

Seasonings in the production of cooked meat products

Josef Jandásek

Raps GmbH & Co. KG

Kulmbach, Germany

Faculty of Veterinary Hygiene and Ecology

University of Veterinary and Pharmaceutical Sciences in Brno

Brno, Czech Republic

Abstract

Cooked meat products are among the oldest meat products made by man. They used to be made primarily in the winter months. Headcheese, white pudding, blood sausages and jellied meats are made principally from pig's head, skin, flank, knuckle and trotters, offal, stock, blood and other ingredients. These products are appropriately seasoned with various seasonings depending on regional customs (pepper, marjoram, onion, garlic, cumin, allspice, cloves, cardamom, ginger, cinnamon, mace). Pearl barley, bread roll, buckwheat and rice are added to blood sausages and white pudding to improve consistency and bind fat. Liver products and meat aspics are characterised by enormous diversity, pleasing to the eye and the taste buds of the customer, particularly in Western Europe. Nuts of various kinds, including almonds and pistachios, are often used to add a touch of variety, particularly in pâtés, cream, milk and honey are used to improve taste; orange peel and lemon are added for a hint of freshness. Mushrooms, apples and pears, and spirits of various kinds such as cognac, calvados and apricot brandy, may also be used.

Allspice, aspic, blood sausage, headcheese, liver pâtés, marjoram, onion, pepper

Introduction

There is perhaps no other category of meat products in which such an enormous range of diverse seasonings, flavourings and other ingredients is used as in cooked meat products. Almost all of us will have had extensive experience of products such as headcheese, blood sausages, white pudding, liver pâtés, jellied meats, boiled pork, etc., usually from domestic slaughter. The use of seasonings and other additives differs considerably depending on the individual region and the inventiveness of the producer.

In the past, cooked meat products were generally produced at the beginning or end of winter when temperatures were already (or still) low and guaranteed a longer shelf life for products of this kind that do not tend to remain fresh for long. Few people now know that the month of December ("prosinec" in Czech) was, according to Czech philologist and writer Josef Jungmann, originally called "prasinec" (from the word "prase" – the Czech word for pig). The reason was simple – the largest number of pigs was slaughtered in that month. Following the development of refrigeration and methods of conservation and packaging, we can now enjoy these products throughout the entire year.

In view of the simplicity of their production, these can be assumed to be among the oldest of meat products. Blood sausage, for example, has been made for centuries, and is even mentioned in "The Odyssey" by the famous Greek poet Homer: "And a man beside a great fire has filled a piece of an intestine with fat and blood and has made a knot at its ends and is very eager to get it quickly roasted..."

Raw materials for the production of cooked meat products

The meat used most often in the production of cooked meat products is pork, followed by poultry (chicken, turkey, goose and duck), beef, rabbit, lamb, goat, game (wild boar, roe deer, red deer, etc.), horse meat, etc. Cooked meat products have traditionally served the function of products in which raw materials with a high content of collagen, skin,

Address for correspondence:

Ing. Josef Jandásek, Ph.D.
RAPS GmbH & Co. KG
Adalbert-Raps-Str. 1
95326 Kulmbach, Germany

Phone: +491 733 993 448
E-mail: josef.jandasek@raps.de
www.maso-international.cz

fat, trimmings, offal, blood, etc. are used. Cooked pig's head, skin and offal (such as, for example, heart, tongue, liver, lungs, spleen, kidney, sublingual meat, oesophageal meat, bloody trimmings, scalded and hardened tripe, pig's stomach, picked trotter meat, etc.) are basic raw materials. The lean meat added, such as shoulder, knuckle and flank, improves the quality and taste of the products. The darker and bloodier parts of the carcass are used primarily in blood sausage, the fattier parts in blood sausages and pâtés, and the skin and other parts with high collagen content in headcheese and jellied meats. Boiled pearl barley, soaked bread roll, boiled buckwheat and rice are added to blood sausages (and white pudding) to bind fat. Soya protein, starches, flours, fibre, hydrocolloids and animal proteins are added to products of industrial quality. The stock added to products to achieve the desired consistency should not be fatty in the case of headcheese and jellied meat to avoid fat being released beneath the casing (fat accumulation).

Cooked parts, which should not be either overcooked (so they do not disintegrate) or undercooked (too hard), are used in the majority of products (headcheese, white pudding, blood sausages, Bologna sausages). This precooked material is then used in products either whole (tongue mosaics) or cut by dicers, mincing knives or hand knives. It is important to monitor the collagen content, which is responsible for the toughness of the final product. The protein in cooked meat is denatured and cannot, for this reason, bind water and assure cohesiveness. Many customers do not like excessively tough products, while the consistency of aspic should match the consistency of the filler. Raw material for the production of white pudding, pâtés and blood sausages is cut on cutters of various diameters or is chopped into a fine filler (emulsion – pâtés). Beef or pork gelatine, which substitutes for natural collagen from the head, skin and picked meat, is used in the production of products of industrial quality. Gelatine must be added with caution to ensure that the products are not excessively tough or make an excessively industrial impression. Internal fat is fried with onion, producing an extremely pleasant aroma, to improve the taste of blood sausages. Fried onion may be added on its own in large-scale production. Kitchen salt is widely used in the production of cooked meat products, although meat is pre-salted with a nitrite salting mix for certain specific products such as pink headcheese.

Cooked meat products are filled in natural casings – stomach (headcheese), small intestine (white pudding), large intestine (blood sausage), bung (blood sausage, pâté), artificial casings – polyamide and polyethylene (liver sausage, headcheese), and cans, jars and moulded plastic containers (liver sausages, white pudding, blood sausages, jellied meats). These products are usually heat treated by boiling in steam or hot water, with a temperature of 70 °C being attained in the middle of the product for a period of 10 minutes. The raw material is cooked in a special heat mode (more slowly) to achieve an improved taste sensation. Sausage meat for white pudding and blood sausages is cooked at higher temperatures. Certain products, such as headcheese, are filled in casings without being subjected to further heat treatment. Their shelf life is then shorter (THN 1977; Koch 1990; Šteinhäuser 1991; Kolda et al. 1997; Thalhammer 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003; Feiner 2006).

Seasonings, seasoning extracts, aromatics and additives used in cooked meat products

A wide range of seasonings and other additives are added to cooked meat products and greatly improve the attractiveness of these products. Seasoning extracts and aromatics are not used to such an extent as in other meat products, principally in view of the expectations of the customer who often wishes to see ground, crushed, whole or rubbed seasonings in the sliced product. This appearance is considered a certain indicator of traditional quality.

The main seasoning used is pepper, largely black pepper, which may be supplemented with white, green or red pepper in certain products. It is used predominantly in ground form, frequently supplemented with pepper extract. Crushed and whole pepper is used on a limited basis in certain types of pâté and aspic. Onion is added to products either raw or fried. It considerably improves the fullness of the product and brings a specific sweetness to it. Garlic is used largely in Central Europe, and is used on only a limited basis in Western Europe. It is applied raw or in the form of garlic paste, dried powder or aromatic. It improves the “freshness” of cooked meat products. The use of “warm” seasonings, such as cloves, cinnamon, allspice and vanilla, is also popular. Cumin (usually ground or crushed), ginger, nutmeg and mace, cardamom, coriander, aniseed and juniper are also used in a number of products. Marjoram is one of the basic seasonings used. It gives products a typical aroma that appropriately complements the raw material and gives the sliced product an attractive appearance. The taste of marjoram may be complemented with savoury, basil, thyme, bay leaves, rosemary, parsley, and perhaps lavender flowers. The use of paprika to improve product colour is not necessary or usual in view of the fact that the majority of these products are heat treated with just kitchen salt. Lemon peel, lemon powder, lemon aroma and orange peel are used for improved freshness, vinegar, acetic acid and perhaps lactic acid for acidification. Curry spices, Worcester sauce or tomato puree are also used in some cases. Cream and milk (fresh or dried) are an extremely popular additive, particularly in pâtés. As much as 5% cream and 20% milk may be added. Their use leads to an extremely refined, rounded and appealing taste. The addition of truffles or their aroma leads to the unique nature of certain products. The use of eggs (egg white, egg yolk, egg blend or dried eggs), root vegetables (carrot, celery, etc.), cucumber, peas, mushrooms and champignons, fruit (pears, apples, cranberries, raisins), wine (white wine, red wine, port), spirits (cognac, calvados, brandy, apricot brandy) may also be encountered. The use of nuts (walnuts, hazelnuts, almonds, pistachios) is also extremely widespread, particularly in pâtés. Chestnuts and the juice of compotes (apricots, etc.) may also be seen. Overall taste is often refined with the addition of sugar (white, brown) and honey, and accentuated with the addition of glutamate and other flavour enhancers (Scheid 1967; THN 1977; Koch 1990; Steinhauser 1991; Schmidt 1996; Kolda et al. 1997; Thalhammer 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003; Feiner 2006; Caseova 2008; Frey and Gerhard 2010; Quirini 2012).

A basic division of cooked meat products

Cooked meat products are divided principally into:

1. White pudding and blood sausages
2. Headcheese
3. Liver products
4. Other

In this paper, products are divided into 3 subgroups:

1. White pudding, blood sausages and headcheese (Table 1 and 2)
2. Pâtés
3. Jellied meats and aspics

White pudding is made of comminuted raw materials (head meat, pork skin, boiled offal, picked meat), bread roll, salt and seasonings which are scalded with a fatty stock before mixing. It is filled in thin natural pork or beef intestines and separated with wooden skewers or twine or closed with aluminium clips. It is heat treated by boiling for, e.g., 15 minutes at 85 – 95 °C, after which it is cooled in cold water and shipped.

Blood sausages are an extremely popular meat product with many consumers. The use of blood, fried onions, fried internal fat and suitable seasonings makes a great contribution

Table 1. Seasonings used in the production of the most famous Czech and Slovak white pudding, blood sausages and headcheese (THN 1977; Steinhauser 1991; Kolda et al. 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003)

Product	Black pepper	Garlic	Onion	Marjoram	Cumin	Allspice	Cloves	Ginger	Bread roll
Homemade white pudding	x	x		x		x		x	x
Moravian white pudding	x	x		x		x		x	
Bohemian white pudding ²	x	x		x		x			x
Smoked white pudding ^{2,5}	x			x		x			
White pudding with truffles ^{3,4}	x						x		
Šariš white pudding	x	x	x	x	x		x	x	
Harvest festival white pudding ^{7,8}	x	x	x	x	x	x			
Homemade pearl-barley blood sausage ¹	x	x	x	x	x	x			
Homemade bread-roll blood sausage ¹	x		x	x	x	x			x
Bohemian blood sausage with bacon ^{2,5}	x			x		x			x
French blood sausage ^{2,5,6}	x	x	x						x
Slaughter sausage meat	x	x	x	x	x	x		x	
Regular (light) headcheese	x	x		x					
Moravian headcheese	x	x	x	x	x				
Rustic headcheese	x	x	x	x		x			
Stomach headcheese	x	x	x	x		x	x		
Silesian headcheese ¹	x		x		x	x	x	x	
Dark headcheese	x	x		x		x			
Miner's headcheese	x		x		x	x	x	x	
Premium Prague headcheese	x		x			x			
Brisket headcheese	x		x	x					
Ham headcheese	x	x	x	x					
Liver headcheese ²	x		x		x				
Homemade smoked headcheese ⁸	x	x		x					
Zvolen headcheese ⁸	x			x					
Bologna sausage ⁴	x	x						x	

¹Fried onion; ²mace/nutmeg; ³truffles; ⁴cardamom; ⁵thyme; ⁶cinnamon; ⁷rice; ⁸paprika

to their taste. Pearl barley, bread roll, buckwheat and rice, which are first mixed with blood, are used to ensure consistency and fat binding. The comminuted raw material (skin, head, offal, picked meat), salt and seasonings scalded with hot meat stock are added and everything is mixed together. They are filled at once in large natural pork intestines or polyamide casings. These products are also known as Blutwurst or black pudding around the world. Fat cut into cubes, lean meat, tongue, etc. are also often used as filler. The taste of this product is enhanced during roasting when its characteristic full and pleasant aroma develops.

Headcheese is not heated, in contrast to the previous two products, to avoid any interference with its consistency. Headcheese was originally filled in pig stomach and weighed down with a board and stone after heat treatment. It was smoked for increased durability. It got its present name only in the 20th century. The filling (head meat, offal, knuckle) is sliced into neat small cubes. Skin, and perhaps liver, is finely chopped. A hot non-fatty stock is poured onto the fine filler with salt and seasoning which is then thoroughly mixed. Filler in the form of cubes is then added, gently mixed, and filled in polyamide casings or pig stomach. It is then boiled until a temperature of 70 °C is attained for a period of 10 minutes

Table 2. Seasonings used in the production of famous foreign white pudding, blood sausages and headcheese (Scheid 1967; Koch 1990; Thalhammer 1997; Feiner 2006; Caseova 2008; Quirini 2012).

Product	Place of origin	Black pepper	Onion	Marjoram	Cumin	Allspice	Cloves	Ginger	Mace/nutmeg
Bayerische Blutwurst ^{3,4}		x	x	x		x	x		
Fränkische Bauernblutwurst ¹		x	x	x		x	x		x
Delikateß Rotwurst ^{2,3,4,5}		x	x	x	x	x	x		
Thüringer Rotwurst ^{3,14}		x	x	x		x	x	x	
Preßwurst ¹¹		x	x	x		x	x		x
Zungenblutwurst	Germany	x	x	x		x	x		x
Kulmbacherroter Presssack		x	x	x	x	x	x		x
Oberfränkische Speckwurst		x	x	x	x	x	x		x
Presskopf ^{2,14}		x	x	x	x			x	x
Blutwurst ¹⁸		x		x	x		x		
Zungenblutwurst	Austria	x	x	x		x	x		x
Black pudding	England	x				x	x		
Kaszanka ⁶	Poland	x	x	x		x			
Burgos morcille ⁷	Spain	x							
Morcilla dulce ^{8,9,10}	Uruguay	x							
Boudin noir ^{11,12,13}		x		x		x	x		x
Black Tie ^{2,13,14,15,16}	France	x	x	x		x			x

¹Milk; ²lemon peel; ³thyme; ⁴savoury; ⁵cinnamon; ⁶buckwheat; ⁷rice; ⁸orange peel; ⁹walnuts; ¹⁰raisins; ¹¹cardamom; ¹²hazelnuts

at the core of the product. The product is then left to cool and, preferably, to lie for a day to achieve a balance between the individual tastes. Headcheese is always sliced with a long, thin, sharp knife into 0.5 – 1 cm slices in which its taste and aroma come to the fore. There are many kinds to which blood and various other ingredients are added, in which the filler is formed of tongue, or to which meat pre-salted with nitrite salt, mushrooms, etc. are added. Headcheese can also be found covered in breadcrumbs (like schnitzel). A higher proportion of meat must be used in the production of headcheese of this kind to preserve the minimum cohesion of the product during heat treatment (Scheid 1967; THN 1977; Koch 1990; Steinhauser 1991; Kolda et al. 1997; Thalhammer 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003; Feiner 2006; Caseova 2008; Quirini 2012).

Liver sausages and liverwursts are extremely popular products, particularly in Western Europe (France, Belgium and Germany). They can be found in an almost unbelievable diversity (Table 4). Products in this group popular in the Czech Republic tend to be rather more conservative (Table 3). Treated liver from which the bile ducts have been removed, along with hardened fat and pork production meat (or perhaps head meat or lean meat) and water (stock) are the basic materials used in the production of pâtés. The quality of liver is influenced fundamentally by livestock fattening, the method of animal rearing and the way in which the liver is handled following slaughter. Its proportion in the recipe should not exceed 35% in the case of pork liver or 25% in the case of beef liver (slightly bitter pâtés). Liver products may be course-grained or fine-grained, and spreadable or sliceable. The production technology is adapted, first and foremost, to the desired final consistency and method of heat treatment (cans, moulds, polyamide casings). Fine liverwursts should be easy to spread without evident lumps or separated fat in the product. Separated fat is, however, acceptable in coarse-grained liverwursts, in which it gives the consumer the impression of a traditional product. Pâtés of extraordinary quality can be obtained by filling

in pork bung. Raw materials that make the product cheaper are added in the production of pâtés of industrial quality to meet the needs of businesses and customers relating to price, specifically pork and poultry MSM and fat emulsions, skin emulsions and other emulsions, trimmings of the lowest quality, etc. Additives used include soya protein, milk protein, starches, fibre, cellulose, animal protein, phosphates, citrates, etc. Negative sensory impressions are masked by aromatics of roast meat, smoke, cooked meat, honey, various spirits (cognac, calvados, brandy, etc.) and, of course, cream, milk, nuts, etc. The sale of pâtés in moulds, which gives the producer the opportunity of decorating the surface of the pâté with flavoured gelatine, seasonings, fruit, vegetables, nuts, etc., is also extremely popular. Such decorative pâtés attract the eye of the customer and stimulate purchases. Nicely finished liver cheese makes a similar impression on the customer. Liver and liver products from specially fed poultry are an extraordinary delicacy. French duck liver, for which the ducks are overfed in the last two or three weeks of fattening, are famous around the world. Fattening geese with hypertrophied livers is known from the age of the pharaohs. This custom was evidently brought by Jewish communities to Transdanubia in Hungary, where it remains to this day. Game liver pâtés, made from the liver of both hoofed and feathered game, are another delicacy. These pâtés are often complemented by blueberries, cranberries and other forest fruits. The use of cream and milk lends an extraordinarily delicious taste to all pâtés (THN 1977; Scheid 1967; Koch 1990; Steinhäuser 1991;

Table 3. Seasonings used in the production of the most famous Czech and Slovak cooked liver products (THN 1977; Steinhäuser 1991; Kolda et al. 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003)

Product	Black pepper	Onion	Allspice	Cloves	Cinnamon	Ginger	Nutmeg/mace
Liver pâté	X	X			X	X	X
Liver sausage ^{2,3}	X	X				X	X
Select liver sausage	X	X	X		X	X	
Liverwurst	X	X	X		X	X	
Liver cheese ^{2,20}	X	X		X	X	X	X
Rustic liver sausage ³	X	X					
Old Bohemian liver sausage	X	X			X	X	X
Select liverwurst ¹	X	X			X	X	X
Martin liver cheese ²⁰	X	X			X	X	X
Prague liver cheese ^{1,20}	X	X			X	X	
Roe deer pâté ^{4,5,6,7,8,9}	X			X			
Hare pâté ^{10,11,12}	X						
Rabbit pâté ^{5,13}	X		X			X	X
Goose liverwurst ¹⁴	X		X		X		X
Poultry pâté with mushrooms ^{15,16,17,18}							
Poultry pâté with chestnuts ^{3,10,14,22}	X					X	X
Tongue pâté ^{17,19}	X				X		
Bratislava liver cheese ^{24,25}	X						
Select liver spread	X	X	X		X	X	X
Liver mousse ²⁰	X	X			X	X	X
Cream pâté with dried fruit ^{2,10,23,25}	X	X			X	X	X

¹Raw or dried milk; ²cardamom; ³fried shallots; ⁴root vegetables; ⁵bay leaf; ⁶red wine; ⁷juniper; ⁸truffles; ⁹egg; ¹⁰cream; ¹¹breadcrumbs; ¹²bread roll; ¹³butter; ¹⁴thyme; ¹⁵champignons; ¹⁶curry spice; ¹⁷lemon peel; ¹⁸egg yolks; ¹⁹mix of almonds, nuts and raisins; ²⁰wheat flour; ²¹paprika; ²²chestnuts; ²³vanilla; ²⁴garlic; ²⁵marjoram

Schmidt 1996; Kolda et al. 1997; Šedivý 1998; Bezděk 1999; Caseova 2008; Feiner 2006; Frey and Gerhardt 2010; Quirini 2012;).

Jellied meats (Sülze, aspic) belong in the category of other meat products according to the nomenclature division of meat products, though the majority of consumers class them subconsciously as cooked products. Until the use of gelatine became widespread, the source of Sülze was almost exclusively the collagen and connective tissue parts of livestock animals. As has already been mentioned, this category is not divided in, e.g., Germany and Austria and belongs to the group “Sülze”. This is logical in view of the diversity of the products offered in those countries. Meat with high collagen content, i.e. meat from pigs’ heads and skin, and perhaps pork knuckle and trotters, are used predominantly in their production, as well as offal, root vegetables and other vegetables (carrot, cucumber, onion, celery, tomatoes and paprika). The raw material (filler) is cooked, though not so as to be excessively soft, so it can be cut into attractive pieces. Skin and tendons are finely comminuted, a non-fatty stock (prepared with salt, seasonings and vinegar) and vegetables added, and everything mixed together. The jellied meat prepared in this way is filled in pre-prepared moulds and left to cool in a cold store. Jellied meat may also be made from beef, lamb, goat’s meat, horsemeat, etc. It is flavoured with whole, ground and crushed seasonings, bay leaves, fruit, vegetables, mushrooms and champignons, nuts, lemon juice, vinegar, etc. The use of edible flowers and fruits, such as marigold, dahlia, daisy, hibiscus, cornflower, lavender and mulberry, etc., is untraditional, though extremely interesting. In addition to their interesting appearance and taste, they also have strong antioxidant properties that have been published in the world’s most prestigious scientific literature.

Table 4. Seasonings used in the production of famous foreign cooked liver products (Scheid 1967; Koch 1990; Thalhammer 1997; Feiner 2006; Caseova 2008; Quirini 2012).

Product	Place of origin	Black pepper	Onion	Allspice	Cloves	Gringer	Caredamom	Mace/nutmeg
Pâté de campagne ^{3,6,18}		x	x					x
Pâté de viande ²²	France	x			x			x
Rilletepork et oie ^{12,19}		x		x	x			
Alsasser pâté ^{3,6,17}		x	x	x	x	x		x
Normandische pâté ^{17,20,21}		x		x		x	x	x
Ardenner pâté ^{3,6,23}		x	x	x	x	x	x	x
Delikatess-Leberwurst ^{1,2}		x	x			x	x	x
Feine Leberwurst ³		x	x	x			x	x
Kalbleberwurst ^{1,2,12}		x	x			x	x	x
Trüffel-leberwurst ⁴		x	x			x	x	x
Champignonleberwurst ⁵	Germany	x	x			x	x	x
Rosinen-Mandel-Leberwurst ^{8,14,15,16}		x	x			x	x	x
Kräuterleberwurst ^{3,6,7}		x	x	x				x
Sahnenleberwurst ⁹		x	x			x	x	x
Tomatenleberwurst ¹³		x	x			x	x	x
Frankfurterleberwurst ^{3,6,10,11}		x	x			x		x
Gänseleberwurst ^{2,3,10}		x					x	x
Kalbleberwurst ^{1,2,12}		x	x	x		x	x	x
Landleberwurst ^{3,17,22}	Austria	x	x	x	x	x		x

¹Honey; ²vanilla; ³marjoram; ⁴truffles; ⁵mushrooms; ⁶thyme; ⁷savoury; ⁸raisins; ⁹cream; ¹⁰rosemary; ¹¹basil; ¹²cinnamon; ¹³tomato puree; ¹⁴almonds; ¹⁵lemon; ¹⁶aniseed; ¹⁷coriander; ¹⁸egg; ¹⁹cognac; ²⁰apple; ²¹calvados; ²²garlic; ²³cumin

Wine may also be added. In Burgundy jelly (Sülze), for example, it may be added at an amount of as much as 20%. Tongue, eggs, hams, frankfurters, sausages, grilling sausages, green vegetables, celery, etc. are added to aspics for a more attractive appearance. Aspics with seafood such as crabs, crayfish and prawns, etc. are extremely interesting.

Table 5. Seasonings used in the production of the most famous Czech and Slovak cooked products – jellied meats, Sülze and aspics (THN 1977; Steinhauser 1991; Kolda et al. 1997; Šedivý 1998; Bezděk 1999; Šedivý 2003)

Product	Black pepper	Onion	Allspice
Jellied meat ^{1,2,3,6,11}	x	x	x
Aspic, Sülze ^{1,2,3,4,5}	x	x	x
Select jellied meat ^{1,2,3,6}	x	x	x
Goose liver in aspic ^{5,7,8}			
Ham in aspic ^{3,6,9}	x		
Tongue in aspic ^{3,6,9}			
Aspic cake ^{3,6,9,10}			
Standard jellied meat ^{1,3}		x	
Meaty jellied meat ^{1,3}		x	
Grilling sausages in aspic ¹	x	x	
Pork aspic ^{12,13,20}	x	x	x
Veal Sülze with apricots and lavender flowers ^{15,16,17,18,19}			

¹Vinegar; ²bay leaf; ³root vegetables; ⁴egg white; ⁵lemon juice; ⁶cucumbers; ⁷milk; ⁸white wine; ⁹eggs; ¹⁰tomato skin; ¹¹thyme; ¹²cream; ¹³parsley; ¹⁴cardamom; ¹⁵apricot juice; ¹⁶vegetable stock; ¹⁷apricot brandy; ¹⁸rosemary; ¹⁹lavender flowers; ²⁰mace/nutmeg

The significant positive effects of consumption of jellied meats, Sülze, aspic and headcheese on human health are not frequently discussed. Their high collagen content in a relatively digestible form may have a positive effect on the prevention and treatment of various diseases of the joints, with collagen being consumed in a natural rather than pharmaceutical form. A number of selected products are given in Tables 5 and 6.

Table 6. Seasonings used in the production of famous foreign cooked products – jellied meats, Sülze and aspics (Scheid 1967; Koch 1990; Thalhammer 1997; Feiner 2006; Caseova 2008; Quirini 2012)

Product	Place of origin	Black pepper	Onion	Cumin	Ginger	Cardamom	Mace/nutmeg
Feine weisse Sülze		x		x	x		x
Hausmacher Sülze		x		x	x		
Feine Weisweinstülze ^{1,8}		x					
Thüringer Kümmelsülze	Germany	x		x	x		
Berliner Sülzwurst ²		x	x	x	x		x
Fränkischer Fleischpressack ³		x	x	x			
Delikatess Sülze		x		x	x	x	x
Burgunder Sülze ^{4,5,6,7,9}	France	x				x	x

¹White wine; ²milk; ³lemon; ⁴parsley; ⁵red Burgundy wine; ⁶tomato puree; ⁷Worcester sauce; ⁸cloves; ⁹allspice

Conclusions

Cooked meat products are made largely without the use of nitrite salting mixes and with only a minimal amount of phosphate whose function is limited here in view of their raw material composition. The consumer can, for this reason, enjoy cooked products in an almost natural (traditional) form with only added seasonings. These seasonings should not overshadow the natural taste of the product, but rather appropriately complement it. There are extraordinarily wide-ranging possibilities for the use of other additives and seasonings in the production of pâtés, Sülze and aspics and an inexhaustible number of possible varieties.

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