Merging Values & Technology Provides Opportunities, Faces Challenges

The world population is growing at 1.1 percent per annum, and urbanization is leading to the Westernization of diets and a demand for higher value-added foods. A result of population growth, income growth and urbanization is increased food demand—with food production needing to grow by more than 40 percent by 2030, and more than 70 percent by 2050.

Speaker Lowell Randel, science policy director for the Federation of Animal Sciences Societies, listed seven challenges that agriculture in the 21st Century faces that underscore the importance of merging technology and values: 1) Managing new pests, pathogens and invasive plants; 2) increasing the efficiency of water use; 3) reducing agriculture’s environmental footprint; 4) growing food in a changing climate; 5) managing the production of bioenergy; 6) producing safe and nutritious food; and 7) assisting with global food security and maintaining abundant yields.

Randel said the President’s Council of Advisors on Science and Technology (PCAST) Report on Agricultural Preparedness lists six recommendations to address the seven key challenges. Among the recommendations are increasing the budget for the National Science Foundation for basic science relevant to agriculture from $120 million to $250 million per year, increasing the U.S. Department of Agriculture budget for competitive funding of extramural research from $265 million to $500 million per year and creating six large, multi-disciplinary innovation institutes focused on emerging challenges, funding these at $25 million a year for five years.

He added that the PCAST Report is resulting in “some movement favorable to agriculture.”

Addressing Farm Animal Integrated Research 2012 (FAIR 2012), Randel said FAIR 2012 brought together more than 160 representatives from academia, government and industry who identified research, extension and education priorities and strategies needed to support animal agriculture for the next five to seven years. Modeled after FAIR 95 and FAIR 2002, FAIR 2012 involved a year-long planning process and resulted in information that will be shared with policymakers in Congress and with Federal agencies.

He said three major themes, or areas in which investments in the animal sciences should be focused to meet future needs, emerged from the FAIR 2012 process: food security, One Health and stewardship. The FAIR 2012 report states the following regarding food security: “In order to meet increasing demands in a sustainable way, food producers must continue to increase the efficiency with which they use limited natural resources, placing a premium on increased production efficiency in animal agriculture. Compounding the challenge of increased production with limited resources is the diversion of food and feed crops into bioenergy, effectively taking land and resources out of the food security equation. All of these factors point to the need for increased investments in science to increase production capacity and efficiency.”

Addressing stewardship, the FAIR 2012 report states: “Animal agriculture touches many
ADT Forum on Tap, Aug. 6-7

Message from the Chairman of the NIAA Board, Annette Jones

Besides abundant sun, a bit of wind, just the right amount of rain and hopefully a blissful vacation squeezed in somewhere, this summer brings another opportunity to come together and work on improving the implementation of the U.S. Animal Disease Traceability Rule.

I am looking forward meeting with my colleagues from across the country next month in Denver at the ADT Forum, Aug. 6-7.

Many people are finding that just enough time has past since this rule became effective earlier in the year to get a feel for gaps in the rule, find areas where states could work together to improve harmonization and thereby simplify trade related to the rule, and look at how to optimally leverage technology to improve compliance with the rule.

I am also pleased that the National Institute for Animal Agriculture and the United States Animal Health Association are working together to host this meeting. Both organizations are leaders in cross-species animal agriculture issues, and both draw from a very strong and diverse membership.

We should have an interesting discussion, and hopefully end the meeting with some key actions that will be taken when we all return home.

See you in Denver!

NIAA Welcomes These New Members

State
Delaware Department of Agriculture
New Jersey Department of Agriculture, Division of Animal Health
Utah Department of Agriculture
Vermont Agency of Agriculture

Individuals
Dr. Subodh Das
Dr. Jeremy Van Boening
Annual Conference
Continued from Page 1

Aspects of our society: providing essential nutrition, balancing natural resources, and fostering animal well-being. In order to meet global food demands in a sustainable way, investments in science will be critical to increasing the efficiency with which limited natural resources are utilized. Water quality and quantity are major issues, as competition for this precious resource intensifies. Society also continues to have concerns about climate change and the impacts that animal production may have on climate. These factors demonstrate the need for increased investments in science. Great successes in resource use efficiency have already been realized through technological innovations. . .

The FAIR process identified numerous crosscutting issues that apply to each of the three focus areas, including but not limited to, size and scope of needed projects, pipeline for new scientists and industry professionals, enhanced collaborations, increased public awareness, regulations, data mining and risk analysis.

While animal agriculture has a significant impact on America’s rural economy and is a major driver for rural America, Randel stressed that federal investment in animal science is not proportionate with the economic contributions of animal agriculture. The 2014 Agricultural Research Service’s total research programs budget is $108 billion. Of the total 2014 ARS budget, livestock production has been appropriated $73 million, compared to $229 billion for crop production, $219 million for environmental stewardship, $119 million for food safety, $95 million for human nutrition, $85 million for new products/product quality/value-added and 4 percent for other. Funding trends have animal science at a disadvantage, as only two groups saw a decrease in budget from 2013: livestock production and new products/product quality/value-added.

Randel shared that discussions between the USDA and National Academy of Sciences (NAS) in 2012 resulted in the development of a new study “Considerations for the Future of Animal Science Research” that has a six-month timeframe and could start as early as mid-2013. The study has five key purposes: 1) assess global demand for products of animal origin in 2050 within the framework of ensuring global food security; 2) evaluate how climate change and limited natural resources may impact the ability to meet global demands for animal products; 3) identify factors that may impact domestic ability to meet demand for animal products; 4) identify resources needed to develop and disseminate this knowledge and technology; and 5) describe the evolution of sustainable animal production systems relevant to production and production efficiency. The goal is to have results ready to impact FY 2015 government budget process.

Technology, Biotechnology

Speaker Deborah Perkins, managing director of RaboBank International-Dallas, pointed out that new technology, new production techniques and new ideas can increase efficiency and the sustainable, responsible use of resources and can take the form of biotechnology, energy efficiency, labor-saving devices, water reduction strategies, greenhouse gas (GHG) reduction and technology like Cogeneration.

“Technologies with a positive impact on profitability will be attractive to players all along the food animal chain,” Perkins stated.

Perkins underscored that consumers, an important part of the supply chain, are becoming less trusting and will have an impact on whether technology is taken up.

“Because consumers don’t understand certain things, animal agriculture must help educate them if technologies such as genetically modified organisms (GMOs), antibiotics, etc., are to continue to be used,” Perkins stated.

Perkins noted that certain capital expenditures will be needed to access certain technology, and farmers will need sufficient scale to access some technology. A challenge, she said, is to develop technology where consumers benefit and technology is not developed simply to increase production and potentially lower prices to agriculture. She added that technology acceptable in this country may not be acceptable to other countries.

Bryan Dierlam, director of government affairs for Cargill, provided data showing that biotechnology available to U.S. farmers has advanced food production, adding that, until somewhat recently, production increase has been a result of yield and not acreage expansion.

Dr. Alison Van Eenennaam, cooperative extension specialist, animal genomics & biotechnology, Department of Animal Science, University of California-Davis, didn’t mince words. She explained that biotechnology—any technological application that uses biological systems, living organisms or derivatives thereof to

Lowell Randel, center, answers a question during the wrap up of NIAA’s Annual Conference’s Opening General Session. Flanking Randel are Bryan Dierlam and Dr. Alison Van Eenennaam who also spoke at the Opening General Session.
Annual Conference

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make or modify products or processes for specific use—has been greeted with mixed acceptance. She said, while certain biotechnology advances used in genomics and breeding are generally accepted—i.e. artificial insemination (AI), estrus synchronization, embryo transfer, etc., other biotechnology applications have not received widespread acceptance, including cloning and transgenesis.

Borrowing a quote from Norman Borlaug, Van Eenennaam said, “Technology is available or advanced in the research pipeline to feed 10 billion people on a sustainable basis. The question is whether farmers and ranchers will be permitted to use the technology.” She added that, theoretically, certain animal biotechnology applications, including genetically engineered animals (GE), would appear to align with many sustainability goals.

Van Eenennaam explained that technology comes with risks and benefits, and “there must be some practical considerations of what technology best suits a country and its production system.”

In addition to negative consumer perception pertaining to GE food-producing animals, Van Eenennaam said another key challenge that GE animals face is the extensive length of the regulatory process. Her case in point is the fast-growing salmon. The original GE salmon was produced by university researchers in Canada in 1989. To date, the company has expended more than $60 million to bring its fast-growing salmon through the regulatory process and to market, with the final regulatory decision still not announced.

Van Eenennaam said she is baffled regarding some consumers’ stand regarding GE crops. She explained that GE crops came to market in 1986, and, in 2012, 17.3 million farmers grew GE crop varieties. Humans and livestock have consumed billions of meals without a single case of harm attributable to the GE nature of the materials consumed. Regulatory policies add years and millions of dollars to the cost of developing GE crops and animals. She then brought forth a question to ponder: “Is this level of scrutiny aligned to science-based risks associated with the technology or is this level of precaution making the deployment of this technology beyond the means of all but the largest, multinational corporations—to the detriment of food security globally?”

Noting a blanket approval of all uses of genetic engineering has no scientific case, she maintains that a scientific case for certain safety testing is lacking. She backed this statement by noting the bulk of safety testing and expenses related to GE animals/fish is to detect “unintended” changes specifically resulting from genetic engineering and that many GE scientists agree that scientific uncertainty does not justify the GE process-based “equivalence” studies uniquely required for genetic engineered animals.

Van Eenennaam is among the scientists who agree that the genetically engineered regulatory framework should be connected to the best available science. She said, while regulation to ensure the safety of new technologies is necessary, the trigger for regulatory review should be the novelty of the introduced trait—regardless of how it was derived—and not the process used to introduce the trait.

“The severity of regulatory control should be related to the actual, relative risk associated with the novel characteristic,” she stated. “Phenotypes with a history of safe use should be exempted from regulatory review regardless of the methods used to produce them. Regulatory frameworks should formally evaluate the reasonable and unique risks associated with the use of GE animals in agricultural systems and weigh them against those associated with existing conventional systems and those of in-
action. In addition, the risk should be weighed against the benefits.”

Dierlam underscored that, despite biotechnology’s ability to increase yields and grow production and food supply, not all countries agree or move with the same sense of purpose or timing. Often product approved in one country may not be approved in another. He said, when the non-approving country is small, this may be a minor issue. When it is a large importing country, however, it can create unacceptable risk for commercial companies—especially if it does not stay segregated from the approved product as it travels through the supply chain.

Dierlam said six key policy areas can help ensure sustainable, affordable, safe, responsible and secure food for the future: 1) honoring comparative advantage; 2) enabling open markets; 3) investment infrastructure; 4) improving agricultural productivity; 5) harmonization of rules and regulations; and 6) ensuring success of smallholder farms.

Citing 1800s political economist David Ricardo, Dierlam said, when Ricardo was laying out his arguments of comparative advantage in 1817, he argued the world will always raise the most food the most economically if every farmer plants the right crop for the soil and climate and then trades with others. Dierlam agrees, adding that countries benefit from growing what they are good at, export the surplus and buy what is deficient.

“Honoring comparative and trade is fundamental to ensuring abundant and secure food for the growing world’s consumers,” Dierlam stated.

During volatile times, Dierlam said challenges usually manifest themselves. Poor trade policy based upon snap political reactions to volatility can result in food insecurity. It is also important not to conflate food security with self-sufficiency. Unsustainable decisions could be made, scarce resources consumed and irreparable ecological damage done in the name of self-sufficiency when the right answer is to trade.

He called a trust-based system of trade where countries and companies deliver on their commitments “imperative.” To him, this entails no export bans or trade restrictions post-contract.

“Without trust, countries may pursue policies they believe to be in their self-interest but may prove counterproductive to global food security,” Dierlam interjected.

To move the bounty of U.S. crops, Dierlam said, requires a continued focus on infrastructure—or U.S. competitors will get the advantage and serve global consumers faster and more efficiently.

With the United States in a difficult fiscal period, and as long as the mandatory side of the federal budget grows unabated without meaningful, significant and politically painful reform, Dierlam maintains that significant increases in funding for infrastructure and virtually everything else will be difficult.

Dierlam wrapped up his presentation warning those in animal agriculture not to allow animal rights activists to set our agenda.

“Those involved in animal agriculture should keep focused on the majority—consumers who value farmers and their ability to provide the United States and other countries with food,” Dierlam stated. “Animal agriculture should develop a united message that resonates with the rank and file and not get caught up in the hype stirred by animal rights activists and vegetarian advocates.

“After all, the bottom line may be that it’s not a value question but a preference question.”

Food safety was the area focused on by Dr. John Ruby, Technical Services, JBS USA. Ruby said approximately 300 million Americans purchase meat animal protein, and “each person deserves the reassurance that the product purchased is safe.” He stressed that food safety must start on the farm to go to the table, with no segment of the meat industries exempt when it comes to food safety responsibility.

“The question arises whether each segment is doing enough to control pathogens through the meat protein system,” Ruby stated.

Ruby explained that packers are extremely aware that certain organisms are inherent to their business and follow Food Safety and Inspection Service (FSIS) guidelines to lessen pathogen contamination. Packers also have in-depth, multiple intervention systems and antimicrobial applications systems in place to eliminate pathogens.

“Yet, despite these systems, pathogens are still getting through the system,” Ruby said. To answer this challenge, Ruby said, new technologies and a comprehensive system are needed.

Noting that a comprehensive food safety system will have a significant associated cost, Ruby contends that the conversation around how to move forward needs to commence. Conversations, he said, must include the importance of pre-harvest practices and have those practices complement harvest plant practices.

Ruby noted that packers are interacting with, sharing best practices and learning from each other.

“But, no one segment—feedyards, processors, packers—can do it alone,” Ruby summarized.
Species-Specific Committees Meet

Aquatic Livestock Committee
Co-Chairs: Dr. David Scarfe and Todd Low

The first official meeting of NIAA’s new aquatic livestock committee met Tuesday, April 16, with the meeting packed to capacity. Three speakers delivered presentations focused on current issues and solutions facing U.S. aquaculture:

2. Dr. Christopher Weeks, Department of Fisheries and Wildlife, Michigan State University, “U.S. Aquaculture: the Past, Today and the Future”

The following seven points were brought forth during the three presentations:

1) The United States lags behind other countries in seafood production with more than 90% of seafood consumed in the United States imported, most of which is farmed in other countries, particularly China and Southeast Asia.
2) U.S. seafood importation is the third largest contributor to the U.S. trade deficit—more than 11 billion—behind petroleum products and passenger automobiles.
3) Global farmed fisheries (aquaculture) production has grown, and continues to grow, at 8% to 11% per year, while U.S. aquaculture has stagnated over the last 10 years.
4) Globally, harvest fisheries are fully exploited and declining. Production from aquaculture today equals harvest fisheries production.
5) Farmed seafood has the best feed conversion and makes the least environmental impact, as compared to any and all terrestrial livestock sectors.
6) Aquaculture offers the greatest opportunity for producing needed animal protein required to feed the rapidly growing human population and future food security.
7) Compared to terrestrial livestock and poultry production which utilizes about seven to 10 dominant species, about 600 aquatic species are farmed globally. Of these, about 80 species are farmed in the United States.

New Business

No resolutions were offered at this first committee meeting. Discussion of the committee focused on identifying issues that require solutions, specifically those that would allow U.S. aquaculture to thrive, grow, be competitive and function as terrestrial livestock industries. These issues include but are not limited to:

- Innovative, applied, industry-useful research and extension efforts in a variety of areas.
- Vision, leadership and political will.
- Industry solidarity, cooperation, collaboration and coordination.
- Reduced Federal and State agency competition and conflicts, and an industry-friendly regulatory environment.
- Economic development incentives, crop insurance and risk management.
- State and Federal disease preven-

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Committee Meetings — Aquatic Livestock
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...tion, control and eradication programs and regulations equivalent to those for terrestrial livestock.

- Sufficient therapeutic and biological agents for treating aquatic animal diseases.
- Optimal approaches for addressing welfare or well-being issues unique to aquatic animals.
- An appropriate forum and venue to address, promote, educate and advocate these issues to producers and the public.

Attendees agreed that inroads could be accomplished through the creation of a National Aquaculture Development Program that would focus on and include national training programs; regional demonstration farms, breeding stations and hatcheries to support commercial aquaculture; startup capital, low interest financing and tax and investment incentives; assistance with financial risk assessment, insurance, marketing and consumer education; and reduced regulatory barriers with assistance in meeting regulations.

Committee members voiced a need to develop a listserv for discussion and alternate-month conference calls to identify, refine and seek solutions to issues and to develop possible NIAA Resolutions.

Bovine Committee
Co-Chairs: Nathan Jaeger & Adam Griffin

The Bovine Committee session focused on two issues: 1) the potential affect and strategic response of a foot-and-mouth disease (FMD) outbreak in the U.S. bovine population and 2) the application of genomic technologies, a continuation of last year’s committee meeting.

Dr. Gay Miller, Department of Pathobiology Veterinary Economist, University of Illinois, opened the presentation section of the session with “Foot and Mouth Disease: A Looming Threat for U.S. Cattle Producers.” Miller began her talk by sharing that a surprising amount of information is still unknown about how an FMD outbreak in the beef business might affect the industry. She pointed to several studies that estimate the economic impact of a U.S. outbreak to cost between $2 billion and $3 billion. Additional studies that looked at human food impacts of FMD estimated that an outbreak in 14 critical counties in the state of Kansas would result in a loss of nearly 1 billion pounds of beef.

The question Miller posited for the remainder of her presentation is “Based on what we know from other countries’ experiences with FMD outbreaks, how could/should we respond to an outbreak in the U.S.?” The obvious question from the animal health community, she said, is how and when to vaccinate in the event of an outbreak. European studies have found that their consumers are not as accepting of a vaccination program as U.S. consumers might be. U.S. consumers are not in-the-know regarding FMD as recent consumer surveys suggest that up to 72% of U.S. consumers believe FMD can be spread to humans—it can’t—and 69% of those surveyed believed they could contract FMD from infected meat—they can’t. In that context, a potential problem from the animal health community’s promotion of FMD vaccination is a potential decline in consumer confidence of meat products.

Calling FMD a “trade disease,” she explained that the impact to trade due to a potential FMD outbreak would be similar or worse to the reaction from the BSE cases. A study conducted by Carpenter, et. al., found that the median economic impact in the state of California would fall between $3 billion and $69 billion, with the economic impact heavily influenced by the response rate of controlling the affected population. She stressed that every hour delay would result in an additional 2,000 animals slaughtered and $565 million spent controlling the disease.

Miller then spent a significant amount of time detailing the results from the OIE report that summarized the differences between responses of UK and Uruguay animal health officials and their respective strategies to FMD outbreaks. She praised Uruguay’s approach by detailing the four-option decision making process they used to help them decide to move away from the stamping out protocol and towards vaccination.

She wrapped up her presentation encouraging animal health stakeholders to plan response strategies now, before an outbreak occurs, consider emergency vaccinations as a viable contingency to controlling a disease outbreak and to think critically about how to administer vaccinations as quickly as humanly possible.

Dr. Kent Andersen, Associate Director, Technical Service, Zoetis, presented “Genomic Technologies in Commercial Cattle Production.” After a brief background of genetic evaluation tools in the recent future, mainly EPD’s and early....Continued on Page 8
genomic marker technology in the beef genetic evaluation system, Andersen presented the critical question about all evaluation tools: “How accurate are they?” He added that current technologies are significantly more accurate than the early tools.

Referring to a Zoetis project with the American Angus Association, Andersen said more than 60 million EPD’s are generated each week. With exponentially more amounts of data being created, he noted that the value of the information is equal to more than a lifetime of progeny from a single cow. Calculating the return on investment for heifers selected for high (50+) GeneMax scores, research shows those females would return about $90 over their lifetime—eight calves—to a commercial cow/calf producer’s bottom line.

Andersen discussed CAB’s GeneMax, a platform that can assign parentage to samples collected plus identify traits like marbling capability and ultimately an index called the GeneMax score. When JBS Five Rivers sorted over 62,000 head of finished cattle in their yards into two groups, either a low or high GeneMax score, they found an $80 per head difference between the two groups. The geneticist stressed that similar applications for the simple, more specific genomic platforms could be used in the cow/calf segment to help farmers make decisions about which heifers to retain. He added, however, that application of this technology is still very slow and only being done by a few very progressive farms and ranches.

Resolutions

Resolution BV11 (Preventing Exotic Ticks and Hemoparasitic Disease Establishment in the United States) was reaffirmed, and Resolution BV14 (Tuberculosis-Free Status on Prevalence of Disease) was allowed to sunset.

Equine Committee Co-Chairs: Dr. Carl Heckendorf and Dr. Tom Lenz

The Equine Committee presentations began with “Equine Welfare, Where Fact and Emotion Collide.” Dr. Thomas Lenz, DVM, Senior Director, Equine Technical Services for Zoetis, zeroed in on the unwanted horse situation, calling it a very complicated and involved problem. He noted that many different opinions exist in a situation where there might not be an absolute right answer.

Lenz explained that science is not always the driver for the unwanted horse or for that matter animal welfare in general. Welfare is based on knowledge and life’s experiences. One survey indicated that HSUS was the most credible source of information when animal welfare was concerned followed by veterinarians who were tied with PETA.

Lenz also discussed the BLM wild horse issue, sharing that it costs $43 million a year to keep these mustangs in sanctuaries. There are an additional 34,000 horses on the range, with that figure doubling every four to five years. Additional points brought forth by Lenz included:

• The average individual who donates to animal welfare does it for emotion. They are well meaning but have little knowledge of the overall issue.
• Science determines risk society determines acceptability. Society looks at moral and ethical aspects not science.
• The take-home message was that we need to accept other people’s values and find common ground to solve the problem. We need to communicate with each other.

Ericka Caslin, Director, Unwanted Horse Coalition, American Horse Council, presented “The Unwanted Horse Coalition: Working Towards Solutions.” The goals of the Unwanted Horse Coalition Caslin said are to: 1) Educate people on the issue of unwanted horses; 2) Reduce the number of unwanted horses;
Committee Meetings — Equine
Continued from Page 8

3) Educate people to seek a solution; and 4) Find ways to decrease the number of unwanted horses. She reported that the Coalition has an extensive website with many educational materials, ways to become involved and links to horse rescues, feed banks, castration programs, euthanasia assistance and full-circle programs.

David Foley, Executive Director of the American Association of Equine Practitioners (AAEP), presented “Equine Welfare Issues – A Look at Two Aspects of the Industry: Horse Racing & the Tennessee Walking Horse.”

Injuries, medication and retirement topped Foley’s list of welfare concerns in the racing industry, noting a need for uniform medication rules between the states. He said the equine industry needs to address track surfaces and injury prevention, retirement of horses—which he called a significant public perception issue—and veterinarians being the doctor as well as the drug store—which leads to a perception problem.

Explaining that some people indicate that the “Big Lick” cannot be accomplished without the practice of ungaited horses soring, Foley reminded attendees that the soring situation was addressed in 1970 with the Horse Protection Act—which was amended in 1976. He said, while the industry was tasked with monitoring itself, this responsibility has not been taken on as it should. The AAEP and the American Veterinary Medical Association (AVMA) have put forth position statements and USDA has new rules in place.

Dr. Kate Jacques, Director of Nutrition, Alltech USA, presented “Feeding the World.” Jacques underscored the importance of the poultry and agricultural industries finding a way to feed the world’s growing population. Emphasizing that nutrition has not kept pace with genetics, Jacques said “the time has come to close the gap” and the answer is to find solutions at the cellular level. She also shared that Alltech has found that “it is not just what we feed but when we feed it” that plays a key role in helping animals reach their full genetic potential.

Dr. Joel L. Cline, Laboratory Director, J.B.Taylor Diagnostic Lab, Elba, Ala., addressed “The Role of the Diagnostic Laboratory in the Poultry Industry.” Cline explained that, in addition to traditional pathology diagnostics, responsibilities of diagnostic labs have expanded to include production pathology as seen through surveillance programs.

Dr. Suzanne Young Dougherty, Director of Veterinary Services, Keystone Foods, presented “What Regulatory Programs Mean to the Poultry Industry” and covered the gamut from avian influenza to Salmonella and from backyard owners to commercial growers and processors. Dougherty said the commercial poultry industries recognize the importance of regulatory programs such as NPIP in sustaining their security of their products, and more than 95% of the U.S. breeding and hatchery industry participate in the program. Dougherty listed several reasons why surveillance is important to the poultry industry: provides early warning capability, provides intelligence to prevent introduction and spread of disease and earlier detection can lead to earlier eradication.

Resolutions

EQ5 (Equine Infectious Anemia (EIA) Control) was amended to add: “Encourage change of ownership testing in all states.”

The background of EQ7 (Radio Frequency Identification (RFID) Requirement for Imported Horses) was amended to add: EHV-1 to the list of diseases. The resolution was amended to state “NIAA recommends that all horses tested for the above diseases be identified with an International Organizational Standard (ISO) 11784 and 11785 (134.2 kHz) and develop a database to store the records of those diseases.”

EQ8 (Equine Infectious Anemia) was sunsetted.

Poultry Committee
Chair: Ray Hilburn

The Poultry Committee session took a concentrated look at sustainability, role of veterinary diagnostic labs and regulatory programs, with speakers providing information pertaining to nutritional influence on phenotype, disease surveillance, production pathology and National Poultry Improvement Plan (NPIP).

Dr. Kate Jacques, Director of Nutrition, Alltech USA, presented “Feeding the World.” Jacques underscored the importance of the poultry and agricultural industries finding a way to feed the world’s growing population. Emphasizing that nutrition has not kept pace with genetics, Jacques said “the time has come to close the gap” and the answer is to find solutions at the cellular level. She also shared that Alltech has found that “it is not just what we feed but when we feed it” that plays a key role in helping animals reach their full genetic potential.

Taking notes during presentations was a common occurrence so participants could share information when they returned to their home states.
Committee Meetings —
Small Ruminant Committee
Co-Chairs: Eileen Kuhlmann and Dr. Gregory S. Lewis

Topics headlining the Small Ruminant Committee session were Ovine Progressive Pneumonia (OPP) advancements, Goat Herd Improvement Program and communicating with today’s and tomorrow’s producers and the public.

Dr. Michael Heaton, Animal Health, USDA/ARS, presented “Reducing Ovine Progressive Pneumonia (OPP) by Selecting for TMEM154 Haplotypes in Sheep,” sharing that the TMEM154 gene has been found to be the factor for resistance and susceptibility to OPP. Of the three haplotypes most common in the sheep population, research shows that haplotypes 2 and 3 are highly susceptible while haplotype 1 is resistant. Heaton said, at this time, removing haplotype 2 & 3 and retaining the homozygous haplotype 1 genetics have been suggested as a way to decrease the prevalence of OPP in the flock. Research also shows that haplotypes 4 and 6, which occur in certain breeds, should also be retained.

Using an example of a cell being a house with many doors and TMEM154 being door handles, Heaton said haplotypes 4 and 6 are considered doors without handles. Haplotype 1 is a door handle that OPP virus slips on and has a difficult time opening the door. The sheep industry can benefit from a commercial genetic test that is now available to screen for the haplotypes.

In her presentation “How Do You Talk to Livestock Producers About Genetics?”, Dr. Debra K. Aaron, professor of statistics, beef cattle genetics, Dept. of Animal and Food Sciences, University of Kentucky, said a majority of incoming undergraduates of animal science in Kentucky are urban, pre-veterinary medicine students whose interests are in companion animals and hands-on experience is required to retain their interest. Producers and producer groups are a different and same story. They are different in that they are interested in different topics. Producers tend to be the same as students as they seek participation, illustration and demonstration as a means to be educated. Aaron said, at this time, discussions of genomics are of little interest to producers.

Dr. Kenneth M. Andries, assistant professor, Kentucky State University, detailed “Goat Herd Improvement Program (GHIP) as Conducted Through KSU.” Andries explained that the goat industry’s herd improvement program was started in 2005, more than 50 years after other species have had herd improvement programs. Andries said when the first goat associations tried to get data for EPDs, he suggested that they start with the basics. Using the Cattle Herd Improvement Plan (CHIP) as a model, basic herd data type of birth/rearing, birth and weaning weight, sex and age of dam was, and is being, gathered that will assist producers in basic herd improvement. Today 52 herds from 24 states and three Canadian provinces are using the GHIP, with Alabama and Tennessee programs in the stages of involvement.

Know your audience and tailor your message for the audience was one piece of advice delivered by Ms. Madeline McCurry-Schmidt, scientific communications associate, American Society of Animal Science, during her talk titled “Communicating with the Public.” Other communication suggestions included return media phone calls, become a valued source for media, use consumer-friendly words and terms rather than industry jargon or scientific terms and invite the media to meet you. If you use statistics during an interview, McCurry-Schmidt urges individuals to explain the statistics. If the media wants a photo, she said to avoid a staff photo and opt for a photo with animals.

Resolutions
No resolutions were reaffirmed, amended or approved.
“Measures to Minimize Influenza Transmission at Swine Exhibitions” given by Dr. Bret D. Marsh, State Veterinarian, Indiana State Board of Animal Health. Marsh described the outbreak of H3N2v influenza virus in swine exhibitors in the state of Indiana in 2012 and the state’s response. He told the group that this experience culminated with a collaborative effort to develop recommendations to minimize disease transmission. Key points in the resulting document included enhanced communication with the exhibitors before and during the exhibition, the use of vaccination, shortening the time the animals remain onsite at the exhibition, the importance of hygiene, and the need to monitor pigs and people for signs of disease.

In her “PRRS Working Group Update” presentation, Dr. Lisa Becton, Director of Swine Health Information & Research, National Pork Board, discussed the continued significance of PRRS on the U.S. swine herd and the need for continued research and additional funding. She provided a look at the National Pork Board’s Swine Health Committee’s short- and long-term objectives for PRRS: “The short-term objective—to accomplish in less than 3 years—is to reduce the impact PRRS has on producers, with a long-term objective to assess the feasibility and financial acceptability of PRRS elimination for producers.”

Becton talked about the Pork Board sponsorship of a collaborative effort involving producers, veterinarians and allied industries to examine the issue of PRRS and identify research gaps to better target the increasingly limited funding. She said the group recommended targeting 2013 research funding into projects addressing immunology/virology, epidemiology/surveillance, and economic impact/cost:benefit analysis. The Pork Board also recently published a summary of PRRS research funded by the Pork Board’s Swine Health Committee from 2004–2011.

Dr. Paul J. McGraw, Assistant State Veterinarian, Wisconsin Dept. of Agriculture, Trade and Consumer Protection, presented “PRRS Management in Wisconsin.” McGraw described the recent implementation of a requirement to report PRRS status, if known, on the CVI when obtaining an import permit to move pigs into Wisconsin. This requirement was enacted at the request of the Wisconsin swine producers in an attempt to better understand the risk associated with the interstate movement of pigs into the state. Currently, the regulation does not prohibit the movement of pigs into Wisconsin based on the stated status.

McGraw said 13 counties in southwestern Wisconsin are designated as a “PRRS Control Area.” The state estimates that 75,000 to 80,000 pigs are imported into the state annually with 90% coming from Minnesota, Iowa and Illinois, and this could possibly lead to a regulatory program to eradicate PRRS in Wisconsin swine.

Dr. Troy Bigelow, USDA/VS, presented “A New Approach to PRV and SB: A Concept.” Bigelow outlined USDA’s latest thinking about suggested changes to the current swine brucellosis and pseudorabies surveillance programs. He explained that, prior to rulemaking, the focus of proposed changes will be performance-based and outcome-focused, combine disease regulations when appropriate, provide details through “guidance documents,” concentrate on improved efficiency and include stakeholder involvement. The program would combine the brucellosis and pseudorabies programs, create performance-based regulations, classify states based on disease mitigation and prevention of disease spread, and streamline and create a national science-based surveillance plan.

Bigelow said each state would be responsible for developing and implementing its own plan that would be assessed by USDA and deemed acceptable following a publication in the federal register and a public comment period. USDA would assign states a status of consistent, provisionally consistent, or inconsistent. USDA could rescind a state’s plan for a variety of reasons. States with provisionally consistent or inconsistent plans would be subject to movement restrictions.

Resolutions
Resolution SW6, The Comprehensive National Surveillance Plan for Swine Diseases, was re-affirmed.
Council Meetings —

Animal Health Emergency Management Council
Co-Chairs: Matthew Cochran and Dr. Lindsey Holmstrom

Presentations at the Animal Health Emergency Management Council focused on technology and tools for U.S. foreign animal disease (FAD) preparedness and response and addressed perspectives across the food chain.

Dr. Barb Masters, Senior Policy Advisor, OFW Law, presented “Emergency Preparedness and Response,” and provided information on current response plans and regulatory action for foodborne outbreaks, to include product recalls. Distinction was made between the roles of USDA/APHIS in protecting animal health and USDA-FSIS in protecting public health. Food defense plans and tools were highlighted, with real-life examples given to demonstrate these efforts.

Consequences and impacts due to foodborne outbreaks—such as product recalls and effects on consumer confidence and perception on animal products—were discussed. To demonstrate the impacts of this response measure, Masters provided a case study on pet food recalls and provided strategies to address food safety concerns and areas needing improvement.

Dr. Lily Edwards-Callaway, Technical Service, Animal Welfare, JBS USA, LLC, presented “Outbreak Response from a Packer’s Perspective.” Edwards-Callaway provided insight on FAD outbreak response strategies for JBS packing plants, which are located throughout the United States and process thousands of livestock and poultry each day. Current food defense plans for this packing plant were discussed. Potential impacts to the packing industry—such as economic costs and determining where to shift cattle movements if certain packing plants are located within an outbreak zone—were presented. While current strategies focus on response and recovery after an outbreak, Edwards-Callaway stressed more work can be done with FAD preparedness and prevention.

Dr. Lindsey Holmstrom, diagnostic epidemiologist, Center for Foreign Animal and Zoonotic Center, presented “Feral Swine and Foreign and Emerging Animal Diseases.” Holmstrom provided information on the current knowledge of U.S. feral swine populations, highlighting concerns of their increasing population size and distribution across the United States.

Potential concerns and involvement of feral swine with potential outbreaks of foot-and-mouth disease (FMD), African swine fever and classical swine fever were discussed, with factors involved in disease spread within feral swine populations explained. Data collection efforts on wild pig populations in California to address knowledge gaps regarding FAD spread within these populations, and preliminary results were presented.

Neil Hammerschmidt, Manager, Animal Disease Traceability, USDA/APHIS/VS, presented “USDA-APHIS IT Update.” Hammerschmidt provided an update on USDA IT efforts for outbreak response on behalf of Mr. John Picanso.

Data sharing and exchange standards and initiatives were discussed, as well as updates and/or progresses on the Surveillance Collaboration Services SCS, EMRS 2.0, MIMs and VSPS systems. Hammerschmidt presented a diagram of where these systems operate within the USDA firewall, and connections to outside systems, such as AgCONNECT and MIM.

New Business

Individuals in attendance identified a need for regular conference calls and/or email exchanges to be conducted so committee members can discuss updates related to emergency management throughout the year and to communicate for conference planning purposes.

Resolutions

Five resolutions—AHEM1, AHEM2, AHEM3, AHEM4 and AHEM5—were reaffirmed. One new resolution, AHEM6, was adopted: Industry Advisory Group – Foot and Mouth Disease Policy and Preparedness

Background: The introduction

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Council Meetings — AHEM

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tion of a foreign animal disease or other animal health emergency would have a devastating impact on United States (U.S.) agriculture.

National Institute for Animal Agriculture members appreciate the intensive preparedness efforts that the United States Department of Agriculture (USDA) and partner agencies continue to make.

Members also recognize that now, with counter measures such as new vaccines, electronic incident permitting for movement, pre-agreed upon biosecurity compliance agreements, etc., on the brink of final development, is an optimal time for more intensive input from producers, processors and other potentially impacted business sectors.

Resolution: The National Institute for Animal Agriculture (NIAA) encourages the United States Department of Agriculture (USDA) to work with NIAA, USAHA, and other stakeholders to form a foot and mouth disease policy and preparedness working group, composed of interested businesses, academia and State Animal Health Officials. Because NIAA membership includes cross-species business interests and business organizations composed of producers, processors, bankers, suppliers, academia, etc., NIAA is willing to and should be a key member of the advisory committee.

Animal Care Council Co-Chairs: Sherrie Niekamp and Jim Fraley

The Animal Care Council session highlighted the impacts of implementing animal welfare standards, animal welfare implications in a foot-and-mouth disease (FMD) outbreak scenario and research showing consumers’ attitudes toward farming. Those in attendance also learned the preliminary results of three different housing types used in egg-laying systems.

Dr. Zoë Davies, General Manager, National Pig Association, England, presented “UK Experience with Pig Welfare.” The United Kingdom has 400,000 breeding sows and 4.2 million total hog inventory, with about 2,000 assured hog farms accounting for 92% of the production. The country’s “Farm Assurance” program is full-chain assurance of traceability, and uses the Red Tractor label to differentiate their product. Davies noted that, when retailers have found out how much more expensive this pork is, retailers have been importing less-expensive pork from other countries.

The country’s Pig Welfare Directive came into play in 1999. Although the EU’s sow stall ban became effective at the first of the year 2013, Davies said that not everyone is “playing the game.” Only about 10 EU states are in compliance, and the EU Commission has started legal proceedings—which she says can be a lengthy and largely ineffective process.

The challenges the UK producers face include all producers doing things properly, risk of rewarding non-compliance, traceability of pigs and product (10 million hogs went from Holland to Germany for finishing last year), managing the market, having the right resources in place, lessons learned from the egg sector (UK had to go to enriched cages which made prices increase), and getting buy-in from the retailers. New slat and slot width requirements as well as minimum pen lengths are being enforced. The term “unobstructed floor area” is also ambiguous and has been a point of discussion. Straw may be difficult to obtain in some areas of the UK, so they may use other “manipulable materials.”

The lobby groups would like to see a ban on farrowing crates and move to free-farrowing. Other practices coming under pressure are needle-teeth clipping, tail docking (UK producers just take the tip off of the tail) and ceasing the use of slatted-floor systems.

Animal rights activities are undertaking video exposes, attacks on “mega” farms and antibiotic use and campaigns focused on eating less meat to save the environment and eating meat causes cancer. Local community opposition to farm construction is another challenge in some areas of the country. In addition, Germany has instituted a ban on castration to be implemented in 2018. The National Pig Association works to ensure that the pig producers’ positions are not compromised and are starting several outcome assessments of these animal welfare regulations. Their focus is on the pig, not the surroundings.

Dr. Patrick Webb, Director of Swine Health Programs, National Pork Board, presented “Animal Welfare During a Disease Outbreak.” Webb explained that, if the United States had an outbreak of FMD, trade would be shut off immediately, stopping about 24% of U.S. pork production that goes offshore. This move would come at a loss of $200 billion to livestock and crop producers over a 10-year period.

Webb said the focus should be on biosecurity and vigilance to keep FMD out of the country. Today’s FMD preparedness/response strategies are detect, control and contain. Control areas

Meghan Grebner, an ag reporter with Brownfield Network, was among the media who captured one-on-one interviews with NIAA Annual Conference speakers.

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 deviations was seen in the enriched and er incidence of keel bone (breast bone) experienced more broken wings. A high-mortality was due to behavioral issues associated with excessive pecking.

1) The mortality was highest in the conventional system (4.7%). The higher mortality was due to behavioral issues associated with excessive pecking.

If mass euthanasia becomes a required part of an FMD response plan, Webb said it should be undertaken in a responsible manner, with animals disposed of properly.

Dr. Janice Swanson, Chair, Department of Animal Sciences, Michigan State University, presented “Coalition for Sustainable Egg Supply Research” that focused on public-private partnership funded systems-based research study of commercial-scale housing alternatives for egg-laying hens in the United States.

In this study, three different housing systems—conventional cage, enriched colony systems and cage-free aviary—are being evaluated for environmental impact, food safety, worker safety, animal health and well-being, and food affordability. Enriched colony cages have areas over several different levels, with manure and egg belts still used in this system.

Swanson shared preliminary findings from three different areas from Flock One:

1) The mortality was highest in the aviary system (11.6%) and lowest in conventional system (4.7%). The higher mortality was due to behavioral issues associated with excessive pecking.

2) The birds in the enriched systems experienced more broken wings. A higher incidence of keel bone (breast bone) deviations was seen in the enriched and avairy systems.

3) Conventional and enriched houses had very good indoor air quality. The aviary system had ammonia levels that tended to be 1.5 to 2 times higher due to the manure litter on the floor. This resulted in 8 to 10 times more dust due to dust bathing and scratching. 4) For overall costs, the aviary had the highest cost of production, followed by the enriched, and then the conventional.

Additional preliminary data is anticipated to be released in early 2015. Researchers are evaluating egg shell strength and quality as well as microbial tests on the eggs themselves. Worker safety and respiratory health will also be evaluated to examine workplace issues associated under the different systems. Food affordability will be the last factor the researchers will evaluate.

The results can be found online at sustainableeggcoalition.org

Bill Zucker, Partner and Director, Ketchum Midwest, presented “USFRA Briefing: Engaging with Consumer Values.” The U.S. Farmers & Ranchers Alliance involves more than 70 affiliated organizations dedicated to building trust with the consumer. Zucker shared the 10 key consumer research findings:

1) 75% of consumers are favorable about farmers but have a significantly lower opinion on the way food is grown or raised.

2) Most consumers think with their heart, rather than their minds in the way they look at their food.

3) Consumers’ three areas of concern regarding food are its impact on their long-term health, anything deemed not “natural” is viewed as a threat—and science and logic does not overcome this perceived threat.

4) During testing, the phrase, “safe, abundant, and affordable food supply” no longer resonates with consumers.

5) The message of “family farm” is not readily believed.

6) Consumer studies show that they believe 70% of the farms are owned or controlled by large corporations.

7) Messages that resonate include the word “improvement” and acknowledging consumers’ concerns.

8) Consumers appreciate that farming is very technical and farmers are using precision tools to ensure they are not over-applying crop protection products or fertilizers.

9) Most people just want to know that farmers are not abusing their animals.

10) Consumers favor quality assurance programs such as BQA and PQA.

Resolutions

One new resolution, Support for Fact-based Animal Welfare Education, was presented and recommended for adoption as amended.

Resolution: Be it resolved, NIAA believes in animal welfare, not animal rights. Animal welfare concerns the prevention of suffering and cruelty to animals; whereas the animal rights philosophy advocates an end to all “human use of animals,” considering such use “exploitation” of animals. Further resolved, NIAA believes human societies require and accept the use of animals as sources of food and fiber, as well as for scientific research, sport, compan-
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Animal Identification & Information Systems Council
Co-Chairs: Victor Velez and Dr. Robert Fourdraine

The Animal Identification & Information Systems Council presentations centered on animal disease traceability framework, and information sharing abounded.

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Council Meetings — Animal ID & Info Systems

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More than 45,000 tags have been provided to more than 9,000 premises. Frazier said Alabama does not require reporting of tagging but asks producers to keep records.

Roehr said Colorado’s initial focus has been on outreach meetings with all 18 livestock markets, providing outreach to producers. The Colorado Cattle Association is also sending information to members. Colorado has implemented location-based identification numbers and submitted to USDA’s premises repository. The state has also developed a brochure on official IDs with a focus on 840 tags. Colorado has also developed an electronic ICVI, is working with Kansas and several states and is communicating with Texas A&M regarding a free app ICVI. Roehr added that a USAHA’s standards subcommittee is working on data exchange standards and defining ICVI’s data elements for paper.

Seven individuals comprised an industry panel that presented information: Karen Jordan, DVM, and Adam Griffin, dairy; Carl Heckendorf, DVM, equine; John Stevenson, beef; Ray Hilburn, poultry; Patrick Webb, DVM, swine; and Kristen Parmen, livestock markets.

Jordan and Griffin pointed out that the dairy industry has been using ID for management and genetics for a long time. ADT questions and concerns within the dairy industry include recording a NUES number that was issued previously and type of tags that can be used as official identification. World Dairy Expo will only accept 840 tags, manufacturer coded RFID tags and Canadian official ID.

Heckendorf stated that the equine industry will take advantage of the Coggins document since it meets requirements. He urged the equine industry to consider using microchips.

Stevenson acknowledged that livestock markets are a major part of the ADT process. Unknowns as implementation of the rule occurs are rodeo cattle and exhibition cattle. Another concern are dairy steers and lost tags due to ear infections or improper tagging.

Hilburn explained that most commercial poultry operations in Alabama where he’s from move birds via all-in and all-out and participate in the National Poultry Improvement Plan. A majority of show birds and “athletes” are identified with wing bands. He said birds going to game preserves, swap-meet and flea markets may be the most complex and encourages a dialog with their owners.

Webb noted that the pork industry is pleased the rule is published as now producers have clarity and more of the unknown is known. Pointing out that the swine industry uses a personal identification number (PIN) for different purposes, Webb said the pork industry is starting to use the PIN for business purposes such as lab submissions, production records, animal health, etc., and he would like all states to allow producers the use of the PIN. The pork industry has been working with packers to require PIN-based tags for pigs going to slaughter and two packers are already on board. More than 2 million PIN-based tags have already purchased.

Parmen stressed the importance of outreach and that the message should be consistent and reach all producers. She voiced several concerns: inconsistent messaging, states misinterpreting the rule, accessibility to tags, cost associated with having a veterinarian be the only person who can apply the tags, only 60% to 70% of livestock markets have software for record keeping and dairy steers. Parmen said the more tags applied before they reach the markets, the least risk for injury, shrinkage, etc.

She pointed out that livestock markets would like consistency in movement documentation such as owner-shipping statement, and simplification regarding what is required. While markets favor backtags on animals going to slaughter and that dairy steers don’t have to be written in the official documents, she said markets are getting questions from producers about who will have access to consignment sheets.

In his “Cattle Imports and Exports: Traceability Issues” presentation, Dr. Paul Kohrs, Washington State Department of Agriculture, said an animal tracking database is being developed that will include official ID, animal movement (brands), livestock inspection, entry permits and tag distribution. Currently, close to 400,000 cattle are linked to 42,000 official forms. Washington has developed a web-based permit system for cattle going to slaughter and will expand to other cattle in the future. Challenges include lack of tangible or perceived value, plus political climate.

David Moss, chief executive officer, Integrated Traceability Solutions Ltd (ITS Global), presented “Animal Disease Management Systems—a Practical Solution.” He revealed that Canada keeps 50% of traceability information.

Addressing “Continuous Animal Health Monitoring,” Dr. Craig Carter, Department of Veterinary Science, University of Kentucky, said his state obtained Homeland Security funds to develop a non-invasive, inexpensive animal monitoring system that can distinguish a sick animal from a healthy one. The system, which is based on the animal’s activities, uses a radio frequency transmitter/receiver that provides real-health data and generates medical intervention. Two trials were completed in 2010 and 2011 and achieved 80% sensitivity. A feedlot trial is planned. A provisional patent was filed this year.

Resolutions

The three resolutions were amended to reflect current status of ADT: Resolution ID1, Resolution ID2 and Resolution ID3.
Antibiotics Council

Co-Chairs: Dr. Jennifer Koeman & Dr. Leah Dorman

The Antibiotics Council kicked off with an overview of the NIAA Antibiotic Symposium 2012 presented by Dr. Leah Dorman who served as co-chair of the event.

Next on the agenda was Dr. Sid Thakur, North Carolina State University, who presented “Antimicrobial Resistance: Do We Know Everything?” Thakur discussed current research on antibiotic use and resistance with particular focus on the importance of environmental transmission/contribution of antimicrobial resistance genes/bugs. He also discussed resistance trends from DANMAP and NARMS.

Dr. Christine Hoang, American Veterinary Medical Association, followed with “Legislative and Regulatory Update.” She discussed the importance of the Veterinary Feed Directive (VFD), veterinary-client-patient-relationship, PAMTA, the DATA Act and ADUFA.

Betsy Flores, National Milk Producers Federation, presented “Milk and Dairy Beef Residues: Incidence & Communication” and discussed milk residue regulatory levels (tolerance vs. safe), the Pasteurized Milk Ordinance, drug residues in milk and dairy, FDA CVM drug residue survey and their consumer communication plan.

During his “Coalition for Sustainable Animal Agriculture” presentation, Jim Fallon, Coalition for Sustainable Animal Agriculture (CSAA), highlighted the task forces’ activities—including but not limited to sustainable use of antibiotics and sustainable sow housing, antibiotics 101—infographic, background and FAQ, interactive website for retailers and Best Food Facts.

New Business

Dr. Eric Moore with Merck Animal Health was introduced as the new co-chair, replacing Dr. Leah Dorman who sits on the NIAA Board of Directors.

The 2013 Antibiotic Symposium was discussed, with information sharing focused on the intended audience, the deliverables and the location. It was suggested that the planning committee and symposium be based on the most current scientific information and publications dealing with AMR, especially those that deal with transmission between animals and humans. Potential partners include Infectious Disease Society of America (IDSA), American Public Health Association (APHA) and an environmental group. Attendees agreed that goals of the symposium should include educating the public health sector, obtaining the public health perspective and what this field believes based on science and the challenge of making decisions given limited data, with these challenges discussed from both sides.

Resolution

Resolution AB1 Development of Antibiotic Symposium was discussed and amended as follows: The NIAA Antibiotic Council shall plan the third annual antibiotic symposium to be held in the fall of 2013 that will cover a variety of perspectives and continue the conversation about antibiotic use and resistance in human and animal health. Special attempts should be made to engage the public health sector in particular. Public health partners should be included in the planning team.

Emerging Diseases Council

Co-Chairs: Dr. Lanny Pace and Dr. Hailu Kinde

The Emerging Diseases Council session focused on biotechnology and its applications in veterinary diagnostics, with five speakers addressing the global application of biotechnology in the detection of animal pathogens and diseases.

Kicking off the session was Dr. Bart Weimer, School of Veterinary Medicine, University of California-Davis, who spoke about “The 100K Genome Project and Food Safety.” Weimer described the BGI 100K collaborative research project that involves industry, Food & Drug Administration, National Institutes for Health, Centers for Disease Control, USDA and academia both nationally and internationally. The goal of the 100K project is to sequence the genome of 100K pathogens that could be used in foodborne illness outbreak investigations which will eventually replace the currently used PulseNet (CDC).

Dr. Alison L. Van Eenennaam, Cooperative Extension Specialist, Animal Genomics and Biotechnology, Department of Animal Science, University of California-Davis, presented “Potential of Biotechnology to Manage Animal Disease,”
Emerging Diseases Council

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Emerging Diseases Council
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and shared several examples of the use of biotechnology on the control of high-impact diseases around the world.

Dr. Carla Huston, Mississippi State University College of Veterinary Medicine, presented “FMD in Vietnam: What Can We Learn?” Dr. Huston described her experience in the FMD outbreak in Vietnam and epidemiological studies in buffalos, dairy cattle and beef cattle. She also highlighted the lessons learned, cultural interactions and the knowledge gap in dealing with the disease.

Dr. Hailu Kinde, California Animal Health and Food Safety Laboratory System, San Bernardino Branch School of Veterinary Medicine, University of California-Davis, talked about “The Role of the Veterinary Diagnostic Laboratory in Supporting Animal Health and the Food Safety System.” In addition to highlighting the role of a diagnostic laboratory in supporting animal health, food safety and public health, he also described the functions of the laboratory as an early warning system for a foreign animal disease, data capturing and dissemination, the quality program and laboratory networking.

New Business

Dr. Carla Huston was nominated as a co-chair for the Emerging Diseases Council, replacing Dr. Lanny Pace.

Resolutions

Two resolutions were amended: ED 4 (Veterinary Education and Accreditation) and ED 11 (Training Veterinarians for Public Practice).

Global Animal Health, Food Security and Trade Council

Co-Chairs: Dr. James McKean and Laurie Hueneke

The Global Animal Health, Food Security and Trade Council session focused food safety initiatives utilizing science-based platforms related genetic disease control, government regulations and international trade.

Dr. Michael Heaton, USDA/ARS, Meat Animal Research Center, presented “Reducing Ovine Progressive Pneumonia by Selecting for TMEM154 Haplotypes in Sheep,” noted that lentiviruses are world-wide in status and cause wasting disease and pneumonic lesions primarily after second year of age. Heaton said pneumonic lesions are lympho-proliferative in nature, with the viruses spread via aerosol infection from carriers and in lambs from infected animals. Approximately 25% of U.S. flocks are infected. The good news is that genetic testing and selection can be used to increase disease resistance for these lentiviruses.

In his presentation “What the Pack-er Considers in Food Safety and Quality Issues,” Dr. John Ruby, Technical Services, JBS USA, said product recalls are major issues and are typically a result of foreign objects, shelf-life contamination, adulterant microbes and food allergens. Process control— multiple-hurdle strategies— in place at packing plants to reduce adulterants include good-dressing practices, monitoring programs, HACCP programs, cold chain management steps and organic acid washes where applicable. Technology helping to eliminate challenges include video monitoring for proper procedures, using organic rinses on the hot carcass side and microbial monitoring.

Dr. Bernadette Dunham, Director, Center for Veterinary Medicine, FDA, presented “The Food Safety Modernization Act – Highlights Related to Animal Production.” Dunham delved into the Food Safety Modernization Act (FSMA), underscoring that it emphasizes partnerships and farm-to-table responsibility. She said the law was needed as 15% of the U.S. food supply is imported, with today’s food supply being more high tech and complex. FSMA directs the Food and Drug Administration “to build a new, modern food safety system that includes standards all must follow for preventing food safety problems and provides FDA with tools for gaining high rates of compliance with those standards.”

The cornerstone of FSMA is prevention—lessening the frequency of contamination events. The most groundbreaking shift, Dunham reported, is import safety. Importers are now responsible for ensuring their foreign suppliers have adequate preventive controls in place, and the FDA can rely on third parties to certify that foreign food facilities meet U.S. requirements. The general principles of FSMA are science based, flexible, risk based and small businesses sensitive and cover facilities that manufacture, process, pack or hold human food.

Bill Westman, vice president of International Trade, American Meat Institute, presented “Impact of SPS Controls on Exports,” calling sanitary phyto-sanitary (SPS) “the trade tactic of choice.” While Westman pointed out that new

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technologies and international trade offer the opportunity to meet the increased demand for emerging markets, he added that use of new technologies in food production “may also translate into SPS trade barriers.” The World Trade Organization SPS chapter says regulations enacted to protect human or plant life or health must be based on science and on international standards, guidelines and recommendations and not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail. To show that their measures are based on science, members can either base their measures on international standards or on scientific risk assessment.

That said, Westman noted that production technologies are sometimes banned by governments as “an excuse to protect domestic industries from foreign competition.” And, due to the technical complexities associated with establishing risk assessments for these technologies, “it is difficult to challenge unjustified trade restrictions.” Challenging technology-related barriers to trade, he said, can “take years to resolve.”

Westman underpinned the importance of the industry educating stakeholders—domestic and foreign—about the role of Codex, advocating for strong and binding SPS measures in free trade agreements and engaging emerging markets regarding the importance of new production technologies.

Dr. Barbara Masters, Senior Policy Advisor, OFW Law, spoke about “Residue Control in a HACCP Environment.” Referring to a 2010 Office of Inspector General Report, Masters cited three key findings of the report: 1) The need for FSIS to ensure establishments slaughtering animals at higher risk for residues—dairy and veal—are following HACCP guidelines; 2) The need for FSIS to ensure product that has been tested for an adulterant does not receive the mark of inspection until negative test results are received; and 3) The regulatory agencies—FSIS, FDA and EPA—need to work more in harmony to better implement the National Residue program.

After zeroing in on “same source suppliers,” Masters said the actions FSIS is looking for is “best available preventive practices” such as identification of all animals received at slaughter, traceback information to FSIS at the time testing is conducted and calling and educating producers when a violation occurs. FSIS encourages suppliers to engage in medication recordkeeping and wants producers to participate in residue avoidance programs. To improve residue control, Master said FSIS is using the KIS™ test as the in-plant screen at livestock establishments and has restructured the overall National Residue Program.

To combat the primary causes of residue violations—treatment records not maintained, withdrawal time not followed, approved dosage exceeded, drugs given or fed by mistake and extra label usage by laymen, Masters urged producers to maintain a strong veterinary-patient relationship, maintain records on all treated animals and follow withdrawal times.

Resolutions

Resolution GAHFST6 (Animal Welfare Research) was amended.
FMD Symposium Fosters a New Preparedness Paradigm

At this point in time, the U.S. food animal industry is FMD-free and has FMD-free status that is extremely vital to maintaining international trading partners. With the FMD virus in foreign countries, FMD is considered a significant threat as the United States has immunologically naïve populations of animals.

To manage the risk and have an effective emergency management plan in place ready to activate requires a partnership between all levels of government, the private sector and the community. Other response agencies include health and conservation departments, local government, police, emergency services and volunteer organizations.

Government and industry’s state of preparedness ensures that, should an incursion occur, FMD can be contained and controlled as quickly as possible. The highest priority is to safeguard a secure food supply for the nation and the world by ensuring business continuity for food animal producers and all associated industries.

The U.S. food animal industry has changed significantly in size, structure, efficiency and extensive movement since the last U.S. outbreak in 1929. To that end, NIAA sponsored an FMD symposium immediately following the conclusion of its Annual Conference in Louisville, Ky.

Titled “Fostering a New Preparedness Paradigm: Facilitating a Conversation Among Public and Private Sector Stakeholders,” the FMD Symposium was developed to enhance preparedness for FMD across food animal production sectors by bringing together industry stakeholders representing the entire supply chain as well as regulatory agency stakeholders, academicians and policymakers.

“By engaging this broad range of stakeholders, the symposium facilitated the exchange of information and identification of next steps that can help foster scientific

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FMD Symposium Presentations
(in alphabetical order by title of presentation)

“Crisis Communications Update: Messages and Channels” – Ms. Stacey Stevens, Vice President of Media & Industry Affairs, Dairy Management Inc./National Dairy Council

“Diagnostic Technology Update: Strategic Development and Deployment” – Dr. Sarah Tomlinson, Associate National Animal Health Laboratory Network Coordinator, USDA-APHIS-VS


“Government Preparedness Role and Response Framework: Where Animal Health Authority Leaves Off and Private Sector Agency Begins” – Dr. Jon Zack, Director, Preparedness and Incident Coordination Staff, USDA APHIS VS

“Industry Perspectives on FMD Preparedness: Why Invest Now?” – Charles Ahlem, Co-founding Owner, Hilmar Cheese

“Outbreak Terminology: Definitions of Phases, Zones and Premises” – Dr. Patrick Webb, Director of Swine Programs, National Pork Board

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innovation, industry engagement and consumer confidence,” stated Dr. Julie Smith, extension dairy specialist, University of Vermont, who co-chaired the symposium with Dr. Annette Jones, California State Veterinarian, Director of Animal Health and Food Safety Services, California Department of Food and Agriculture.

The FMD Symposium featured nine presentations by FMD experts plus four participant discussion periods and a wrap-up session. Additional information was provided by several speakers during NIAA Committee and Council meetings.

The discussion portion of the symposium led off with a realistic description of the situation regarding livestock production practices and livestock movements through the area around Louisville, Ky., the site of the symposium. It would be business as usual for the vast majority of livestock businesses until the moment an FMD outbreak occurred and became public knowledge. The object of the discussion was not to outline operational logistics but to address key challenges of stakeholders—specifically animal health authorities and livestock producers—that preparedness activities should address or continue to address.

During the discussion session, diverse stakeholders shared their perspectives on the challenges posed by an outbreak of FMD. The goal of the discussions was not to reach consensus but to learn from each other via the exchange of stakeholder perspectives.

Participants at each table included a diverse representation of producers or producer organization representatives, regulatory or diagnostic laboratory veterinarians and other agricultural business representatives from multiple states. All participants and facilitators were given the hypothetical scenario, associated maps and information plus a primer on risk communication. A discussion leader at each table helped keep participants on task.

Participants considered the impacts of an announcement of FMD in the United States from a farm-level perspective. The discussion provided an opportunity for all to reflect on whether current efforts are in alignment with industry priorities and how regulatory authorities, livestock producers and the organizations which represent them can work cooperatively to advance preparedness to the next level. Participants returning to their home states were asked to have similar conversations locally.

FMD Symposium
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Stakeholders representing various groups involved should an FMD outbreak occur shared information during the FMD Symposium four Discussion Periods and obtained a 360-degree view while listening to others in their group.

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FMD Symposium Summary Thoughts

1) Significant progress toward the United States having a well-thought-out, scientific response plan to an FMD outbreak has been achieved since 2001 when an outbreak of FMD occurred in the United Kingdom. Increased awareness of the threat of intentional acts of bioterrorism also stimulated animal agriculture and animal health officials to re-evaluate the U.S. state of preparedness.

2) Some agricultural industries are investing now in response preparedness with the understanding that doing so will help support their continuity of business even in the face of an outbreak.

3) New technologies that support rapid, large-scale diagnostics, mass vaccination and controlled movement offer hope for businesses to survive an outbreak of FMD in the United States.

4) Looking at historical outbreaks, when the first case of FMD is diagnosed, it’s not usually the first case. Normally, when the first case is announced, infected animals have already moved, and FMD has already spread. The “first case” diagnosed is a time and place within the epidemic.

5) The first diagnosis of FMD puts a State and all of animal agriculture in the middle of an outbreak. Involved entities should start with this understanding—not think “small outbreak” but think “larger outbreak”—and plan accordingly.

6) Involved entities should be prepared to use vaccines. Entities cannot wait three to seven days and see if vaccination is needed. Rather, they should plan to use vaccine and abort such plans should certain outbreak criteria be met that indicate the outbreak can be controlled by other means.

7) Opportunity costs get larger the longer it takes to make a decision.

8) All parties involved with an FMD outbreak should continue to think realistically regarding what needs to get done, what resources will be needed, who has authority to do what, who has the money to do what, etc. When these items are known, fewer surprises will arise when an actual outbreak of FMD occurs.

9) One important way agricultural entities and government officials can work together right from the initial diagnosis of FMD is to frame the size and scope of the outbreak so that response resources can be used most effectively and negative impacts to non-affected businesses can be minimized.

10) Systems mapping—a strategic tool that identifies who proposed ideas, who listens to the options, etc.—is invaluable at the very beginning of an outbreak as it helps those involved in response plans to implement strategies and not allow various groups to take the plan off-track.

11) Response plans must include an animal welfare and environmental impact component.

12) Operations and communications need to work together to ensure accurate information is being distributed to all audiences while the outbreak is being managed.

13) Research and past experience show that the government is viewed by consumers as credible in the context of an animal

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Left to right: Dr. Jon Zack, USDA APHIS VS; Dr. Pam Hullinger, University of California-Davis; and Charles Ahlem, Hilmar Cheese, take questions from the audience.

In addition to delivering presentations at the FMD Symposium, left to right, Dr. Jon Zack, USDA APHIS VS; Stacey Stevens, Dairy Management Inc./National Dairy Council; Dr. Sarah Tomlinson, USDA-APHIS-VS; and Dr. Gay Miller, University of Illinois, add more insight as they respond to questions posed by symposium participants.
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health emergency. USDA will serve as the communications and operations lead for the U.S. government, and it would be beneficial for the Centers for Disease Control to deliver a strong, complementary message to the public about the implications of the outbreak and the safety of the food supply. The livestock community will then amplify the message via its spokespeople and well-established consumer communications channels.

14) All individuals involved in a response need to be on the same page. Common operating objectives and consistent messaging are a critical component of any well-coordinated response.

15) Because government first responders to an animal health emergency can have enormous impacts on farmers, ranchers, processors and other allied industries, animal agriculture should be aware of and influence State and Federal FMD preparedness efforts.

16) Preparedness is a process. Continual improvement is part of the process.

17) FMD will be eradicated should the United States get an outbreak.

Discussions among symposium participants were captured by a scribe at each table. The results of the Discussion Periods can be found in the recently released FMD Symposium White Paper.

Dr. Annette Jones served as co-chair of the FMD Symposium as well as talked about “Permitting and Movement Control: Progress and Challenges.”

Dr. Patrick Webb joined Dr. Sebastian Heath, FEMA, and Charles Ahlem, Hilmar Cheese, to deliver the FMD Symposium wrap-up. The three agreed that all segments of animal agriculture will play an important role should an FMD outbreak occur in the United States.

Dr. Sebastian Heath, FEMA, kicked off the Symposium.
NIAA Thanks the Chairs and Planning/Steering Committee Members for Their Work on the Annual Conference and FMD Symposium

Annual Conference Planning Committee Chair:
Robert H. Fourdraine, PhD, AgSource Cooperative Services

Planning Committee Members:
Michael Coe, DVM, Merck Animal Health
Glenn Fischer, Allflex USA
Tony Frazier, DVM, Alabama Department of Agriculture & Industries

Symposium Steering Committee Co-Chairs:
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Dr. Annette Jones, California State Veterinarian, Director of Animal Health and Food Safety Services, California Department of Food and Agriculture

Steering Committee Members:
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Dr. Matt Cochran, Assistant Executive Director of Administration, Texas Animal Health Commission
Dr. Mike Sanderson, Professor, Production Medicine, School of Veterinary Medicine, Kansas State University
FMD Cross-Species Crisis Communication Team

NIAA member Richard Ellinghuysen was one of numerous NIAA members who stepped up to the microphone to ask a question of a speaker during NIAA’s Annual Conference and FMD Symposium.