

## REPORT OF THE COMMITTEE ON FOOD AND FEED SAFETY

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Vice Chair: John Ragan, MD

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The Committee met on October 21, 2012 at the Sheraton Hotel, Greensboro, North Carolina, from 1:30-5:00p.m. During the presentations there were approximately 70 attendees. At the 4:30 p.m. Committee meeting there were 15 members and 12 guests present.

### Presentations

There were no time specific presentations but all presentations were delivered according to the agenda. The following presentations are included at the end of this report.

- CAST Report - The Direct Relationship between Animal Health and Food Safety Outcomes - Dr. Lowell Midla, President-elect, Council for Agricultural Science and Technology (CAST), Assistant Professor-Clinical, College of Veterinary Medicine, Ohio State University
- Animal Production Food Safety- Perspectives from the Livestock Marketing Association - Dr. Tim Starks, President, LMA
- Market Cow Tissue Residue Surveillance in the United States - Dr. Craig Schultz, Director, Bureau of Animal Health and Diagnostic Services, Pennsylvania Department of Agriculture
- Animal Production Food and Feed Safety Programs in the Pork Industry – Dr. Steve Larsen, Director, Pork Safety, National Pork Board
- Food Safety Inspection Modernization Models -Dr. Bonnie Buntain, Public Health Professor, University of Calgary Faculty of Veterinary Medicine, Canada

### Committee Business

The following was discussed by Chair Bonnie Buntain with members and guests in attendance. Lisa Ramsey, AAVLD Co-Chair, reviewed their discussion of the formation of the joint Committee and reported that they support this move by the Presidents:

#### **Recommendation to the Presidents of USAHA and AAVLD:**

To combine the AAVLD Food Safety Committee and the USAHA Committee on Food and Feed Safety into a single joint committee, the USAHA/AAVLD Committee on Food and Feed Safety.

#### **Background Information:**

After much consideration and review of the meeting activities of both committees over the past several years, the Executive Committees of both organizations believe combining these two committees into a joint committee would be an excellent idea, and that both committees would benefit. The AAVLD Food Safety Committee and the USAHA Committee on Food and Feed Safety have a common primary focus: food safety. Even the topic of feed safety, included in the USAHA committee, can be and often is relevant to food safety in addition to being relevant to animal health. The topics discussed at the meetings of each of these separate committees would be of interest to the members of each committee. A review of the purpose of each of these committees reveals that the missions of each are similar, compatible, and complementary (see the mission statements of each committee below), and that a combined purpose would not significantly change the purpose of either, but would instead enhance the purpose to the benefit of all the members.

It is recommended that the joint committee meetings occur with the same schedule on Sundays as the current USAHA Committee on Food and Feed Safety meetings. The USAHA Committee has more than twice the number of members than does the AAVLD Committee, and keeping the meetings on Sundays would be the least disruptive to the majority of members of the new joint committee. The combined Committee will begin in 2013. The Committee would be co-chaired and vice chaired by members of each organization for the first year to enhance coordination and direction of the newly formed joint committee.

The following are the current separate committee mission statements:

**USAHA Committee on Food and Feed Safety Mission Statement:**

The purpose of the Committee on Food and Feed Safety is to serve as a focal point for consideration of food safety and feed safety issues within USAHA. The Committee should recommend food/feed safety policies to protect animal and human health and be active in all areas of food/feed safety concerning foods of animal origin. Further, the Committee should provide a national forum for debate on minimizing chemical, microbial and physical contamination in the feed of food producing animals and provide specific recommendations, using the latest available knowledge to enhance the safety of animal feeds.

**AAVLD Food Safety Committee Mission Statement:**

The AAVLD Food Safety Committee provides a national forum for the discussion and exchange of information pertaining to the food safety testing performed in Veterinary Diagnostic Laboratories. The committee members review and discuss issues and activities related to the safety of animal derived food with the goal of further integration of prevention, preparedness, response, and recovery plans between federal, state, and agriculture animal industry partners. In addressing issues and concerns that may affect animal emergency preparedness or response, the committee may make recommendations to influence policy or government, academic, research, or industry groups by proposing actions to reduce the potential of adverse effects of animal emergencies on the U.S. animal agriculture industry.

**Proposed new mission statement of the USAHA/AAVLD Committee on Food and Feed Safety:**

The purpose of the joint USAHA/AAVLD Committee on Food and Feed Safety is to provide a national forum to discuss current and emerging issues and information pertaining to all aspects of food and feed safety and related veterinary diagnostic testing of foods of animal origin. The Committee should recommend food and feed safety policies to protect animal and human health.

The USAHA Committee on Food and Feed Safety also supports this initiative by the Presidents. The following advice was provided by the membership:

- Engage both committees in conference calls to discuss the process
- Create a joint subcommittee to create the mission statement
- Create a joint subcommittee to plan the next meeting agenda and implement the program
- Ensure that there is agreement on the length of terms of the Co-Chair and a process for succession planning
- Begin with the Chair and Vice/Co-Chairs for the initial planning for perhaps the first one to two years

**Other business: Recommendations for next year's joint meeting topics**

- Food Safety Modernization Act (FSMA) update, regulatory impacts state, local, national and international
- Discuss on conference calls with joint committee members the upcoming 2013 program
- Update from Food Safety Inspection Service (FSIS) on non-0157 Shiga Toxin-producing E.Coli (STECs) and testing
- Food source attribution update - Steve Larson volunteered to assist
- Food security regarding continuity of business operations for continuity of food supply
- FDA's and industry's response to pet foods, including pet jerky treats; public health concerns (since 2007)
- Dairy food safety concerns – fancy foods, artisanal, raw milk, organic food safety and practices
- VetLRN update - animal foods and feed surveillance, regulation, etc.
- Food safety concerns with BP oil spills, veterinary laboratory network, food safety concerns –include FDA, NOAA, etc.

**Resolutions**

None were presented to the Chair by the membership.

With no further business the meeting was adjourned.

## **CAST Report - The Direct Relationship between Animal Health and Food Safety Outcomes**

Lowell Midla

President-elect, Council for Agricultural Science and Technology (CAST), College of Veterinary Medicine, Ohio State University

Dr. Midla stated that many groups in society, including politicians, activists, scientists, and stakeholders are advocating significant changes to livestock production practices. These changes include modification of stocking densities, limitations on antimicrobial use, and requirements for outdoor animal “experiences.” Such changes may affect animal health, productivity, and food quality. It is critical that decision makers understand the relationship between animal health and food safety, which is a complex association requiring careful evaluation of many variables. He presented qualitative and quantifiable impacts that animal health has on public health risk due to foodborne illness from meat, milk, eggs and poultry through examples of research. He identified the factors that impact animal health that are described in the CAST report and highlighted specific research needs. He explained the direct and indirect impacts that animal health may have on public health, such as directly through diseased or dead animals entering the food chain, and indirectly such as subclinically ill animals likelihood of contaminating the food chain through adhesions breaking and allowing contents to spill over into the carcasses causing an increase in the levels of *Salmonella* and *Campylobacter*. He presented evidence that about 7% of healthy appearing pigs had internal adhesions at slaughter and according to their model that could increase human illnesses. More research is needed for quantitative risk models that provide data on subclinical illnesses in livestock and carcass and product contamination rates. He referred the audience to the website for the complete report: [www.cast-science.org](http://www.cast-science.org)

## **Animal Production Food Safety - Perspectives from the Livestock Marketing Association**

Tim Starks

Livestock Marketing Association (LMA)

The Committee was pleased to have an update from the LMA whose 1,200 members handle about 70% of the regular selling livestock markets in the US. These members move about 33 million cattle, nine million hogs, and three million sheep a year. His key points were:

- LMA members play a key role in food safety by meeting regulatory and guideline requirements of multiple government agencies including EPA, OSHA, US Department of Labor, USDA, and State Departments of Agriculture
- Licensed veterinarians inspect all animals and provide health certifications
- LMA worked with the cattle identification (ID) group to develop a grassroots identification system that they presented to the USDA and was integrated into the government's new approach to ID
- LMA members are more likely to adopt programs in food and feed safety when they recognize the economic benefits, such as the Beef Quality Assurance programs and humane handling practices
- LMA plays a big part in animal disease surveillance and disease control efforts

## **Market Cow Tissue Residue Surveillance in the United States**

Craig Schultz, Director

Bureau of Animal Health and Diagnostic Services, Pennsylvania Department of Agriculture

### **Structure of the National Residue Program**

Verification of the slaughter industry's control of chemical and animal drug residues is performed by the USDA, Food Safety and Inspection Service (FSIS) through its participation in the National Residue Program (NRP). Other Federal agencies that cooperate in National Residue Program activities are the Food and Drug Administration (FDA) in the Department of Health and Human Services and the Environmental Protection Agency (EPA). The FDA's Center for Veterinary Medicine is responsible for veterinary drug approvals, establishing food animal drug tolerances, control of animal drug residues in milk, and enforcement activities when violative drug residues are detected in animal tissues at slaughter. The control of violative residues in slaughter populations under the NRP is performed by USDA, FSIS. This activity includes two programs: the National Scheduled Sampling Plan and the National Residue Surveillance Plan (also referred to as Inspector-Generated Surveillance). The National Scheduled Sampling Plan is a directed sampling program and determines the effectiveness of FSIS residue control activities. Samples are collected from inspected and passed carcasses and tested for a variety of specified chemical residues, including animal drug residues. The National Residue Surveillance Plan is an inspector-generated sampling plan in which animals are selected for testing based on the identification of high violation risk ante mortem and post mortem conditions as well flock/herd history. This testing serves to verify control of residues under the regulated slaughter establishment's hazard analysis and critical control point (HACCP) system. Plants that receive residue - violative animals are responsible for declaring residues as a hazard reasonably likely to occur in their hazard analysis and implementing measures to reduce this hazard, ultimately to an undetectable level.

### **Ante Mortem Conditions and Residue Violation Risk**

Both ante mortem and post mortem observations are used by inspectors to identify animals that are candidates for residue screening. These conditions are described in FSIS Directive 10,220.3. Ante mortem conditions that result in animals being declared suspects include inflammatory conditions, lameness, dehydration, conditions of the jaw (actinobacillosis/mycosis) and ocular conditions (especially ocular squamous cell carcinoma). In the past, large numbers of residue screens were performed on non-ambulatory cattle. With the banning of down-cow slaughter in December 2003 due to concerns over bovine spongiform encephalopathy this source of ante mortem suspect cattle disappeared. Cattle that present "slow", dull, dehydrated, depressed, or severely lame on ante mortem inspection are at higher risk for animal drug residue violation. Cows with actinobacillosis/mycosis are at low risk of residue violation but are made ante mortem suspects because of the similarity of "acti" lesions with those of bovine tuberculosis. Cattle with ocular squamous cell carcinoma are also low risk for violative residues but are suspected because of the risk of metastatic neoplasia resulting in carcass condemnation.

Cattle identified by inspection personnel as ante mortem suspects are sequestered in a designated suspect area in the slaughter facility away from cattle that pass ante mortem inspection. Identification devices and all examination findings are documented by the ante mortem inspector. An official US suspect tag is applied to the animal's ear. Suspect cattle are moved to the slaughter floor as specific lots and each carcass receives an individual post mortem inspection, designation for residue screening if indicated, and disposition by a USDA veterinarian.

### **Post Mortem Conditions and Residue Violation Risk**

Animals passing ante mortem inspection may be identified on post mortem inspection with lesions associated with increased risk of animal drug residue violation. High violation risk post mortem conditions are described in FSIS Directive 10,220.3. Animals with active inflammatory conditions including mastitis, metritis, peritonitis, nephritis, cellulitis, and pneumonia as well as certain metabolic conditions such as abomasal disease in cattle are at increased risk of violation. Data collected between 1997 and 1999 at a large Northeastern US slaughter establishment demonstrated the importance of post mortem conditions as triggers for residue screening. Comprehensive screening of all cattle with high violation risk ante mortem and post mortem conditions during that period demonstrated 85% of residue violations identified were associated with post mortem conditions. Selecting animals for residue screening based on ante mortem conditions, primarily non ambulatory cattle, was conventional in FSIS field inspection for many years prior to 2004.

Residue violation risk is inversely proportional to the chronicity of inflammatory lesions identified at slaughter. Active sub-acute to acute inflammatory lesions are most likely to be associated with a violative animal drug residue. Similarly there is no strong correlation between the extent of chronic inflammatory lesions and residue violation. Many sub-acute to acute inflammatory conditions are localized and can be trimmed allowing salvage of the unaffected portions of the carcass however residue screening is indicated in such cases.

In an attempt to identify targeted post mortem conditions most likely associated with residue violation, incidence of violations for each of the common ante mortem and post mortem triggers for testing was compared for all violations occurring in calendar year 1999 in a large Northeast US market cow slaughter facility. The results of this comparison demonstrated a relative uniformity of violation risk across the categories with only two categories slightly lower than one standard deviation from the mean incidence (abomasal disease and peritonitis). Carcasses condemned as a result septicemia and pyemia findings at post mortem inspection had a significantly higher risk of residue violation ( $>2\sigma$ ).

## **Selecting Cattle for Residue Screening in Large High Line Speed Slaughter Establishments**

Suspect cattle identified during ante mortem inspection are examined, documented and sent to the slaughter floor in specified suspect lots. On arrival at the slaughter floor suspect carcasses are subjected to routine inspection procedures and then presented to the veterinarian for final post mortem inspection. A disposition is performed and tissues are collected for residue screening on suspect cattle with high violation risk conditions whether the carcass is passed or condemned. Even though a carcass is condemned, if a residue screen is positive and a violative residue is identified, FSIS will report the violation to FDA and an investigation will ensue. All documented ante mortem findings are available to the veterinarian performing the post mortem disposition. Ante mortem suspect cattle that are passed on post mortem inspection with negative residue screening results are released to the edible channel. Condemned carcasses are discarded and enter the inedible/ rendering channel.

Cattle that pass ante mortem inspection are sent to the slaughter floor in lots identified by source (auction market, individual producer, dealer, broker, etc.). Once routine slaughter floor post mortem inspection procedures are completed there are three potential outcomes: 1) no significant post mortem lesions are identified, the carcass is passed and enters the edible channel; 2) localized high residue violation risk conditions are identified, the carcass is retained, and tissue samples are collected for screening; and 3) more extensive pathology with the potential for carcass condemnation is identified and the carcass and associated parts are held for final veterinarian-performed disposition. Once examined, these carcasses may be passed for edible use, retained pending residue screening results, or condemned and discarded to the inedible rendering channel. Once again, condemned carcasses with high residue violation risk conditions are subjected to residue screening and if found violative will be subject to an FDA investigation.

### **In-Plant Residue Screening Methods**

Various antimicrobial drug residue screens have been employed by FSIS during the approximate 40 year history of the National Residue Program. For adult cattle these screening methods included the swab test on premises (STOP), the fast antimicrobial screening test (FAST), and the kidney swab inhibition test (KIS)<sup>™</sup>. The KIS<sup>™</sup> test is a commercially available screen that was introduced to the FSIS field in 2008 and is now recognized as the official FSIS in-plant residue screening method. It is considered to have greater specificity for violative levels of  $\beta$ -lactam antimicrobial drugs and greater sensitivity for sulfa compounds than the FAST. It also provides a shorter turn-around time compared to the FAST.

### **Handling of Residue Screen-Positive Cattle**

Retained carcasses that test negative on the residue screen are released to the edible channel. Carcasses that test positive have kidney, liver, and muscle samples collected and submitted to a federal laboratory for quantitative and qualitative residue analysis. These carcasses remain in retention pending results. To minimize losses, large establishments debone, freeze, and hold meat under retention pending outcome of the residue analysis. There are considerable handling costs and other losses to industry associated with holding results-pending carcasses.

### **Disposition of Carcasses and Organ Tissues Based on Laboratory Results**

Once laboratory results are received a final disposition of retained carcasses is performed. Since tissue tolerances are established for most animal drug residues, fate of the product depends on whether or not tissue levels exceed FDA-established tolerances. Depending on the animal drug and its distribution in various tissues, condemnation may be restricted to specific tissues (e.g. liver or kidney) or the entire carcass and all associated organs may be condemned. When the FAST was the principal screening test used, of all in-plant screen positive carcasses, approximately 20% were violative, 60% were positive for a residue but below tolerance, and 20% were negative with no residue identified. Carcass meat that is condemned for violative animal drug residues is not eligible for use as pet food and must be discarded appropriately, in most cases to an approved landfill.

### **Trace-Back of Residue Violations**

Once a violation is confirmed, plant management is notified and must produce source information for the violative animal. In the case of market dairy cows which are often individually sourced through auction markets trace-back procedures can be complex. Large plants maintain fairly accurate tracking of animals on the slaughter line through the use of lot and position numbering systems correlated with a bar-coded sequence number for each carcass entering the slaughter line. In addition, identification devices are collected, bagged, sequenced by lot and position and saved. These tag collections are maintained for compliance with the USDA Market Cow Identification Program (MCIP) under the Federal Brucellosis Eradication Program. Additional federal requirements for tag collection and retirement at slaughter plants are under consideration as the National Animal Disease Traceability final rule is about to be published. Collected and sequenced identification devices can be retrieved and saved by inspection personnel in the event of a positive residue screen or if a suspect lesion for bovine tuberculosis is identified.

When trace-back information is obtained by FSIS it is entered into the Residue Violation Information System (RVIS) database. This is a shared FSIS-FDA database. FDA uses this trace-back information to initiate a violative tissue residue investigation.

Animal trace-back could be significantly enhanced through the use of electronic animal identification systems allowing real-time source identification of carcasses on a slaughter line. In addition to improving the accuracy of violative residue

traces, this technology would provide numerous benefits to public health, in the event of a meat product-associated food borne outbreak or animal disease outbreak.

Animal traceability is complicated by the convoluted movements and changes of ownership of slaughter animals in the marketing system. As the number of transactions increases during the marketing phase, traceability declines. Under the proposed Federal Rule addressing livestock traceability current methods of animal identification may change. Back tags for slaughter animals may be phased out changing some established paradigms in slaughter animal tracing. Identification device recovery and retirement at slaughter and rendering plants will be important to the traceability process and incentivizing industry to perform these functions may be challenging.

#### **Addressing Violative Residues Under Hazard Analysis and Critical Control Point-Based Inspection**

HACCP based inspection has existed in large US slaughter establishments since 1998. In the performance of a hazard analysis, slaughter establishments receiving violative animals in their slaughter populations are required to address animal drug residues as a hazard reasonably likely to occur, establish critical limits for the hazard, and take measures to reduce the hazard to an undetectable level. A positive outcome of the HACCP Rule with regard to violative residues has been a more direct approach with producers who deliver violative animals. Under HACCP, once a violation is confirmed the slaughter establishment takes responsibility to notify the producer and obtain assurance of corrective and preventive measures from that producer within days of confirmation. Regulatory investigations by FDA may require months to complete. The impact of timely direct contact by the slaughter plant purchaser of the violative animal with the responsible producer has been very effective in reducing the violative animal drug residue problem. Critical in the feedback loop is a sufficient level of surveillance that identifies a high proportion of the violative animals in the slaughter population. Otherwise violative animals are missed reinforcing marginal residue avoidance practices by producers.

#### **Risk-Based Residue Surveillance Intensity**

Risk of violative animal drug residues varies depending on slaughter animal quality, age, production type, condition, and class. Based on these variables, the expected incidence of high violation risk animals in a slaughter population can be estimated and used as a regulatory performance parameter in identifying plants with inadequate regulatory surveillance applications. In every slaughter establishment there is a high violation risk segment of the slaughter population. In slaughter classes such as finished steers, heifers, and market hogs this segment may comprise a mere fraction of a percent of the total population. Other higher violation risk slaughter populations such as dairy cows may have as many as 15% of the animals in the high violation risk category. Verification of the establishment's residue control effectiveness can only be achieved by comprehensively screening this high risk segment of the population.

Using an estimate of the expected incidence of high violation risk animals in a slaughter population (based on slaughter class, quality and other factors) a slaughter surveillance rate can be determined by expressing the actual number of animals tested as a percentage of the expected incidence of violations. As surveillance rate increases, the actual number of violations rises and levels off as expected incidence of high violation risk animals is approached. As surveillance rate declines there is a point at which the number of violations falls to zero (the surveillance threshold). In plants with very low surveillance rates it is possible to give the false impression of a zero incidence of violative residues when actually the surveillance threshold has not been reached.

#### **Consistent Surveillance of Slaughter Populations**

Successful residue avoidance requires strict adherence of producers to principles of the Animal Medicinal Drug Use Clarification Act. Simply associating a pre-slaughter withhold period to a specific animal drug without regard to dosage, duration of dosage, route of administration, and condition of the animal does not equate to a successful residue avoidance strategy. Additionally, consistent slaughter surveillance that identifies a high proportion of violative residues is essential to reinforce best management practices in residue avoidance. Risk based methods of inspector-generated slaughter surveillance must demonstrate that an acceptable level of residue control has been achieved. Surveillance rates across slaughter classes in the FSIS field are inconsistent based on regional violation rate comparisons and plant-to-plant comparisons within specific slaughter classes. Some of these variations may be attributable to regional differences in animal quality and management, but this should be verified by a level of surveillance sufficient to demonstrate the accuracy of current data. Improved data collection on surveillance testing activity and continued correlation of FSIS in-plant personnel on residue-associated ante mortem and post mortem conditions are necessary to address this problem.

#### **Use of Food Animal Drugs and "One Health"**

The use of veterinary drugs, particularly antibiotics, in food animals is likely to change in the near future. Negative perceptions among federal regulators of antimicrobial drug use in healthy animals are becoming more intense. Limitations on growth promotion use may extend to disease prevention and control applications and this could have a serious negative impact on animal health. Balancing policies on agricultural antimicrobial use with sound public health policy remains a challenge considering the reality of therapeutics in food animal production environments. Food safety concerns over multi-drug resistant food borne pathogens bring further scrutiny on food animal antimicrobial use. Consumer demands for products free of these pathogens are likely to increase. Food animal tissue residues are not likely to produce antimicrobial resistant strains of human pathogens because tissue residue tolerances are sufficiently low to avoid generation of drug resistant pathogens in the human gut. However, demonstrating compliant use of veterinary drugs is critical to maintaining consumer confidence in food animal products and defending use of antimicrobials as therapeutic agents in food animal medicine.



## **Animal Production - Food and Feed Safety Programs in the Pork Industry**

Steve Larsen

National Pork Board

The National Pork Board:

- 15 Member Board
  - Nominated by importers and producers
  - Voted on by Pork Act Delegate Body
  - Appointed by the Secretary of Ag
  - At least 12 states represented
- Pork Act Delegate Body
  - Return-to-state funding (how much each state receives – 43 state associations)
  - Checkoff rate
  - Election of National Pork Board nominees to US Secretary of Agriculture
- Checkoff Revenue (\$70 - \$80 million)
  - 40 cents per \$100
- Everyone Pays/Everyone Benefits
- Oversight
  - Ag Marketing Service (AMS) of USDA
- Pork Act Purpose
  - Promotion
  - Research
  - Education
  - No lobbying or influencing government
- 75 staff members
  - 12 Field Staff
- 2012 budget of \$80 million – Forecast
  - DM, Producer Relations, Communications, Science Technology
- \$16.5 million returned to the states
- \$63 million for national programming
- Supplementals - \$2.5 million
- Safety
  - Pre and Post Harvest
  - New Temperature!
- Quality
  - Consumer Taste and Preference
  - Retail Benchmark
  - Fat
- Human Nutrition
  - Lean Pork in a Healthy Diet
  - Addressing the Negatives

Dr. Larson described the PorkPQA Plus, which will soon undergo new updates. The Pork Industry and the Pork Quality Assurance Plus (PQA Plus) program is comprised of two main elements - food safety and animal well-being. Food safety refers to the practices that minimize physical, chemical or biological hazards that might be injurious to consumers.

Animal well-being encompasses producer responsibilities for all aspect of animal well-being, including proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling and when necessary, humane and timely euthanasia. Food safety and animal well-being have become concerns for consumers, both domestic and foreign. The PQA Plus program has these distinct components:

- Individuals can become certified through an education program; This is achieved through the completion of reviewing the 10 Good Production Practices.
- Producer farms can receive PQA Plus site statu désignation through an on-farm site assessment; and
- As part of a third-party verification process, sites will be randomly selected to participate in an on-farm survey. Results will track the program's progress and determine opportunities for continuous improvement.
- There has been a growing interest among food-chain customers and the general public with the way food is produced.
- Recognizing that they must address these concerns and better position the industry's track record of responsibility, pork industry leaders launched the We Care initiative. The We Care initiative seeks ongoing improvement in the pork industry's production practices, building upon and promoting to those outside the industry its strong record of responsible farming.

- PQA Plus is the cornerstone of the We Care initiative and is a clear demonstration of the industry's commitment to responsible farming and continuous improvement.
- At the heart of this commitment is a statement of ethical principles which asks each and every producer to commit to:
  - Produce safe food
  - Protect and promote animal well-being
  - Ensure practices to protect public health
  - Safeguard natural resources in all of our practices
  - Provide a work environment that is safe and consistent with our other ethical principles
  - Contribute to a better quality of life in our communities
  - The HACCP system focuses on identifying, preventing, eliminating or reducing hazards to safe level in food. HACCP is designed to be a preventative and systematic approach to promoting food safety. An important aspect of the HACCP system is that all individuals involved in a process understand their role and fulfill their responsibilities. An error by ones segment can affect the entire system and its success.
  - FDA Compliance Policy Guide (CPG) 7125.37 – Proper Drug Use and Residue Avoidance by Non-Veterinarians outlines the practices and procedures the FDA would expect to see as part of the operation's standard operating procedure for using animal-health products. Treatment records also can be useful as a management tool.
  - The Federal Animal Medicinal Drug Use Clarification Act (AMDUCA) in 1994, established by which FDA-approved drugs could be legally used in food producing animals in a way other than expressly directed on the label. AMDUCA extends the privilege of extra-label use of drugs only to veterinarians and only when "the health of an animal is threatened or when suffering and death may result from failure to treat the animal."

Dr. Larson reviewed each component of the PQA and then discusses feed hazards. The biggest challenge facing producers is getting the mixture right. Of eight potential feed hazards to address, animal drugs and pesticides are of most concern. Seventy percent discuss with or visit their feed company to determine feed safety procedures. Feed companies and vets are leading information sources about feed safety. For the most part, producers do not consider the NPB as a resource and the NPB is looking at ways to improve this. Of their surveyed producers, 27% are interested in an on-farm program for feed safety training and 15% would volunteer to participate in feed safety pilot training program.

## Food Safety Inspection Modernization Models

Dr. Bonnie Buntain

Public Health Professor, University of Calgary Faculty of Veterinary Medicine, Canada

Due to a speaker cancellation, Chair Buntain volunteered to share her experiences studying the Quad countries (Australia, New Zealand, Canada and the USA) as they undergo food inspection reforms.

Why modernize food inspection systems?

- The way that food is produced and distributed has undergone fundamental changes in recent decades.
  - More complex, driven by widespread changes in methods of food production and processing, coupled with rapid increases in global food trade
  - Consumer demands for more diverse and innovative food choices (e.g., ready-to-eat meals)
- The food processing industry has also become more technologically advanced
- Industry is seeking to remain competitive by developing new products and accessing new markets.

What is involved with regulatory reforms for modernization?

- New Acts and authorities for government
  - Food Bill, Safe Foods for Canadians Bill, Food Safety Modernization Act FDA, etc.
  - Improved alignment with new food legislation
- Regulatory reviews prior to legislation action
  - Compliance costs
  - Regulatory international practices
  - Consistency, equity of new regulatory requirements
  - Risk based versus prescriptive regimes
  - Trade impacts
  - Resources required
- Extensive consultation process

What are some of the key areas that governments are addressing to enable this change?

- Clarification of national standards for all foods sold within and exported from the country
- Provide key risk management tools under new Acts
- Shift onus of responsibility from government to food business operators
- Determine that governments are not good at managing a large human resources business, but can be very good at managing knowledge and ensuring compliance through regulatory oversight
- Enhanced imported food regime
  - Move away from lot by lot inspection and towards greater reliance on the system (dependent on foreign country requirements, agreement);
  - Expand recognition of foreign country food inspection systems to potentially reduce level of oversight required by government on imported products.
- New registering requirements for food businesses – import and domestic
- Improvement of penalty provisions
- Improvement of enforcement regimes
- Improved cost recovery strategies
  - Public good versus private business gain
- Replace old regulations with new risk-and-outcomes based regulations- flexibilities for industry
- Devise ways that industry shares food program control data immediately with government, pays for testing, and in return receives good service

What are some key features of risk-based inspection?

- Apply different levels of risk and appropriate government oversight according to the food business and compliance history
- High risk food production - more regulatory control and costs to the business
- Government conducts risk based audits of the effectiveness of regulated party's controls:
  - This would require an ability to identify, understand and verify inter-related processes as a system and their inter-dependencies and understand the impact of deficiencies through the system

What is entailed in a modern inspection verification system?

- Verification – the act of determining the food business is complying with the regulatory tool that is applicable to that business; operator demonstrates they are using the regulatory tool to deliver safe/suitable food
- Performance based verification to reward businesses with good compliance and food controls
- Third party verification programs that operate as recognized government representatives
- Government or quasi-government verification agencies/organizations
- Change in inspection from prescription, task based verification to outcomes based verification is a cultural and training/educational shift

- Verification Skills and Knowledge
  - Communicate with regulated party at all levels
  - Assess compliance by conducting interviews, observation and inquiry, and review of documentation and records
  - Analyze, verify and consolidate evidence
  - Prepare compliance verification reports in plain language with follow up plans and conclusions
  - Professional behaviour and leadership
  - Problem solving
  - Critical thinking, analytical skills, and objectivity
    - Know sources of risk in a food operation or with a product; assess whether the regulated party's control is adequate (valid) and effective; and, whether compliance has been achieved
  - Root cause analyses
  - Business and organizational practice
  - Analyse information to support decision-making

Summary:

- Modern food technologies are evolving quickly
- Consumer demands for safe, affordable and convenient foods are growing
- Industry needs flexibilities to be innovative to remain competitive in the global food arena
- Governments seek effective and efficient use of its resources in domestic, export and imported arenas
- Verification, auditing, risk-based, and outcomes based regulatory regimes are emerging and driving changes in food inspection systems globally