

Food safety begins on the farm: the viewpoint of the producer

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Summary

Consumers expect the food they purchase to be safe. Governments seek to provide them with assurances of food safety through regulation, but additional steps are needed to more fully address the issue. Producers are increasingly aware of their responsibility in this area and are working in concert with other segments of the agri-food industry. Hazard analysis critical control point-based (HACCP) quality assurance programmes are being developed and implemented at the farm level for most species, in many countries. These approaches will enhance food safety for consumers everywhere. Producers continue to demonstrate that they respond positively to programmes based on science and good management practices. The authors conclude that the use of HACCP programmes will continue to increase.

Keywords

Farm-based programmes – Food safety – Hazard analysis critical control point – Pre-harvest – Producer survey – Producers – Quality assurance – Survey.

Introduction

Everyone in the food production chain, 'from the stable to the table', or from pre-harvest to post-harvest, has a role and responsibility in ensuring the safety of the food supply. Producers around the world recognise that food safety begins with them and take this responsibility seriously. Regulations on food safety may not be as obvious on the farm or ranch as they are in processing plants, stores or eating establishments, but they already exist in many areas (7, 19). While regulations address food safety issues by enforcing standards, producers are, in many cases, taking active steps to ensure food safety by establishing species-specific programmes to deal effectively with potential concerns. The standards that govern international trade (1, 4, 6) are also concerned with food safety and affect the actions of producers and food processors.

Background

'Food safety' generally refers to all hazards that may make food injurious to the consumer, while 'quality' includes

those attributes that influence the value of a product. Food quality normally has a range of values that may be acceptable and this range is typically driven by market forces. Producers receive price incentives, positive or negative, that are intended to reflect the value that consumers place on their products. On the other hand, food safety is seen as non-negotiable. It is expected by consumers and thus supervised by government officials. As a result, a mixture of national and international agencies and regulations seek to protect the safety of the food supply in most countries (1, 7, 11, 20).

In spite of a variety of regulations, and good intentions on the part of all, food safety problems do arise. These range from microbial contamination to pesticide and antimicrobial residues (5, 20). In addition to traditional food safety issues, concern is being raised over newer issues, such as:

- new production technologies
- bioterrorism
- emerging or re-emerging zoonotic diseases (4, 5).

Producer awareness

The primary concern of producers is to maintain the economic viability of their farm or ranch, as they and their families depend on this for their livelihood. Production practices are typically judged by the impact that they have on the productivity and efficiency of the animals and the overall production unit. A general perspective in the producer community is that producers are the most interested parties in assuring the health and well-being of their animals, since only healthy, well-cared-for animals are productive. Maintaining healthy animals also helps to ensure the production of 'safe' food. Producers have demonstrated that they respond positively to product quality incentives that reflect consumer demand (see, 'What producers are doing', below).

Leaner cattle and pigs/hogs, reduced somatic cell levels in milk, greater emphasis on protein in milk and a reduction in injection-site lesions are a few examples of concerns that producers have addressed through changes in livestock management. Although these items primarily reflect quality issues, producers are also concerned about food safety.

One of the most comprehensive efforts to assess the attitudes and actions of producers and animal professionals toward food safety was a survey (8) conducted under the auspices of the Livestock Conservation Institute (LCI), in conjunction with the University of Kentucky Survey Research Center, for the United States Department of Agriculture (USDA). This survey was designed to evaluate food safety education programmes developed for food animal producers. A combination of state veterinarians, extension veterinarians, extension specialists and producers were included in the survey. A total of 1,299 responses were received out of 2,500 surveys distributed. The following farming interests were represented in the final tally:

- beef (68.8%)
- dairy (51.7%)
- pork (43.6%)
- lamb (29.8%)
- broilers (17.4%)
- eggs (14.8%)
- turkeys (10.9%)
- veal (6.9%).

As expected from a survey population, many respondents covered multiple species. A summary of all questions and responses is included as Appendix 1.

The first question in the survey (*Regarding food safety and food safety policy, which of the following do you feel are of*

significant importance?) presented a variety of items and asked respondents to indicate which were the most significant for food safety and food safety policy. Strong majorities of respondents felt that 'microbial pathogens' (80.4%), 'public perceptions' (76.6%) and 'antimicrobial residues' (67.2%) were of significant importance. Also important to a majority were: 'good production practices' (61.7%) and 'imported foods' (56.1%).

Fewer respondents thought that 'water quality' (47.4%), 'on-farm hazard analysis critical control point (HACCP)' (41.2%), 'maintenance of markets' (33.8%) and 'international trade barriers' (29.5%) were of significant importance. In addition, 5.6% indicated that other factors were important, with 'food handling practices' being the most common response.

As a group, veterinarians were significantly more likely than educators to cite:

- antibiotic residues
- imported foods
- international trade barriers
- water quality
- maintenance of markets
- good production practices.

Veterinarians were also significantly more likely than producers to cite:

- antibiotic residues
- microbial pathogens
- on-farm HACCP
- water quality
- good production practices.

Educators were more likely to cite microbial pathogens, on-farm HACCP and water quality than producers. Producers were more likely to cite international trade barriers than educators.

Table I summarises the responses of all survey participants. These responses reflect both real food safety issues and factors that potentially affect the livelihood of a producer.

Another question asked: *What quality assurance/food safety assurance tools have you found that producers use the most? (Please circle all that apply.)*

Strong majorities of all respondent groups cited 'antibiotic/chemical residue avoidance programmes' (75.3%) and 'water quality programmes' (64.1%).

Table I
Items indicated as significant for food safety by respondents to the survey

Item	Frequency	Percentage
Antibiotic residues	871	67.2
Microbial pathogens	1,043	80.4
Imported food	727	56.1
On-farm hazard analysis critical control point	534	41.2
International trade barriers	382	29.5
Water quality	615	47.4
Public perceptions	993	76.6
Maintenance of markets	438	33.8
Good production practices	800	61.7

Source: report on Livestock Conservation Institute Food Safety Survey of Food Animal Production Professionals (8)

Majorities also cited:

- dead animal disposal system (58.4%)
- general hygiene/sanitation (57.7%)
- injection site selection/management (56.4%)
- waste disposal management (51.3%).

Significant numbers also cited:

- rodent control (45.9%)
- general biosecurity practices (40.4%)
- feed bunk (manger) management (35.7%)
- routine veterinary inspection (34.8%)
- isolation/quarantine of incoming animals (32.3%).

Fewer than 30% of respondents reported the use of:

- colostrum management (28.3%)
- limited access to the farm (27.7%)
- feed control measures and facility design to avoid muddy lots (26.5%)
- pathogen reduction programmes (25.4%)
- segregated housing (22%)
- bird control system (19.3%)
- flush system management (11.3%).

In addition, 2.6% cited various other tools in use.

Producers were significantly more likely than veterinarians to identify:

- water quality programmes
- isolation/quarantine of incoming animals

- feed control measures
- waste disposal management
- facility design
- limited access to the farm.

Producers were also significantly more likely than educators to identify:

- water quality programmes
- general biosecurity practices
- feed control measures
- waste disposal management
- rodent control
- dead animal disposal
- limited access to the farm
- routine veterinary inspection.

Veterinarians were more likely than educators to identify:

- antibiotic/chemical residue avoidance programmes
- general biosecurity practices
- rodent control
- colostrum management
- dead animal disposal
- routine veterinary inspection.

Veterinarians were also more likely to identify ‘colostrum management’ than producers. Educators were more likely to identify ‘isolation/quarantine of incoming animals’ and ‘feed control measures’ than veterinarians. Veterinarians were significantly more likely to mention programmes to reduce the risk of residues than producers or educators.

Based on their responses, both producers and food animal production professionals demonstrated a good awareness of food safety issues that were likely to concern consumers and regulators alike. To further explore this area, the survey asked: *How important are the following incentives for producers to participate in quality assurance/food safety programmes in your area, state or region? Would you say they are very important, somewhat important, or not important at all?*

There was substantial agreement that all of the incentives listed were at least somewhat important, with over 90% of the respondents placing each of them in that category. An interesting pattern emerged, however, when examining how many respondents rated the incentives as ‘very important’. The most important incentives appeared to be the avoidance of penalties or sanctions:

- avoiding a penalty in price for the product (71.5% cited this as ‘very important’)

- maintaining market access (62.8%)
- reducing the risk of residue violations (62.7%).

Production factors appeared to be the next most important incentive:

- production of a quality product (57.4%)
- enhanced production performance (53.6%)
- marketing a 'value-added' product (50.6%).

Fewer than half of the respondents cited a 'reduction in food-borne disease' (44.9%) or 'personal satisfaction' (34.6%) as important incentives to participate in these programmes. Two percent (2.2%) cited some other incentive as being 'very important', with 'price increases' being the one most often mentioned.

Producers were significantly more likely to mention a reduction in food-borne disease, producing a quality product, marketing a 'value-added' product and enhanced production performance as important incentives than either veterinarians or educators. This may be interpreted as indicating that the desire to produce a safe product is a major incentive for producers.

Overall results are included in Table II.

This issue was examined in further detail by asking participants to identify: *The characteristics that make a programme effective include: (please circle all that apply).*

The top five characteristics of an effective programme, as identified by the respondents, are:

- economical to implement (80.8%)

- based on scientific data (71.6%)
- evidence of increased product quality (67.4%)
- satisfactory benefit-to-cost ratio (67.3%)
- broad participation by producers (64.6%).

Characteristics cited by almost half the respondents were: 'industry operated' (46%) and 'voluntary' (44.9%). 'Government mandated' (14.5%) and 'government operated' (2.9%) were much less desirable characteristics. In addition, 7.4% of respondents identified some other characteristic.

Producers were significantly more likely than veterinarians to point to programmes based on scientific data, which were voluntary and industry operated. Producers were also more likely than educators to point to such programmes.

Educators were more likely to point to programmes that were based on scientific data and voluntary than veterinarians. Veterinarians were more likely than producers to point to programmes that were economical to implement and government mandated. Veterinarians were also more likely than educators to point to programmes that were government mandated.

What producers are doing

Increasingly, buyers are recognising that actions other than regulation are required to improve food safety. Regulations can set a 'baseline' or basic standard, but other actions are likely to be more effective in enhancing overall food safety. Large buyers are more frequently imposing requirements above the regulatory standards for processors and, ultimately, the producers who supply them (15).

As found in the LCI survey, producers have a strong desire to produce safe products. In reality, food producers have been working to find better ways to do this for decades, both in the United States of America (USA) and around the world. They want to 'do the right thing', but producers also want to ensure that the programmes they implement and the regulations they must meet are firmly based on science (3, 14, 17, 18). Just as regulatory programmes have evolved to embrace HACCP (11) principles, producers have introduced programmes based on these principles to their production facilities to improve the safety of their food products.

In 1982, beef producers recognised the need for an organised approach to avoid violative residues in food. The result was the development of the beef quality assurance (BQA) programme (12), under the auspices of the National Cattlemen's Beef Association. The BQA education programme is active in 47 states and has been effective in continuing to reduce residue rates in red meat.

Table II
Incentives ranked as important for implementing quality assurance and food safety programmes by respondents to the survey

Incentive	Very important (%)	Somewhat important (%)	Not important (%)
Reduce food-borne disease	44.9	49.5	5.7
Gain personal satisfaction	34.4	57.9	7.8
Reduce risk-residue violations	62.7	34.7	2.7
Produce quality product	57.4	41.2	1.5
Produce value-added product	50.6	39.9	9.4
Maintain market access	62.8	33.4	3.8
Avoid price penalty	71.5	24.3	4.1
Enhance performance	53.6	41.8	4.5

Source: report on Livestock Conservation Institute Food Safety Survey of Food Animal Production Professionals (8)

In 1989, pork producers worked together through the National Pork Board, a producer-funded education and promotion group, to create the pork quality assurance programme (13). The current programme, based on HACCP principles, is focused on good production practices. It stresses:

- good management
- proper use of animal health products
- working with animal health professionals
- accurate record-keeping
- proper swine care
- proper feed processing practices.

Participating producers complete a quality assurance checklist each year and meet educational requirements every two years.

The dairy industry, which is already well regulated at the farm level (19), has also undertaken an HACCP-based quality assurance programme. The dairy quality assurance (DQA) programme (2) was launched in 1991 as an educational initiative directed at decreasing antibiotic residues in milk and dairy beef. It has been expanded from the initial effort to include dairy animal care and environmental issues. It has thus become a more comprehensive programme, but still one that actively addresses food safety concerns. In its present form, it is known as the 'DQA Five-Star Program'.

Sheep producers in the USA initiated an industry-wide quality assurance programme in 1991 through their membership organisation, the American Sheep Industry (ASI) Association. Working with university and industry partners, the ASI has continued to refine the programme as research makes new information available (16). This programme addresses a wide range of concerns, including pathogens, antibiotic residues and other potential food safety issues.

Egg producers have taken action, often in conjunction with state agencies, to address specific concerns about *Salmonella enterica*, serovar Enteritidis. The Centers for Disease Control and Prevention, a part of the US Department of Health and Human Services, have found that these voluntary on-farm programmes based on HACCP principles have been effective in reducing the incidence of *S. Enteritidis* infections (10). The Centers have also concluded that scientific data, public health concerns, and public relations and marketing concerns are all potential underlying reasons for the adoption of these programmes by producers.

Australia has moved to more fully integrate on-farm quality assurance as part of the meat inspection system at federally

inspected establishments (1, 9). A combination of documented, nationally consistent, HACCP-based quality assurance programmes, supported by auditing, laboratory testing and a flexible design, allow the system to address meat safety issues as well as contemporary and emerging public health risks. This is part of the Australian effort to meet the national and international expectations of consumers, while also supporting its animal health programmes. This approach, which continuously works toward improvement, is applied to all species.

Conclusions

Producers recognise the significant role they play in ensuring a safe food supply. Programmes that are based on science are generally embraced by producers. Producer commitment to a safe food supply is demonstrated by the fact that species groups in many developed countries have adopted HACCP-based programmes. Such programmes have been effective in addressing specific food safety concerns. Producers generally find that these programmes are consistent with good management practices, and thus make good economic sense, while also helping them to meet their objective of providing consumers with a safe supply of food. It is likely that these producer-led programmes will continue to complement regulations, thus enhancing food safety for everyone. This has already occurred in Australia, and is increasingly expected by major commercial buyers.

Appendix 1

Report on Livestock Conservation Institute Food Safety Survey of Food Animal Production Professionals

[Taken from the 1998 Report on the Livestock Conservation Institute Food Safety Survey by R.E. Langley (8)]

Results summary

Question 1

Regarding food safety and food safety policy, which of the following do you feel are of significant importance? (Please circle all that apply.)

- antimicrobial residues
- on-farm HACCP
- public perceptions
- microbial pathogens
- international trade barriers

- maintenance of markets
- imported food
- water quality
- good production practices.

Strong majorities of respondents felt ‘microbial pathogens’ (80.4%), ‘public perceptions’ (76.6%), and ‘antimicrobial residues’ (67.2%) were of significant importance. Also of importance to a majority were ‘good production practices’ (61.7%) and ‘imported foods’ (56.1%). Fewer respondents thought ‘water quality’ (47.4%), ‘on-farm HACCP’ (41.2%), ‘maintenance of markets’ (33.8%), and ‘international trade barriers’ (29.5%) were of significant importance. Additionally, 5.6% indicated other factors were important, with ‘food-handling practices’ being the most common response.

Question 2

In your opinion, how important a role do food animal producers have in ensuring food safety?

Virtually all respondents thought food animal producers play an important role, with 67.4% stating it is a ‘very important’ role and 32.4% stating ‘somewhat important’.

Veterinarians were more likely to see an important role than producers.

Question 3

What quality assurance/food safety assurance tools have you found that producers use the most? (Please circle all that apply.)

Strong majorities cited ‘antibiotic/chemical residue avoidance programmes’ (75.3%) and ‘water quality programmes’ (64.1%). Majorities also cited ‘dead animal disposal system’ (58.4%), ‘general hygiene/sanitation’ (57.7%), ‘injection site selection/management’ (56.4%), and ‘waste disposal management’ (51.3%). Significant numbers also cited ‘rodent control’ (45.9%), ‘general biosecurity practices’ (40.4%), ‘feed bunk management’ (35.7%), ‘routine veterinary inspection’ (34.8%), and ‘isolation/quarantine of incoming animals’ (32.3%). Fewer than 30% reported use of ‘colostrum management’ (28.3%), ‘limited access to farm’ (27.7%), ‘feed control measures and facility design to avoid muddy lots’ (26.5%), ‘pathogen reduction programmes’ (25.4%), ‘segregated housing’ (22%), ‘bird control system’ (19.3%), or ‘flush system management’ (11.3%). Additionally, 2.6% cited various other tools in use.

Question 4

In your opinion, how important for producers are each of the following sources of information about food safety

issues and concerns in your area, state or region? Would you say they are very important, somewhat important, or not important at all?

There appeared to be significant agreement among respondents about the most valuable information sources for food safety issues. Over 95% cited four different sources as being ‘very important’ or ‘somewhat important’: ‘veterinarian’ (97.2%), ‘newspaper/news magazines (farm/food industry)’ (98.2%), ‘producer meetings’ (97.4%), and ‘extension service’ (95.9%). In addition, four other sources garnered at least 70% mention as being important sources: ‘association/company newsletters’ (92.3%), ‘farm cooperative’ (87.8%), ‘newspaper/news magazines (popular press)’ (82.2%), and ‘TV news/news shows’ (72.3%). Seventy-one percent (71%) also cited the ‘Internet/world wide web’ as an important information source, although only 10.4% deemed it ‘very important’. Finally, a majority also thought that ‘scientific/veterinary journals’ (59.8%) and ‘radio news/talk shows’ (68.4%) were at least somewhat important sources. A little over 5% cited some other important source of information as well.

Question 5

How important are each of the following methods of delivery for educating producers on their role in food safety in your area, state or region? Would you say they are very important, somewhat important, or not important at all?

All of the delivery systems listed were cited as being at least ‘somewhat important’ by 75% or more of the respondents. There was much greater variability, however, in the percentage of respondents who cited each as being ‘very important’. The delivery method with the most intense support was ‘cooperative extension programmes/meetings’ (61.8%: ‘very important’), followed by ‘producer meetings’ (59.2%) and ‘commodity quality assurance programmes’ (51.5%). Methods with substantially more lukewarm support were: ‘adult farmer classes’ (24.1%), ‘farm cooperative programmes’ (23.3%), ‘TV/radio farm shows’ (17.7%), and ‘USDA information sheets’ (15.1%). Fewer than 5% cited some other method of delivery, with ‘veterinarian’ being the most common response.

Question 6

To the best of your knowledge, what percent of food animal producers in your area, state or region currently participate in a programme designed to enhance quality assurance/food safety?

When offered broad categories to estimate the percentage of producers in their area that participated in such programmes, about one-third of the respondents (33.7%) indicated 25% or fewer participate. Roughly another third

(30.3%) said 26% to 50% participate, with the remaining third estimating 51% to 75% (20.2%) or 76% to 100% (15.8%) participation. It should be noted that 14.5% of the sample did not venture a guess on this question.

Question 7

Producers in my area, state or region are participating in a quality assurance/food safety programme operated by: (Please circle all that apply).

Most producers were reported to be participating in programmes operated by either a 'national/state commodity organisation' (55.3%) or a 'university/extension service' (54.1%). Fewer were in programmes operated by the 'state department of agriculture' (29.1%), 'packer/processors' (25.4%), or 'farm cooperatives' (16.7%). In addition, 9.8% cited some other programme operator, with 'veterinarians' and 'trade associations' getting the most mention.

Question 8

What programmes are you aware of that are being implemented and used to educate producers on residues and medications?

For this type of programme, 57.9% mentioned 'national-level commodity quality assurance programmes' and 57.1% mentioned 'state-level commodity quality assurance programmes'. In addition, 12.7% specified some other type of programme with those implemented by 'extension', 'trade associations' and 'the state' getting the most mention.

Question 9

Among the programmes you are familiar with in your area, region or state, who helps to administer producer participation in quality assurance/food safety programmes? (Please circle all that apply.)

It appears that 'veterinarians' were most likely to help administer these programmes with mention by 76.6% of the respondents. Significant roles were also played by 'extension agents' (59.4%) and 'state extension personnel' (59.1%). To a lesser degree, programmes were also administered by a 'field man/company representative' (38.9%), with very little identification of assistance by an 'adult farmer instructor' (6.2%). In addition, 11.2% mentioned some other entity with 'trade associations', the 'state', and 'drug company representatives' being cited most often.

Question 10

The characteristics that make a programme effective include: (Please circle all that apply).

The top five characteristics of effective programmes, as identified by the respondents, were: 'economical to implement' (80.8%), 'based on scientific data' (71.6%), 'evidence of increased product quality' (67.4%), 'satisfactory benefit-to-cost ratio' (67.3%), and 'broad participation by producers' (64.6%). Characteristics cited by almost half of the respondents were: 'industry operated' (46%), and 'voluntary' (44.9%). 'Government-mandated' (14.5%) and 'government-operated' (2.9%) were much less desirable characteristics. In addition, 7.4% identified some other characteristic.

Question 11

How important are the following incentives for producers to participate in quality assurance/food safety programmes in your area, state or region? Would you say they are very important, somewhat important, or not important at all?

There was substantial agreement that all of the incentives listed were at least somewhat important, with over 90% of the respondents citing each of them as such. An interesting pattern emerges, however, when comparing the options on how many respondents rated them as 'very important' incentives. The most important incentives appeared to be avoidance of penalties or sanctions: 'avoid penalty in price for product' (71.5%: 'very important'), 'maintain market access' (62.8%), and, 'reduced risk of residue violations' (62.7%). Production factors appeared to be next most important: 'production of quality product' (57.4%), 'enhanced production performance' (53.6%), and 'market a "value-added" product' (50.6%). Fewer than half of the respondents cited 'reduction in food-borne disease' (44.9%) and 'personal satisfaction' (34.6%) as important incentives to participate in these programmes. Two percent (2.2%) cited some other incentive as being 'very important' with 'price increases' being the most mentioned.

Respondents were then queried as to what type of programme format they would most prefer, and then asked a subtly different question regarding what type of programme format would be best to get participation in these programmes from producers who currently do not participate. Some interesting differences appeared between what food animal production professionals think is the ideal, and what they think will actually work to increase participation.

Question 12

Which one of the following programme formats comes closest to your ideal?

The overwhelming favourite as the ideal programme format was: 'voluntary quality assurance programme – commodity based', with 41.7% of the 'vote'. Next, with

virtually identical support, were: 'voluntary quality assurance programme – supervised by cooperative extension system' (13.7%), 'voluntary quality assurance programme – supervised by private veterinarians' (12%), and 'voluntary quality assurance programmes – supervised by state department of agriculture' (11.7%). The less-favoured options were 'programmes that are buyer developed and supervised (i.e. packer/processor)' (9.8%), 'federal-mandated quality assurance programmes' (5.7%), and 'state-mandated quality assurance programme' (4%). The remaining 1.3% who answered the question selected 'none of the above, we do not need on-farm quality assurance/food safety programmes'.

Question 13

What one type of programme would work BEST for producers who are NOT participating in a quality assurance/food safety programme in your area, state or region?

When asked what type of format would work best to attract more participation, once again the top choice was 'voluntary quality assurance programme – commodity based' but with only 20.9% supporting this option. Interestingly, the statistically indistinguishable second choice, 'programmes that are buyer developed and supervised (i.e. packer/processor)' (19.9%), was seen as being the ideal format by fewer than half of those who thought it was the most workable. The third favourite response to this question was 'state-mandated and supervised quality assurance programme' (17.1%), with the remaining four options receiving similar support: 'voluntary quality assurance programme – supervised by cooperative extension system' (12.5%), 'federal-mandated and supervised quality assurance programme' (10.9%), 'voluntary quality assurance programme – supervised by state department of agriculture' (8.7%), and, 'voluntary quality assurance programme – supervised by private veterinarians' (8.5%). Again, 1.4% selected 'none of the above, we do not need on-farm quality assurance/food safety programmes'.

Question 14

The current amount of information producers in my area, state or region are receiving about food safety is adequate.

A majority agreed with this statement (60.9%), although only 7.3% 'strongly agreed'. There was no significant difference of opinion on this statement.

Question 15

The education programmes that I am familiar with have been effective.

A majority agreed with this statement (77%), although only 15.4% 'strongly agreed'. In addition, veterinarians were significantly more likely to disagree with this statement than both producers and educators.

Question 16

Animal production or on-farm food safety systems are necessary to maintain access to international markets for USA products.

A strong majority agreed with this statement (89.6%), with over half (53.2%) marking 'strongly agree'. In addition, veterinarians were significantly more likely to strongly agree with this statement than both producers and educators.

Question 17

Animal production or on-farm food safety systems are necessary to maintain domestic demand of USA products.

A strong majority agreed with this statement (93.3%), with over half (56.3%) marking 'strongly agree'. Veterinarians were significantly more likely to strongly agree with this statement than educators.

Question 18

Pathogen reduction activities at processing, such as irradiation/cold pasteurisation, would make production level activity unnecessary.

Only 20% agreed with this statement, while 54.2% marked 'strongly disagree'. Both veterinarians and educators were more likely to strongly disagree than producers.

Question 19

There should be a national system to provide basic provisions that would lend uniformity to production food safety systems across the country.

A fairly strong majority agreed with this statement (69.5%), with 23% marking 'strongly agree'. Veterinarians were more likely to strongly agree with this than producers.

While there was substantial agreement that there should be a national system, there was little agreement on who should develop it. Furthermore, although asked to select only one response, almost 100 respondents were apparently unable to limit themselves to one choice.

Question 20

In your opinion, if a national system were provided, who should develop it? (Please circle only one.)

The top choice for who should develop a national system was 'various commodity/farm organisations' (26.7%), with 'USDA, Animal and Plant Health Inspection Service, Veterinary Services' (22.3%), 'USDA, Food Safety and Inspection Service' (16.7%), and 'USDA Cooperative Extension Service' (11.8%) also getting substantial mention. The remaining options garnered less than 5% mention each: 'national packer/processor associations' and 'USA Animal Health Association' (3.9%), 'Livestock Conservation Institute' (3.5%) and 'Food and Drug Administration' (0.6%). As mentioned above, significant numbers of respondents felt several of these entities should collaborate to develop a national system (if provided), and among these, 'all of the above' was the most common suggestion.

The main pattern that emerged when comparing group responses to this question was that producers appeared to more heavily favour a system developed by various commodity/farm organisations, with almost half (48.8%) giving this response. Alternatively, veterinarians and educators appeared more in favour of some aspect of USDA involvement in the development of a national system, as witnessed by their stronger support, in general, for the USDA Animal and Plant Health Inspection Service, Veterinary Services, USDA Food Safety and Inspection Service, and USDA Cooperative Extension Service.



La sécurité sanitaire des aliments commence à la ferme : le point de vue du producteur

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Résumé

Les consommateurs doivent pouvoir compter sur l'innocuité des denrées alimentaires qu'ils achètent. Les réglementations nationales visent à leur fournir une certaine garantie en matière de sécurité sanitaire des aliments, mais des mesures complémentaires s'avèrent nécessaires pour que cette question soit traitée de manière exhaustive. Les producteurs sont de plus en plus conscients des responsabilités qui leur incombent dans ce domaine et travaillent de concert avec d'autres segments du secteur agroalimentaire. Dans de nombreux pays, des programmes d'assurance qualité basés sur le système d'analyse des risques et de maîtrise des points critiques (HACCP) ont été mis au point et sont appliqués dans les élevages pour la plupart des espèces animales. Ces approches garantiront aux consommateurs, partout dans le monde, un meilleur niveau de sécurité sanitaire des aliments. Les producteurs sont disposés à s'engager activement dans des programmes fondés scientifiquement et qui reposent sur de bonnes pratiques de gestion. Les auteurs en concluent que les programmes HACCP seront de plus en plus utilisés à l'avenir.

Mots-clés

Analyse des risques et maîtrise des points critiques – Assurance qualité – Enquête – Enquête auprès des producteurs – Phase avant l'abattage – Producteurs – Programmes appliqués au niveau des fermes – Sécurité sanitaire des aliments.



El punto de vista del productor: la seguridad sanitaria empieza en la granja

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Resumen

El consumidor espera que los alimentos que compra sean inocuos. Aunque los gobiernos instituyen reglamentos para tratar de ofrecerle garantías en este sentido, un trabajo global sobre la cuestión requiere además medidas de otro tipo. Los productores, cada vez más conscientes de su responsabilidad en este terreno, trabajan concertadamente con otros segmentos de la industria agroalimentaria. Ahora mismo se están elaborando programas de garantía de calidad basados en el análisis de riesgos y puntos críticos de control (HACCP), programas que en muchos países se aplican en las propias explotaciones a la mayoría de las especies. La aplicación de este tipo de métodos acrecentará el nivel de seguridad sanitaria de los alimentos, lo que por doquier redundará en beneficio de los consumidores. Los productores siguen demostrando que son capaces de responder positivamente a programas basados en datos científicos y en buenas prácticas de gestión. Los autores llegan a la conclusión de que cada vez se utilizará más el HACCP.

Palabras clave

Análisis de riesgos y puntos críticos de control – Antes del sacrificio – Encuesta – Encuesta entre productores – Garantía de calidad – Inocuidad de los alimentos – Productores – Programas en las explotaciones.



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