur Lebensmittelhygiene, 47, 25-27.

1522 - Frece, J., Markov, K., Cvek, D., Kolarec, K. and Delas, F., 2010. Comparison of conventional and molecular methods for the routine confirmation of Listeria monocytogenes in milk products produced domestically in Croatia. Journal of Dairy Research, 77, 112-6.

1526 - Fuchs, R. S. and Nicolaides, L., 1994. INCIDENCE OF LISTERIA IN HOT-SMOKED AND COLD-SMOKED FISH. Letters in Applied Microbiology, 19, 394-396.

1530 - Gambarin, P., Magnabosco, C., Losio, M. N., Pavoni, E., Gattuso, A., Arcangeli, G. and Favretti, M., 2012. Listeria monocytogenes in ready-to-eat seafood and potential hazards for the consumers. International journal of microbiology, 2012, 497635.

1535 - GarciaGimeno, R. M., ZureraCosano, G. and AmaroLopez, M., 1996. Incidence, survival and growth of Listeria monocytogenes in ready-to-use mixed vegetable salads in Spain. Journal of Food Safety, 16, 75-86.

1538 - Garrido, V., Vitas, A. I. and Garcia-Jalon, I., 2009. Survey of Listeria monocytogenes in ready-to-eat products: Prevalence by brands and retail establishments for exposure assessment of listeriosis in Northern Spain. Food Control, 20, 986-991.

1539 - Garzaroli, C. and Caserio, G., 1993. LISTERIA IN ITALIAN SHORT-RIPENED SALAMI. Industrie Alimentari, 32, 39-&.

1542 - Gelbicova, T. and Karpiskova, R., 2009. Occurrence and characteristics of Listeria monocytogenes in ready-to-eat food from retail market in the Czech Republic. Czech Journal of Food Sciences, 27, 3-7.

1544 - Gelosa, L., 1990. Survey on Listeria monocytogenes contamination of milk and cheese. Industrie Alimentari, 29, 137-139.

1551 - Giacometti, F., Bonilauri, P., Serraino, A., Peli, A., Amatiste, S., Arrigoni, N., Bianchi, M., Bilei, S., Cascone, G., Comin, D., Daminelli, P., Decastelli, L., Fustini, M., Mion, R., Petruzzelli, A., Rosmini, R., Rugna, G., Tamba, M., Tonucci, F. and Bolzoni, G., 2013. Four-year monitoring of foodborne pathogens in raw milk sold by vending machines in Italy. Journal of Food Protection, 76, 1902-1907.

1552 - Giacometti, F., Serraino, A., Finazzi, G., Daminelli, P., Losio, M. N., Arrigoni, N., Piva, S., Florio, D., Riu, R. and Zanoni, R. G., 2012. Sale of raw milk in Northern Italy: food safety implications and

comparison of different analytical methodologies for detection of foodborne pathogens. Foodborne Pathogens and Disease, 9, 293-297.

1554 - Giammanco, G. M., Pepe, A., Aleo, A., D'Agostino, V., Milone, S. and Mammina, C., 2011. Microbiological quality of Pecorino Sicilian "primosale" cheese on retail sale in the street markets of Palermo, Italy. New Microbiologica, 34, 179-185.

1556 - Gianfranceschi, M., Gattuso, A., Fiore, A., D'Ottavio, M. C., Casale, M., Palumbo, A. and Aureli, P., 2006. Survival of Listeria monocytogenes in uncooked Italian dry sausage (Salami). Journal of Food Protection, 69, 1533-1538.

1562 - Gilbert, R. J., McLauchlin, J. and Velani, S. K., 1993. The contamination of pâté by Listeria monocytogenes in England and Wales in 1989 and 1990. Epidemiology and Infection, 110, 543-551.

1563 - Gillespie, I., Little, C. and Mitchell, R., 2000. Microbiological examination of cold ready-to-eat sliced meats from catering establishments in the United Kingdom. Journal of Applied Microbiology, 88, 467-474.

1571 - Gonzalez, D., Vitas, A. I., Diez-Leturia, M. and Garcia-Jalon, I., 2013. Listeria monocytogenes and ready-to-eat seafood in Spain: Study of prevalence and temperatures at retail. Food Microbiology, 36, 374-378.

1577 - Gonzalez-Rodriguez, M.-N., Sanz, J.-J., Santos, J.-A., Otero, A. and Garcia-Lopez, M.-L., 2002. Numbers and types of microorganisms in vacuum-packed cold-smoked freshwater fish at the retail level. International Journal of Food Microbiology, 77, 161-8.

1578 - Gormley, F. J., Little, C. L., Grant, K. A., de Pinna, E. and McLauchlin, J., 2010. The microbiological safety of ready-to-eat specialty meats from markets and specialty food shops: a UK wide study with a focus on Salmonella and Listeria monocytogenes. Food Microbiology, 27, 243-9.

1582 - Gounadaki, A. S., Skandamis, P. N., Drosinos, E. H. and Nychas, G. J. E., 2008. Microbial ecology of food contact surfaces and products of small-scale facilities producing traditional sausages. Food Microbiology, 25, 313-323.

1588 - Greenwood, M. H., Roberts, D. and Burden, P., 1991. THE OCCURRENCE OF LISTERIA SPECIES IN MILK AND DAIRY-PRODUCTS - A NATIONAL SURVEY IN ENGLAND AND WALES. International Journal of Food Microbiology, 12, 197-206.

1590 - Gudbjornsdottir, B., Suihko, M. L., Gustavsson, P., Thorkelsson, G., Salo, S., Sjoberg, A. M., Niclasen, O. and Bredholt, S., 2004. The incidence of Listeria monocytogenes in meat, poultry and seafood plants in the Nordic countries. Food Microbiology, 21, 217-225.

1591 - Gudmundsdottir, S., Gudbjornsdottir, B., Einarsson, H., Kristinsson, K. G. and Kristjansson, M., 2006. Contamination of cooked peeled shrimp (Pandalus borealis) by Listeria monocytogenes during processing at two processing plants. Journal of Food Protection, 69, 1304-1311.

1596 - Guerra, M. M., McLauchlin, J. and Bernardo, F. A., 2001. Listeria in ready-to-eat and unprocessed foods produced in Portugal. Food Microbiology, 18, 423-429.

1600 - Guner, A. and Telli, N., 2011. A survey on the presence of Listeria monocytogenes in various semi-hard cheeses from different regions of Turkey. Journal of Animal and Veterinary Advances, 10, 1890-1894.

1614 - Hartemink, R. and Georgsson, F., 1991. INCIDENCE OF LISTERIA SPECIES IN SEAFOOD AND SEAFOOD SALADS. International Journal of Food Microbiology, 12, 189-196.

1615 - Harvey, J. and Gilmour, A., 1992. Occurrence of Listeria species in raw milk and dairy products produced in Northern Ireland. The Journal of Applied Bacteriology, 72, 119-25.

1616 - Harvey, J. and Gilmour, A., 1993. Occurrence and characteristics of Listeria in foods produced in Northern-Ireland. International Journal of Food Microbiology, 19, 193-205.

1624 - Hellstrom, S., Mayrhofer, S., Rippel-Rachle, B., Smulders, F. J. M. and Korkeala, H., 2007. Prevalence and genetic diversity of Listeria monocytogenes in foods marketed in Vienna, Austria. Archiv Fur Lebensmittelhygiene, 58, 116-120.

1635 - Holvoet, K., Jacxsens, L., Sampers, I. and Uyttendaele, M., 2012. Insight into the prevalence and distribution of microbial contamination to evaluate water management in the fresh produce processing industry. Journal of Food Protection, 75, 671-681.

1638 - Houang, E., Bodnaruk, P. and Ahmet, Z., 1991. Hospital green salads and the effects of washing them. The Journal of Hospital Infection, 17, 125-31.

1639 - Houang, E. and Hurley, R., 1991. ISOLATION OF LISTERIA SPECIES FROM PRECOOKED CHILLED FOODS. Journal of Hospital Infection, 19, 231-238.

1681 - Janstova, B., Drackova, M., Cupakova, S., Pridalova, H., Pospisilova, M., Karpiskova, R. and Vorlova, L., 2010. Safety and quality of farm fresh goat's cheese in the Czech Republic. Czech Journal of Food Sciences, 28, 1-8.

1690 - Jemmi, T., Pak, S. I. and Salman, M. D., 2002. Prevalence and risk factors for contamination with Listeria monocytogenes of imported and exported meat and fish products in Switzerland, 1992-2000. Preventive Veterinary Medicine, 54, 25-36.

1698 - Johannessen, G. S., Loncarevic, S. and Kruse, H., 2002. Bacteriological analysis of fresh produce in Norway. International Journal of Food Microbiology, 77, 199-204.

1699 - Johansson, T., Rantala, L., Palmu, L. and Honkanen-Buzalski, T., 1999. Occurrence and typing of Listeria monocytogenes strains in retail vacuum-packed fish products and in a production plant. International Journal of Food Microbiology, 47, 111-119.

1703 - Jorgensen, L. V. and Huss, H. H., 1998. Prevalence and growth of Listeria monocytogenes in naturally contaminated seafood. International Journal of Food Microbiology, 42, 127-131.

1708 - Kahraman, T., Ozmen, G., Ozinan, B. and Goksoy, E. O., 2010. Prevalence of Salmonella spp. and Listeria monocytogenes in different cheese types produced in Turkey. British Food Journal, 112, 1230-1236.

1719 - Karakolev, R., 2009. Incidence of Listeria monocytogenes in beef, pork, raw-dried and raw-smoked sausages in Bulgaria. Food Control, 20, 953-955.

1727 - Kells, J. and Gilmour, A., 2004. Incidence of Listeria monocytogenes in two milk processing environments, and assessment of Listeria monocytogenes blood agar for isolation. International Journal of Food Microbiology, 91, 167-174.

1729 - Kerr, K. G., Rotowa, N. A., Hawkey, P. M. and Lacey, R. W., 1990. INCIDENCE OF LISTERIA SPP IN PRECOOKED, CHILLED CHICKEN PRODUCTS AS DETERMINED BY CULTURE AND ENZYME-LINKED IMMUNOASSAY (ELISA). Journal of Food Protection, 53, 606-607.

1742 - Kiss, R., Papp, N. E., Vamos, G. and Rodler, M., 1996. Listeria monocytogenes isolation from food in Hungary. Acta Alimentaria, 25, 83-91.

1743 - Kiss, R., Tirczka, T., Szita, G., Bernath, S. and Csiko, G., 2006. Listeria monocytogenes food monitoring data and incidence of human listeriosis in Hungary, 2004. International Journal of Food Microbiology, 112, 71-74.

1749 - Kongo, J. M., Malcata, F. X., Ho, A. J. and Wiedmann, M., 2006. Detection and characterization of Listeria monocytogenes in Sao Jorge (Portugal) cheese production. Journal of Dairy Science, 89, 4456-4461.

1756 - Kosek-Paszkowska, K., Bania, J., Bystron, J., Molenda, J. and Czerw, M., 2005. Occurrence of Listeria sp in raw poultry meat and poultry meat products. Bulletin of the Veterinary Institute in Pulawy, 49, 219-222.

1757 - Kosek-Paszkowska, K., Bystron, J., Molenda, J. and Czerw, M., 2004. Occurrence of Listeria sp in dairy products and chicken carcasses. Bulletin of the Veterinary Institute in Pulawy, 48, 135-138.

1758 - Kotzekidou, P., 2013. Survey of Listeria monocytogenes, Salmonella spp. and Escherichia coli O157:H7 in raw ingredients and ready-to-eat products by commercial real-time PCR kits. Food Microbiology, 35, 86-91.

1759 - Kotzekidou, P., 2013. Microbiological examination of ready-to-eat foods and ready-to-bake frozen pastries from university canteens. Food Microbiology, 34, 337-343.

1762 - Kovacevic, M., Burazin, J., Pavlovic, H., Kopjar, M. and Pilizota, V., 2013. Prevalence and level of Listeria monocytogenes and other Listeria sp in ready-to-eat minimally processed and refrigerated vegetables. World Journal of Microbiology & Biotechnology, 29, 707-712.

1766 - Kozacinski, L., Hadziosmanovic, M., Miokovic, B., Njari, B. and Pranjic, D., 2001. Occurrence of Listeria monocytogenes in foodstuffs of animal origin. Periodicum Biologorum, 103, 187-190.

1768 - Kramarenko, T., Roasto, M., Meremae, K., Kuningas, M., Poltsama, P. and Elias, T., 2013. Listeria monocytogenes prevalence and serotype diversity in various foods. Food Control, 30, 24-29.

1774 - Kuzmanovic, J., Asanin, R., Baltic, M., Misic, D., Dimitrijevic, M., Stojanovic, M., Asanin, N. and Kovacevic, I., 2011. PRESENCE OF LISTERIA SPP IN FISH SAMPLES, FISH PRODUCTS AND SEA PRODUCTS. Acta Veterinaria-Beograd, 61, 193-203.

1775 - Kwiatek, K., 2004. Occurrence of Listeria monocytogenes in selected food of animal origin. Bulletin of the Veterinary Institute in Pulawy, 48, 269-272.

1781 - Lambertz, S. T., Nilsson, C., Bradenmark, A., Sylven, S., Johansson, A., Jansson, L. M. and Lindblad, M., 2012. Prevalence and level of Listeria monocytogenes in ready-to-eat foods in Sweden 2010. International Journal of Food Microbiology, 160, 24-31.

1782 - Langiano, E., Atrei, P., La Torre, G., De Vito, E. and Ricciardi, G., 2002. Survey of the presence of bacterial pathogens in foods sold at retail stores in the city of Cassino. Annali di Igiene : Medicina Preventiva e di Comunita, 14, 97-103.

1788 - Latorre, L., Parisi, A., Fraccalvieri, R., Normanno, G., La Porta, M. C. N., Goffredo, E., Palazzo, L., Ciccarese, G., Addante, N. and Santagada, G., 2007. Low prevalence of Listeria monocytogenes in foods from Italy. Journal of Food Protection, 70, 1507-1512.

1789 - Lawrence, L. M. and Gilmour, A., 1994. Incidence of Listeria spp. and Listeria monocytogenes in a poultry processing environment and in poultry products and their rapid confirmation by multiplex PCR. Applied and Environmental Microbiology, 60, 4600-4.

1792 - Lebert, I., Leroy, S., Giammarinaro, P., Lebert, A., Chacornac, J. P., Bover-Cid, S., Vidal-Carou, M. C. and Talon, R., 2007. Diversity of microorganisms in the environment and dry fermented sausages of small traditional French processing units. Meat Science, 76, 112-122.

1798 - Leite, P., Rodrigues, R., Ferreira, M., Ribeiro, G., Jacquet, C., Martin, P. and Brito, L., 2006. Comparative characterization of Listeria monocytogenes isolated from Portuguese farmhouse ewe's cheese and from humans. International Journal of Food Microbiology, 106, 111-121.

1805 - Lewis, H. C., Little, C. L., Elson, R., Greenwood, M., Grant, K. A. and McLauchlin, J., 2006. Prevalence of Listeria monocytogenes and other Listeria species in butter from United Kingdom production, retail, and catering premises. Journal of Food Protection, 69, 1518-1526.

1806 - Lewis, S. J. and Corry, J. E. L., 1991. COMPARISON OF A COLD ENRICHMENT AND THE FDA METHOD FOR ISOLATING LISTERIA-MONOCYTOGENES AND OTHER LISTERIA-SPP FROM READY-TO-EAT FOOD ON RETAIL SALE IN THE UK. International Journal of Food Microbiology, 12, 281-286.

1819 - Little, C. L., Barrett, N. J., Grant, K. and McLauchlin, J., 2008. Microbiological safety of sandwiches from hospitals and other health care establishments in the United Kingdom with a focus on Listeria monocytogenes and other Listeria species. Journal of Food Protection, 71, 309-318.

1820 - Little, C. L. and de Louvois, J., 1999. Health risks associated with unpasteurized goats' and ewes' milk on retail sale in England and Wales. A PHLS Dairy Products Working Group Study. Epidemiology and Infection, 122, 403-408.

1821 - Little, C. L., Mitchell, R. T., Food Standards, A., Local Authorities Coordinators of Regulatory, S. and Health Protection, A., 2004. Microbiological quality of pre-cut fruit, sprouted seeds, and unpasteurised fruit and vegetable juices from retail and production premises in the UK, and the application of HACCP. Communicable Disease and Public Health / PHLS, 7, 184-90.

1822 - Little, C. L., Rhoades, J. R., Sagoo, S. K., Harris, J., Greenwood, M., Mithani, V., Grant, K. and McLauchlin, J., 2008. Microbiological quality of retail cheeses made from raw, thermized or pasteurized milk in the UK. Food Microbiology, 25, 304-312.

1823 - Little, C. L., Sagoo, S. K., Gillespie, I. A., Grant, K. and McLauchlin, J., 2009. Prevalence and level of Listeria monocytogenes and other Listeria species in selected retail ready-to-eat foods in the United Kingdom. Journal of Food Protection, 72, 1869-1877.

1824 - Little, C. L., Taylor, F. C., Sagoo, S. K., Gillespie, I. A., Grant, K. and McLauchlin, J., 2007. Prevalence and level of Listeria monocytogenes and other Listeria species in retail pre-packaged mixed vegetable salads in the UK. Food Microbiology, 24, 711-717.

1826 - Loessner, M. J., Rudolf, M. and Scherer, S., 1997. Evaluation of luciferase reporter bacteriophage A511::luxAB for detection of Listeria monocytogenes in contaminated foods. Applied and Environmental Microbiology, 63, 2961-2965.

1827 - Loncarevic, S., Danielssontham, M. L. and Tham, W., 1995. OCCURRENCE OF LISTERIA-MONOCYTOGENES IN SOFT AND SEMI-SOFT CHEESES IN RETAIL OUTLETS IN SWEDEN. International Journal of Food Microbiology, 26, 245-250.

1830 - Loncarevic, S., Tham, W. and DanielssonTham, M. L., 1996. Prevalence of Listeria monocytogenes and other Listeria spp in smoked and "Gravad" fish. Acta Veterinaria Scandinavica, 37, 13-18.

1831 - Lopez, M. C., Medina, L. M., Huerta, R. and Jordano, R., 2000. Occurrence of contaminant biota in different European dry-sausages. Acta Alimentaria, 29, 201-216.

1833 - Lopez Diaz, T. M., Santos, J. A., Gonzalez, C. J., Moreno, B. and Garcia, M. L., 1995. BACTERIOLOGICAL QUALITY OF A TRADITIONAL SPANISH BLUE CHEESE. Milchwissenschaft-Milk Science International, 50, 503-505.

1842 - Lyhs, U., Hatakka, M., Maki-Petays, N., Hyytia, E. and Korkeala, H., 1998. Microbiological quality of Finnish vacuum-packaged fishery products at retail level. Archiv Fur Lebensmittelhygiene, 49, 146-150.

1844 - Macgowan, A. P., Bowker, K., McLauchlin, J., Bennett, P. M. and Reeves, D. S., 1994. THE OCCURRENCE AND SEASONAL-CHANGES IN THE ISOLATION OF LISTERIA SPP IN SHOP BOUGHT FOOD STUFFS, HUMAN FECES, SEWAGE AND SOIL FROM URBAN SOURCES. International Journal of Food Microbiology, 21, 325-334.

1845 - Maggi, E. and Ballarini, P., 1994. MONTE-VERONESE CHEESE. Industrie Alimentari, 33, 390-392.

1853 - Maifreni, M., Civilini, M., Domenis, C., Manzano, M., Diprima, R. and Comi, G., 1993. MICROBIOLOGICAL QUALITY OF ARTISANAL ICE-CREAM. Zentralblatt Fur Hygiene Und Umweltmedizin, 194, 553-570.

1855 - Manfreda, G., De Cesare, A., Stella, S., Cozzi, M. and Cantoni, C., 2005. Occurrence and ribotypes of Listeria monocytogenes in Gorgonzola cheeses. International Journal of Food Microbiology, 102, 287-293.

1862 - Margolles, A., Rodriguez, A. and delosReyesGavilan, C. G., 1996. Some chemical and bacteriological characteristics of regional cheeses from Asturias, Spain. Journal of Food Protection, 59, 509-515.

1869 - Martin, H., Garriga, M. and Aymerich, T., 2011. Prevalence of Salmonella spp. and Listeria monocytogenes at small-scale Spanish factories producing traditional fermented sausages. Journal of Food Protection, 74, 812-815.

1871 - Marzano, M. A. and Balzaretti, C. M., 2011. Cook-serve method in mass catering establishments: Is it still appropriate to ensure a high level of microbiological quality and safety? Food Control, 22, 1844-1850.

1872 - Marzano, M. A. and Balzaretti, C. M., 2013. Protecting child health by preventing school-related foodborne illnesses: Microbiological risk assessment of hygiene practices, drinking water and ready-to-eat foods in Italian kindergartens and schools. Food Control, 34, 560-567.

1874 - Massa, S., Cesaroni, D., Poda, G. and Trovatelli, L. D., 1990. The incidence of Listeria spp. in soft cheeses, butter and raw milk in the province of Bologna. The Journal of Applied Bacteriology, 68, 153-6.

1882 - Matyar, F., Guzeldag, G. and Mercimek, H. A., 2010. MULTIPLE ANTIBIOTIC RESISTANCE AMONG LISTERIA MONOCYTOGENES IN RETAIL FOODS, IN ADANA, TURKEY. Italian Journal of Food Science, 22, 467-472.

1886 - McLauchlin, J., Greenwood, M. H. and Pini, P. N., 1990. The occurrence of Listeria monocytogenes in cheese from a manufacturer associated with a case of listeriosis. International Journal of Food Microbiology, 10, 255-62.

1887 - McLauchlin, J., Hall, S. M., Velani, S. K. and Gilbert, R. J., 1991. Human listeriosis and pâté - A possible association. British Medical Journal, 303, 773-775.

1889 - Medrala, D., Dabrowski, W., Czekajlo-Kolodziej, U., Daczkowska-Kozon, E., Koronkiewcz, A., Augustynowicz, E. and Manzano, M., 2003. Persistence of Listeria monocytogenes strains isolated from products in a Polish fish-processing plant over a 1-year period. Food Microbiology, 20, 715-724.

1895 - Meldrum, R. J., Ellis, P. W., Mannion, P. T., Halstead, D., Garside, J. and Welsh Food Microbiological, F., 2010. Prevalence of Listeria monocytogenes in ready-to-eat foods sampled from the point of sale in Wales, United Kingdom. Journal of Food Protection, 73, 1515-1518.

1897 - Meldrum, R. J., Mannion, P. T., Garside, J. and Welsh Food Microbiological, F., 2009. Microbiological quality of ready-to-eat food served in schools in Wales, United Kingdom. Journal of Food Protection, 72, 197-201.

1898 - Meldrum, R. J., Ribeiro, C. D., Smith, R. M. M., Walker, A. M., Simmons, M., Worthington, D. and Edwards, C., 2005. Microbiological quality of ready-to-eat foods: Results from a long-term surveillance program (1995 through 2003). Journal of Food Protection, 68, 1654-1658.

1899 - Meldrum, R. J. and Smith, R. M. M., 2007. Occurrence of Listeria monocytogenes in sandwiches available to hospital patients in Wales, United Kingdom. Journal of Food Protection, 70, 1958-1960.

1900 - Meldrum, R. J., Smith, R. M. M., Ellis, P., Garside, J. and Welsh Food Microbiological, F., 2006. Microbiological quality of randomly selected ready-to-eat foods sampled between 2003 and 2005 in Wales, UK. International Journal of Food Microbiology, 108, 397-400.

1903 - Meloni, D., Galluzzo, P., Mureddu, A., Piras, F., Griffiths, M. and Mazzette, R., 2009. Listeria monocytogenes in RTE foods marketed in Italy: Prevalence and automated EcoRI ribotyping of the isolates. International Journal of Food Microbiology, 129, 166-173.

1904 - Meloni, D., Piras, F., Mureddu, A., Mazza, R., Nucera, D. and Mazzette, R., 2012. SOURCES OF LISTERIA MONOCYTOGENES CONTAMINATION IN TRADITIONAL FERMENTED SAUSAGE PROCESSING PLANTS IN ITALY. Italian Journal of Food Science, 24, 214-222.

1906 - Mena, C., Almeida, G., Carneiro, L., Teixeira, P., Hogg, T. and Gibbs, P. A., 2004. Incidence of Listeria monocytogenes in different food products commercialized in Portugal. Food Microbiology, 21, 213-216.

1908 - Menendez, S., Godinez, R., Centeno, J. A. and Rodriguez-Otero, J. L., 2001. Microbiological, chemical and biochemical characteristics of 'Tetilla' raw cows-milk cheese. Food Microbiology, 18, 151-158.

1914 - Merivirta, L. O., Bjorkroth, K. J. and Korkeala, H. J., 2003. Microbiology of charcoal-broiled European river lampreys (Lampetra fluviatilis) stored at 3 and 22 degrees C. Journal of food protection, 66, 2332-5.

1915 - Messi, P., Casolari, C., Fabio, A., Fabio, G., Gibertoni, C., Menziani, G. and Quaglio, P., 2000. Occurrence of Listeria in food matrices. Industrie Alimentari, 39, 151-157.

1916 - Metaxopoulos, J., Samelis, J. and Papadelli, M., 2001. Technological and microbiological evaluation of traditional processes as modified for the industrial manufacturing of dry fermented sausage in Greece. Italian Journal of Food Science, 13, 3-18.

1917 - Meyer, C., Fredriksson-Ahomaa, M., Kleta, S., Ellerbroek, L., Thiel, S. and Martlbauer, E., 2012. Occurrence of L. monocytogenes in ready-to-eat poultry products available on the German market. Food Research International, 48, 944-947.

1922 - Midelet-Bourdin, G., Beaufort, A., Leroi, F., Cardinal, M., Rudelle, S., Leleu, G., Copin, S. and Malle, P., 2008. Impact of-2ºC superchilling before refrigerated storage (4 and 8ºC) on the microbiological and sensory qualities of cold-smoked salmon. Journal of Food Protection, 71, 2198-2207.

1923 - Midelet-Bourdin, G., Leleu, G. and Nialle, P., 2007. Evaluation of the international reference methods NF EN ISO 11290-1 and 11290-2 and an in-house method for the isolation of Listeria monocytogenes from retail seafood products in France. Journal of Food Protection, 70, 891-900.

1924 - Miettinen, H., Aarnisalo, K., Salo, S. and Sjoberg, A. M., 2001. Evaluation of surface contamination and the presence of Listeria monocytogenes in fish processing factories. Journal of Food Protection, 64, 635-639.

1925 - Miettinen, H., Arvola, A., Luoma, T. and Wirtanen, G., 2003. Prevalence of Listeria monocytogenes in, and mircobiological and sensory quality of, rainbow trout, whitefish, and vendance roes from Finnish retail markets. Journal of Food Protection, 66, 1832-1839.

1932 - Miranda, J. M., Mondragon, A., Vazquez, B. I., Fente, C. A., Cepeda, A. and Franco, C. M., 2009. Microbiological quality and antimicrobial resistance of Escherichia coli and Staphylococcus aureus isolated from conventional and organic "Arzua-Ulloa" cheese. Cyta-Journal of Food, 7, 103-110.

1933 - Mirjana, D., Anderson, R. C., Karabasil, N., Natasa, P., Jovanovic, S., Jelena, N. T., Teodorovic, V., Maja, M. and Dojcinovic, S., 2011. ENVIRONMENTAL PREVALENCE AND PERSISTENCE OF LISTERIA MONOCYTOGENES IN COLD-SMOKED TROUT PROCESSING PLANTS. Acta Veterinaria-Beograd, 61, 429-442.

1952 - Morris, I. J. and Ribeiro, C. D., 1991. The occurrence of Listeria species in pâté - the Cardiff experience 1989. Epidemiology and Infection, 107, 111-117.

1953 - Mossel, D. A. A., Struijk, C. B., Jaisli, F. K., Vanderzee, H. and Vannetten, P., 1992. USE OF A 24 HOURS CENTRIFUGATION PLATING TECHNIQUE IN A SURVEY ON THE MEDICAL-MICROBIOLOGICAL CONDITION OF RAW HAM AND HARD, RAW-MILK CHEESE ORIGINATING FROM AUTHENTICATED GMDP MANUFACTURE. Archiv Fur Lebensmittelhygiene, 43, 51-54.

1954 - Mosso, C., Lombardi, C., Garrou, E., Berno, C., Croletto, E., Giaccone, L., Fracchia, D. and Minietti, F. G., 1993. MICROBIOLOGICAL INVESTIGATION ON A TYPICAL CHEESE PRODUCTS FROM THE PIEDMONT MOUNTAIN. Industrie Alimentari, 32, 613-617.

1955 - Mosso, C., Moda, G. and Barbarino, G., 1992. STUDY ON THE QUALITY PARAMETERS CONCERNING THE EVALUATION OF THE MILK PRODUCED IN THE TURIN PROVINCE (ITALY). Industrie Alimentari, 31, 896-902.

1961 - Mucchetti, G., Bonvini, B., Remagni, M. C., Ghiglietti, R., Locci, F., Barzaghi, S., Francolino, S., Perrone, A., Rubiloni, A., Campo, P., Gatti, M. and Carminati, D., 2008. Influence of cheese-making technology on composition and microbiological characteristics of Vastedda cheese. Food Control, 19, 119-125.

1963 - Mureddu, A., Conter, M., Meloni, D., Piras, F., Ianieri, A. and Mazzette, R., 2011. Molecular characterization of L. monocytogenes isolated from ready-to-eat seafood in Italy. Italian Journal of Food Science, 23, 106-117.

1975 - Navratilova, P., Schlegelova, J., Sustackova, A., Napravnikova, E., Lukasova, J. and Klimova, E., 2004. Prevalence of Listeria monocytogenes in milk, meat and foodstuff of animal origin and the phenotype of antibiotic resistance of isolated strains. Veterinarni Medicina, 49, 243-252.

1980 - Netschajew, A., Fredriksson-Ahomaa, M., Sperner, B. and Stolle, A., 2009. Detection of Listeria monocytogenes in vacuum-packed meat products using real-time PCR, immunoassay and culturing. Archiv Fur Lebensmittelhygiene, 60, 12-17.

1987 - Nichols, G., McLauchlin, J. and de Louvois, J., 1998. The contamination of pâté with Listeria monocytogenes - Results from the 1994 European community-coordinated food control program for England and Wales. Journal of Food Protection, 61, 1299-1304.

2003 - O'Brien, M., Hunt, K., McSweeney, S. and Jordan, K., 2009. Occurrence of foodborne pathogens in Irish farmhouse cheese. Food Microbiology, 26, 910-914.

2006 - O'Grady, J., Ruttledge, M., Sedano-Balbas, S., Smith, T. J., Barry, T. and Maher, M., 2009. Rapid detection of Listeria monocytogenes in food using culture enrichment combined with real-time PCR. Food Microbiology, 26, 4-7.

2008 - Ojeniyi, B., Christensen, J. and Bisgaard, M., 2000. Comparative investigations of Listeria monocytogenes isolated from a turkey processing plant, turkey products, and from human cases of listeriosis in Denmark. Epidemiology and Infection, 125, 303-308.

2012 - Oktay, H. I. and Heperkan, D., 2006. Evaluation of ISO method and VIDAS automated system for identifying Listeria and Salmonella in selected foods. Journal of Rapid Methods and Automation in Microbiology, 14, 133-145.

2013 - Oktem, A. B., Bayram, G., Ceylan, A. E. and Yentur, G., 2006. Prevalence of Listeria monocytogenes in some Turkish foodstuffs. Journal of Food Quality, 29, 76-86.

2016 - Olarte, C., Sanz, S., Gonzalez-Fandos, E. and Torre, P., 1999. Microbiological and physicochemical characteristics of Cameros cheese. Food Microbiology, 16, 615-621.

2023 - Omurtag, I., Smulders, F. J. M., Hilbert, F. and Paulsen, P., 2012. Microbiological condition of chicken doner kebab sold in Vienna, Austria. Archiv Fur Lebensmittelhygiene, 63, 142-146.

2029 - Osimani, A., Aquilanti, L., Babini, V., Tavoletti, S. and Clementi, F., 2011. An eight-year report on the implementation of HACCP in a university canteen: impact on the microbiological quality of meals. International Journal of Environmental Health Research, 21, 120-32.

2031 - Ozbey, G., Ertas, H. B. and Kok, F., 2006. Prevalence of Listeria species in camel sausages from retail markets in Aydin province in Turkey and RAPD analysis of Listeria monocytogenes isolates. Irish Veterinary Journal, 59, 342-344.

2046 - Papageorgiou, D. K., Abrahim, A., Bori, M. and Doundounakis, S., 1998. Chemical and bacteriological characteristics of Pichtogalo Chanion cheese and mesophilic starter cultures for its production. Journal of Food Protection, 61, 688-692.

2052 - Parisi, A., Latorre, L., Fraccalvieri, R., Miccolupo, A., Normanno, G., Caruso, M. and Santagada, G., 2013. Occurrence of Listeria spp. in dairy plants in Southern Italy and molecular subtyping of isolates using AFLP. Food Control, 29, 91-97.

2063 - Pereira, F. S., Guerra, M. M. and Bernardo, F. A., 2001. Natural occurrence of Vibrio spp. and Listeria monocytogenes in molluscan shellfish in Portugal. Journal of Shellfish Research, 20, 1229-1233.

2064 - Perez, G., Belda, F., Cardell, E. and Zarate, V., 1998. Microbiological quality and occurrence of Salmonella and Listeria monocytogenes in fresh Tenerife goat's milk cheese. Milchwissenschaft-Milk Science International, 53, 324-327.

2065 - Perez-Rodriguez, F., Castro, R., Posada-Izquierdo, G. D., Valero, A., Carrasco, E., Garcia-Gimeno, R. M. and Zurera, G., 2010. Evaluation of hygiene practices and microbiological quality of cooked meat products during slicing and handling at retail. Meat Science, 86, 479-485.

2067 - Pesavento, G., Ducci, B., Nieri, D., Comodo, N. and Lo Nostro, A., 2010. Prevalence and antibiotic susceptibility of Listeria spp. isolated from raw meat and retail foods. Food Control, 21, 708-713.

2070 - Petruzzelli, A., Blasi, G., Masini, L., Calza, L., Duranti, A., Santarelli, S., Fisichella, S., Pezzotti, G., Aquilanti, L., Osimani, A. and Tonucci, F., 2010. Occurrence of Listeria monocytogenes in salami manufactured in the Marche Region (Central Italy). Journal of Veterinary Medical Science, 72, 499-502.

2072 - Pianetti, A., Sabatini, L., Citterio, B., Pierfelici, L., Ninfali, P. and Bruscolini, E., 2008. Changes in microbial populations in ready-to-eat vegetable salads during shelf-life. Italian Journal of Food Science, 20, 245-254.

2076 - Pintado, C., Oliveira, A., Pampulha, M. E. and Ferreira, M., 2005. Prevalence and characterization of Listeria monocytogenes isolated from soft cheese. Food Microbiology, 22, 79-85.

2078 - Pinto, B. and Reali, D., 1996. Prevalence of Listeria monocytogenes and other listerias in Italian-made soft cheeses. Zentralblatt Fur Hygiene Und Umweltmedizin, 199, 60-68.

2080 - Pochop, J., Kacaniova, M., Hleba, L., Lopasovsky, L., Bobkova, A., Zelenakova, L. and Stricik, M., 2012. Detection of Listeria monocytogenes in ready-to-eat food by Step One real-time polymerase chain reaction. Journal of Environmental Science and Health Part B-Pesticides Food Contaminants and Agricultural Wastes, 47, 212-216.

2085 - Popa, M., Glevitzky, M. and Dumitrel, G. A., 2013. MICROBIOLOGICAL RISK ASSESSMENT OF ICE-CREAM PRODUCTS. Journal of Environmental Protection and Ecology, 14, 263-272.

2097 - Prencipe, V., Migliorati, G., Matteucci, O., Calistri, P. and Di Giannatale, E., 2010. Assessment of hygienic quality of some types of cheese sampled from retail outlets. Veterinaria Italiana, 46, 233-242.

2098 - Prencipe, V. A., Rizzi, V., Acciari, V., Iannetti, L., Giovannini, A., Serraino, A., Calderone, D., Rossi, A., Morelli, D., Marino, L., Migliorati, G. and Caporale, V., 2012. Listeria monocytogenes prevalence, contamination levels and strains characterization throughout the Parma ham processing chain. Food Control, 25, 150-158.

2101 - Quinto, E., Franco, C., Rodriguezotero, J. L., Fente, C. and Cepeda, A., 1994. MICROBIOLOGICAL QUALITY OF CEBRERO CHEESE FROM NORTHWEST SPAIN. Journal of Food Safety, 14, 1-8.

2107 - Rantsiou, K., Alessandria, V., Urso, R., Dolci, P. and Cocolin, L., 2008. Detection, quantification and vitality of Listeria monocytogenes in food as detennined by quantitative PCR. International Journal of Food Microbiology, 121, 99-105.

2116 - Rijpens, N. P., Jannes, G. and Herman, L. M. F., 1997. Incidence of Listeria spp. and Listeria monocytogenes in ready-to-eat chicken and turkey products determined by polymerase chain reaction and line probe assay hybridization. Journal of Food Protection, 60, 548-550.

2120 - Rodrigues, M., Capell, C. J. and Kirby, R. M., 1995. A NEW CAPACITANCE MEDIUM FOR PRESUMPTIVE DETECTION OF LISTERIA SPP FROM CHEESE SAMPLES. Journal of Microbiological Methods, 23, 291-296.

2123 - Rodriguez, M., Valero, A., Carrasco, E., Perez-Rodriguez, F., Posada, G. D. and Zurera, G., 2011. Hygienic conditions and microbiological status of chilled ready-to-eat products served in Southern Spanish hospitals. Food Control, 22, 874-882.

2124 - Rodriguez, M., Valero, A., Posada-Izquierdo, G. D., Carrasco, E. and Zurera, G., 2011. Evaluation of food handler practices and microbiological status of ready-to-eat foods in long-term care facilities in the Andalusia region of Spain. Journal of Food Protection, 74, 1504-1512.

2129 - Rorvik, L. M., Aase, B., Alvestad, T. and Caugant, D. A., 2003. Molecular epidemiological survey of Listeria monocytogenes in broilers and poultry products. Journal of Applied Microbiology, 94, 633-640.

2130 - Rorvik, L. M., Caugant, D. A. and Yndestad, M., 1995. CONTAMINATION PATTERN OF LISTERIA-MONOCYTOGENES AND OTHER LISTERIA SPP IN A SALMON SLAUGHTERHOUSE AND SMOKED SALMON PROCESSING PLANT. International Journal of Food Microbiology, 25, 19-27.

2132 - Rorvik, L. M. and Yndestad, M., 1991. Listeria monocytogenes in foods in Norway. International journal of food microbiology, 13, 97-104.

2134 - Rosengren, A., Fabricius, A., Guss, B., Sylven, S. and Lindqvist, R., 2010. Occurrence of foodborne pathogens and characterization of Staphylococcus aureus in cheese produced on farm-dairies. International Journal of Food Microbiology, 144, 263-269.

2136 - Rossmanith, P., Krassnig, M., Wagner, M. and Hein, I., 2006. Detection of Listeria monocytogenes in food using a combined enrichment/real-time PCR method targeting the prfA gene. Research in Microbiology, 157, 763-771.

2137 - Rota, C., Yanguela, J., Blanco, D., Carraminana, J. J. and Herrera, A., 1997. Presence of Listeria monocytogenes and Listeria species in fresh and cured Spanish sausages (longaniza de Aragon). Influence of the incubation period and temperature. Journal of Veterinary Medicine Series B-Infectious Diseases and Veterinary Public Health, 44, 617-624.

2138 - Rudolf, M. and Scherer, S., 2000. Incidence of Listeria and Listeria monocytogenes in acid curd cheese. Archiv Fur Lebensmittelhygiene, 51, 118-120.

2139 - Rudolf, M. and Scherer, S., 2001. High incidence of Listeria monocytogenes in European red smear cheese. International Journal of Food Microbiology, 63, 91-98.

2145 - Sagoo, S. K., Little, C. L., Allen, G., Williamson, K. and Grant, K. A., 2007. Microbiological safety of retail vacuum-packed and modified-atmosphere-packed cooked meats at end of shelf life. Journal of Food Protection, 70, 943-951.

2146 - Sagoo, S. K., Little, C. L. and Mitchell, R. T., 2003. Microbiological quality of open ready-to-eat salad vegetables: Effectiveness of food hygiene training of management. Journal of Food Protection, 66, 1581-1586.

2147 - Sagoo, S. K., Little, C. L., Ward, L., Gillespie, I. A. and Mitchell, R. T., 2003. Microbiological study of ready-to-eat salad vegetables from retail establishments uncovers a national outbreak of salmonellosis. Journal of Food Protection, 66, 403-409.

2154 - Samarzija, D., Antunac, N., Pecina, M. and Havranek, J., 2003. Quality of artisanal hard cheeses produced in the Mediterranean area of Croatia. Milchwissenschaft-Milk Science International, 58, 43-46.

2157 - Samelis, J. and Kakouri, A., 2007. Microbial and safety qualities of PDO Galotyri cheese manufactured at the industrial or artisan scale in Epirus, Greece. Italian Journal of Food Science, 19, 81-90.

2159 - Samelis, J. and Metaxopoulos, J., 1999. Incidence and principal sources of Listeria spp. and Listeria monocytogenes contamination in processed meats and a meat processing plant. Food Microbiology, 16, 465-477.

2160 - Samelis, J., Metaxopoulos, J., Vlassi, M. and Pappa, A., 1998. Stability and safety of traditional Greek salami - a microbiological ecology study. International Journal of Food Microbiology, 44, 69-82.

2161 - Samouris, G., Zdragas, A., Vafeas, G. and Belibasaki, S., 2011. Survival of pathogens in "Graviera Kritis" cheese made with raw and pasteurized milk. Journal of the Hellenic Veterinary Medical Society, 62, 205-211.

2162 - Sanchezrey, R., Poullet, B., Caceres, P. and Larriba, G., 1993. MICROBIOLOGICAL QUALITY AND INCIDENCE OF SOME PATHOGENIC MICROORGANISMS IN LA-SERENA CHEESE THROUGHOUT RIPENING. Journal of Food Protection, 56, 879-881.

2169 - Santos, M. I., Cavaco, A., Gouveia, J., Novais, M. R., Nogueira, P. J., Pedroso, L. and Ferreira, M., 2012. Evaluation of minimally processed salads commercialized in Portugal. Food Control, 23, 275-281.

2175 - Schirone, M., Tofalo, R., Fasoli, G., Perpetuini, G., Corsetti, A., Manetta, A. C., Ciarrocchi, A. and Suzzi, G., 2013. High content of biogenic amines in Pecorino cheeses. Food Microbiology, 34, 137-144.

2176 - Schirone, M., Tofalo, R., Mazzone, G., Corsetti, A. and Suzzi, G., 2011. Biogenic amine content and microbiological profile of Pecorino di Farindola cheese. Food Microbiology, 28, 128-136.

2184 - Schoder, D., Zangana, A. and Wagner, M., 2010. Sheep and goat raw milk consumption: a hygienic matter of concern? Archiv Fur Lebensmittelhygiene, 61, 229-234.

2191 - Sebastia, C., Soriano, J. M., Iranzo, M. and Rico, H., 2010. Microbiological quality of sous vide cook-chill preserved food at different shelf life. Journal of Food Processing and Preservation, 34, 964-974.

2203 - Sheridan, J. J., Duffy, G., McDowell, D. A. and Blair, I. S., 1994. THE OCCURRENCE AND INITIAL NUMBERS OF LISTERIA IN IRISH MEAT AND FISH PRODUCTS AND THE RECOVERY OF INJURED CELLS FROM FROZEN PRODUCTS. International Journal of Food Microbiology, 22, 105-113.

2218 - Sireli, U. T. and Gucukoglu, A., 2008. Prevalence and antibiotic resistance of Listeria spp. isolated from ready-to-eat foods in Ankara. Turkish Journal of Veterinary & Animal Sciences, 32, 131-135.

2219 - Siriken, B., Ayaz, N. D. and Erol, I., 2013. Prevalence and serotype distribution of Listeria monocytogenes in salted anchovy, raw anchovy, and raw mussel using IMS-based cultivation technique and PCR. Journal of Aquatic Food Product Technology, 22, 77-82.

2220 - Siriken, B., Pamuk, S., Ozakin, C., Gedikoglu, S. and Eyigor, M., 2006. A note on the incidences of Salmonella spp., Listeria spp. and Escherichia coli O157:H7 serotypes in Turkish sausage (Soujouck). Meat Science, 72, 177-181.

2224 - Soriano, J. M., Rico, H., Molto, J. C. and Manes, J., 2001. Listeria species in raw and ready-to-eat foods from restaurants. Journal of Food Protection, 64, 551-553.

2225 - Sospedra, I., Rubert, J., Soriano, J. M. and Manes, J., 2013. Survey of microbial quality of plant-based foods served in restaurants. Food Control, 30, 418-422.

2226 - Sospedra, I., Rubert, J. V., Soler, C., Soriano, J. M. and Manes, J., 2009. Microbial contamination of milk and dairy products from restaurants in Spain. Foodborne Pathogens and Disease, 6, 1269-72.

2242 - Suppin, D., Safer, M., Dabbass, A. and Smulders, F. J. M., 2006. On the prevalence of Listeria monocytogenes in cold smoked fish: an overview. Wiener Tierarztliche Monatsschrift, 93, 145-149.

2250 - Taban, B. M., 2012. Listeria monocytogenes in cig kofte without meat: A novel bulgur ball product. Journal of Food Agriculture & Environment, 10, 130-132.

2261 - Temelli, S., Ata, Z., Anar, S., Carli, K. T. and Eyigor, A., 2012. Detection of Listeria spp. and Listeria monocytogenes in retail dairy products using the Vitek immunodiagnostic assay system LDUO method and ISO method 11290-1. Milchwissenschaft-Milk Science International, 67, 374-377.

2264 - Theodoridis, A., Abrahim, A., Sarimvei, A., Panoulis, C., Karaioannoglou, P., Genigeorgis, C. and Mantis, A., 1998. Prevalence and significance of Listeria monocytogenes in Greek whey cheeses. A comparison between the years 1990 and 1996. Milchwissenschaft-Milk Science International, 53, 147-149.

2267 - Thevenot, D., Delignette-Muller, M. L., Christieans, S. and Vernozy-Rozand, C., 2005. Prevalence of Listeria monocytogenes in 13 dried sausage processing plants and their products. International Journal of Food Microbiology, 102, 85-94.

2277 - Tome, E., Teixeira, P. and Gibbs, P. A., 2006. Anti-listerial inhibitory lactic acid bacteria isolated from commercial cold smoked salmon. Food Microbiology, 23, 399-405.

2280 - Trajkovic-Pavlovic, L. B., Popovic, M. B., Novakovic, B. D., Gusman-Pasterko, V. P., Jevtic, M. R. and Mirilov, J. M., 2007. Occurrence of Campylobacter, Salmonella, Yersinia enterocolitica and Listeria monocytogenes in some retail food products in Novi Sad. Central European Journal of Public Health, 15, 167-71.

2285 - Uhitil, S., Jaksic, S., Petrak, T., Medic, H. and Gumhalter-Karolyi, L., 2004. Prevalence of Listeria monocytogenes and the other Listeria spp. in cakes in Croatia. Food Control, 15, 213-216.

2294 - Uyttendaele, M., Busschaert, P., Valero, A., Geeraerd, A. H., Vermeulen, A., Jacxsens, L., Goh, K. K., De Loy, A., Van Impe, J. F. and Deviieghere, F., 2009. Prevalence and challenge tests of Listeria monocytogenes in Belgian produced and retailed mayonnaise-based deli-salads, cooked meat products and smoked fish between 2005 and 2007. International Journal of Food Microbiology, 133, 94-104.

2296 - Uyttendaele, M., De Troy, P. and Debevere, J., 1999. Incidence of Listeria monocytogenes in different types of meat products on the Belgian retail market. International Journal of Food Microbiology, 53, 75-80.

2298 - Valdimarsson, G., Einarsson, H., Gudbjornsdottir, B. and Magnusson, H., 1998. Microbiological quality of Icelandic cooked-peeled shrimp (Pandalus borealis). International Journal of Food Microbiology, 45, 157-61.

2299 - Van Coillie, E., Werbrouck, H., Heyndrickx, M., Herman, L. and Rijpens, N., 2004. Prevalence and typing of Listeria monocytogenes in ready-to-eat food products on the Belgian market. Journal of Food Protection, 67, 2480-2487.

2314 - Vitas, A. I., Aguado, V. and Garcia-Jalon, I., 2004. Occurrence of Listeria monocytogenes in fresh and processed foods in Navarra (Spain). International Journal of Food Microbiology, 90, 349-356.

2318 - Vogel, B. F., Huss, H. H., Ojeniyi, B., Ahrens, P. and Gram, L., 2001. Elucidation of Listeria monocytogenes contamination routes in cold-smoked salmon processing plants detected by DNA-based typing methods. Applied and Environmental Microbiology, 67, 2586-2595.

2320 - Voidarou, C., Alexopoulos, A., Plessas, S., Stavropoulou, E., Fotou, K., Tzora, A., Skoufos, I. and Bezirtzoglou, E., 2011. Hygienic quality and antibiotic resistance profile of sliced butchery. Anaerobe, 17, 344-350.

2327 - Wagner, M., Auer, B., Trittremmel, C., Hein, I. and Schoder, D., 2007. Survey on the Listeria contamination of ready-to-eat food products and household environments in Vienna, Austria. Zoonoses and Public Health, 54, 16-22.

2331 - Walsh, D., Duffy, G. and Sheridan, J. J., 1998. Comparison of selective and nonselective enrichment media for the isolation of Listeria species from retail foods. Journal of Food Safety, 18, 85-99.

2341 - Watsos, E., Vacalopoulos, A., Anastassiadou, H., Bacandritsos, N. and Stavroulaki, A., 2000. Microbiological evaluation of cooked ham at point of sale in Greece. Archiv Fur Lebensmittelhygiene, 51, 132-141.

2344 - Willis, C. and Greenwood, M., 2003. Wessex shopping basket survey - a structured approach to local food sampling. International Journal of Environmental Health Research, 13, 349-359.

2346 - Wilson, I. G., 1996. Occurrence of Listeria species in prepacked retail sandwiches. Epidemiology and Infection, 117, 89-93.

2351 - Wulff, G., Gram, L., Ahrens, P. and Vogel, B. F., 2006. One group of genetically similar Listeria monocytogenes strains frequently dominates and persists in several fish slaughter- and smokehouses. Applied and Environmental Microbiology, 72, 4313-4322.

2368 - Yucel, N., Citak, S. and Onder, M., 2005. Prevalence and antibiotic resistance of Listeria species in meat products in Ankara, Turkey. Food Microbiology, 22, 241-245.

2387 - Nørrung, B., Andersen, J. K. and Schlundt, J., 1999. Incidence and control of Listeria monocytogenes in foods in Denmark. International Journal of Food Microbiology, 53, 195-203.

2388 - Johansson, T., 1998. Enhanced detection and enumeration of Listeria monocytogenes from foodstuffs and food-processing environments. International Journal of Food Microbiology, 40, 77-85.

2389 - Soultos, N., Iossifidou, E., Tzikas, Z., Sergelidis, D., Lazou, T., Drakopoulos, G. and Konstantelis, I., 2014. Prevalence of Listeria monocytogenes in ready-to-eat seafood marketed in Thessaloniki (Northern Greece). Veterinary World, 7, 1004-1009.

Annex A – Report of procurement activity RC/EFSA/BIOCONTAM/2014/01

Annex A can be found in the online version of this output ('Supporting information' section): http://onlinelibrary.wiley.com/doi/10.2903/sp.efsa.2016.EN-1141/abstract

Description: The report of the former procurement activity (RC/EFSA/BIOCONTAM/2014/01) containing a protocol that includes the literature search strategy and study selection criteria (at level 1 relevance screening) was used for both review questions.

Annex B – Data extracted from the eligible experiments

Annex B can be found in the online version of this output ('Supporting information' section): http://onlinelibrary.wiley.com/doi/10.2903/sp.efsa.2016.EN-1141/abstract

Description: Data extracted from the eligible records (excel file).