

White Paper

"From Farm to Table – Food System Biosecurity for Animal Agriculture" Identifying Risks, Challenges and Solutions

Information synthesized from the National Institute for Animal Agriculture's Annual Conference, "From Farm to Table – Food System Biosecurity for Animal Agriculture" conducted April 4-7, 2016, in Kansas City, Missouri. Full presentations are available online at www.animalagriculture.org

DISCLAIMER: The information provided in this White Paper is strictly the perspectives and opinions of individual speakers and discussions at the 2016 Annual Conference of the National Institute for Animal Agriculture.

Table of Contents

BACKGROUND	2
PRESENTATION HIGHLIGHTS.....	4
BIOSECURITY AND BVD.....	11
FOOTNOTES.....	15
OTHER SPEAKERS AND TOPICS (listed by committee/council).....	17
2016 ANNUAL CONFERENCE PLANNING COMMITTEE	22
2016 BVD FORUM PLANNING COMMITTEE	22
NIAA'S 2016 ANNUAL CONFERENCE WAS FUNDED IN PART BY	23
CONTACT INFORMATION.....	24

BACKGROUND

From Farm to Table – Food System Biosecurity for Animal Agriculture was the theme of the 2016 National Institute for Animal Agriculture’s Annual Conference hosted April 4-7 in Kansas City, Missouri. Animal disease epidemics are a significant concern to the animal agriculture industry. The conference focused on identifying risks, challenges and solutions and ways producers can be proactive in protecting their animals from illness.

Presenters in the Opening General Session and Closing General Session addressed this topic, providing an in-depth look at the biosecurity and how it affects the animal agriculture industry.

“Protecting U.S. Agriculture – Biosecurity Past, Present & Future,”

Dr. John Clifford – Chief Trade Advisor, USDA APHIS VS

“Biosecurity & Indemnity – The Path Forward,”

Dr. Jack Shere – Associate Deputy Administrator, USDA APHIS VS

“Evolution of Biosecurity – Recommendations for the Secure Food Supply Plans,” *Dr. James A. Roth – Director of the Center for Food Security and Public Health*

“Understanding Incentives for Livestock Biosecurity Investments & Efforts,”

Dr. Glynn Tonsor – Associate Professor, Kansas State University

“Biosecurity in Feed Manufacturing,” *Mr. Gary Huddleston – Manager, Feed Manufacturing Safety & Environmental Affairs, American Feed Industry Association*

“HPAI: Lessons Learned from a Producer Perspective,” *Dr. Michelle Kromm – Chief Veterinarian and Director of Technical Services, Jennie-O Turkey Store*

“Egg Layer Biosecurity: A Change in Culture,” *Dr. Travis Schaal – Internal Technical Services Manager, Hy-Line International*

The 40-plus experts speaking during Committee and Council Meetings provided further insight into Biosecurity from a species--specific or highly targeted topic angle:

- Aquatic Livestock Committee
- Bovine Committee
- Equine Committee
- Poultry Committee
- Small Ruminant Committee
- Swine Committee
- Animal Care Council

Animal Health, Emergency Management Council
Animal Identification and Information Systems Council
Antibiotics Council
Emerging Diseases Council
Global Animal Health, Food Security and Trade Council

The National Institute for Animal Agriculture (NIAA) is a non-profit, membership-driven organization that unites and advances animal agriculture: the aquaculture, beef, dairy, equine, goat, poultry, sheep, and swine industries. NIAA is dedicated to furthering programs working toward the eradication of diseases that pose risk to the health of animals, aquaculture, wildlife and humans; promote the efficient production of a safe and wholesome food supply for our nation and abroad; and promote best practices in environmental stewardship, animal health and well-being.

NIAA membership encompasses producers, producer organization leaders, veterinarians, scientists, academicians, livestock and poultry extension personnel, Federal and State government representatives and allied industry professionals.

PRESENTATION HIGHLIGHTS

Animal disease epidemics are a significant concern to animal agriculture. With the goal of producing a safe and affordable food supply, it is important to identify risks, challenges and solutions that 50 producers can be proactive in protecting animals from illness.

A key to Food Animal Disease (FAD) protection is biosecurity. A majority of producers want to do things right, they want to be profitable and they understand the need for biosecurity.

The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Veterinary Services (VS) is working to build partnerships and help guide biosecurity planning.

We (USDA APHIS) are not just about disease eradication; we are about disease education and control.¹

Dealing with biosecurity issues related to animal disease outbreaks has been an evolution in response and planning. Government can't resolve animal disease epidemics alone. It takes a partnership with the State Departments of Agriculture and industry to develop and execute plans.²

It is going to take tremendous education and work by all industry partners to increase biosecurity in U.S. ³

Learning from outbreaks

Producers as well as government officials learned a lot during the recent disease outbreaks. Industry partners are taking steps to make sure the outbreaks are better managed and industry is better prepared.

The 2014-15 HPAI (Highly Pathogenic Avian Influenza) outbreak started on the West coast in fall 2014 with amplification in the spring 2015 in Iowa and Minnesota. The disease spread to a total of 232 premises —affecting approximately 50 million birds.

The need for a more “effective disposal plan” was a major lesson learned from the Minnesota/Iowa HPAI outbreak — how to deal with millions of dead birds.

The need for communication with your community was another lesson learned. One large producer stressed the need for community awareness because outbreaks like HPAI affect not only the business but the community as well. The community stepped up to help.

Since the 2015 outbreak, Minnesota agencies have been working to prepare for future outbreaks. “We’ve been looking at what worked and what didn’t, and how we can be better prepared for another incident.”

APHIS confirmed H7N8 HPAI in a turkey flock in Indiana on January 15, 2016. It was the first commercial detection since June 2015.

The stated goal was 24-hour depopulation, however weather did not cooperate with below-zero temperatures, which lead to foaming units freezing. Altogether in the Indiana outbreak, eight premises were depopulated utilizing a variety of methods over a number of days and resources expended.

Government officials and producers agree biosecurity is key and critical to prevent future outbreaks. But it is important to remember just because a biosecurity measure works doesn’t mean it will be 100% effectively implemented. Factors that affect implementation are feasibility, awareness and net economic value.

Principles of biosecurity

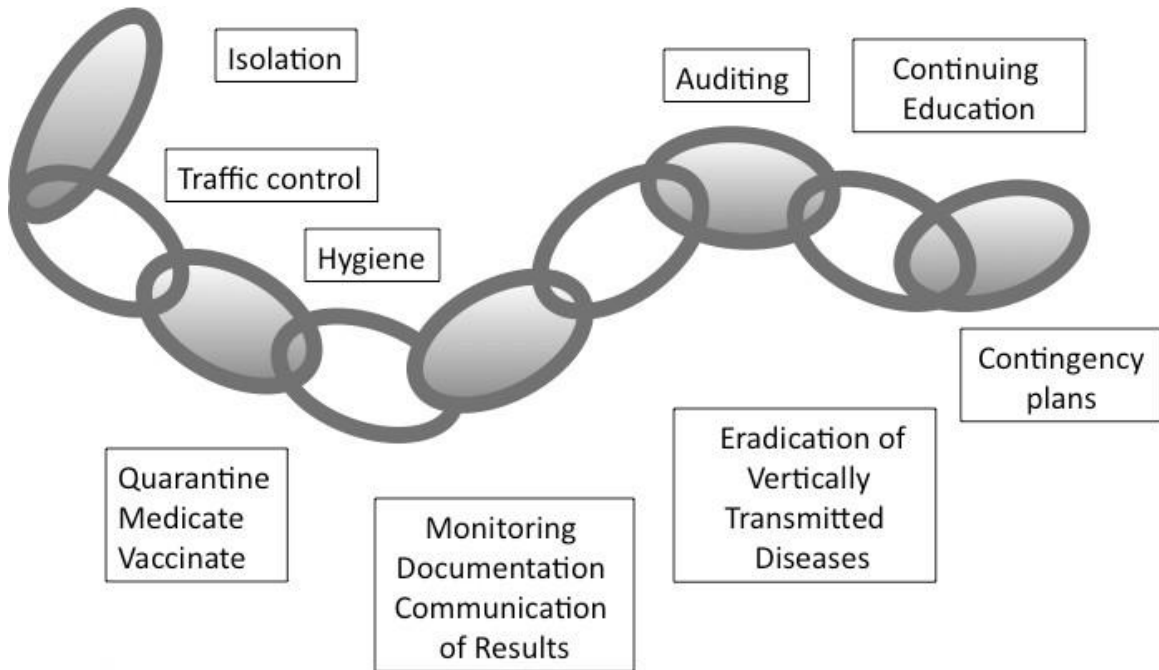
In an outbreak, it is the producer’s responsibility to protect his or her herd from exposure. The first step in this protection is the implementation of a biosecurity plan. Veterinarians are key to helping producers design biosecurity plans that are feasible and implementable. ⁴

It is important to note that biosecurity is an ever evolving issue that is barn/farm/operation specific.⁵

Preventing disease introduction and spread depends on awareness and following protocols daily. Beef and dairy biosecurity posters have been developed by Iowa State to help producers understand and implement biosecurity measures to protect their herds. The posters are available online at: *cfsph.iastate.edu*.

Effective biosecurity is like a long chain (see Graphic A). A biosecurity program is only as strong as each link.⁶

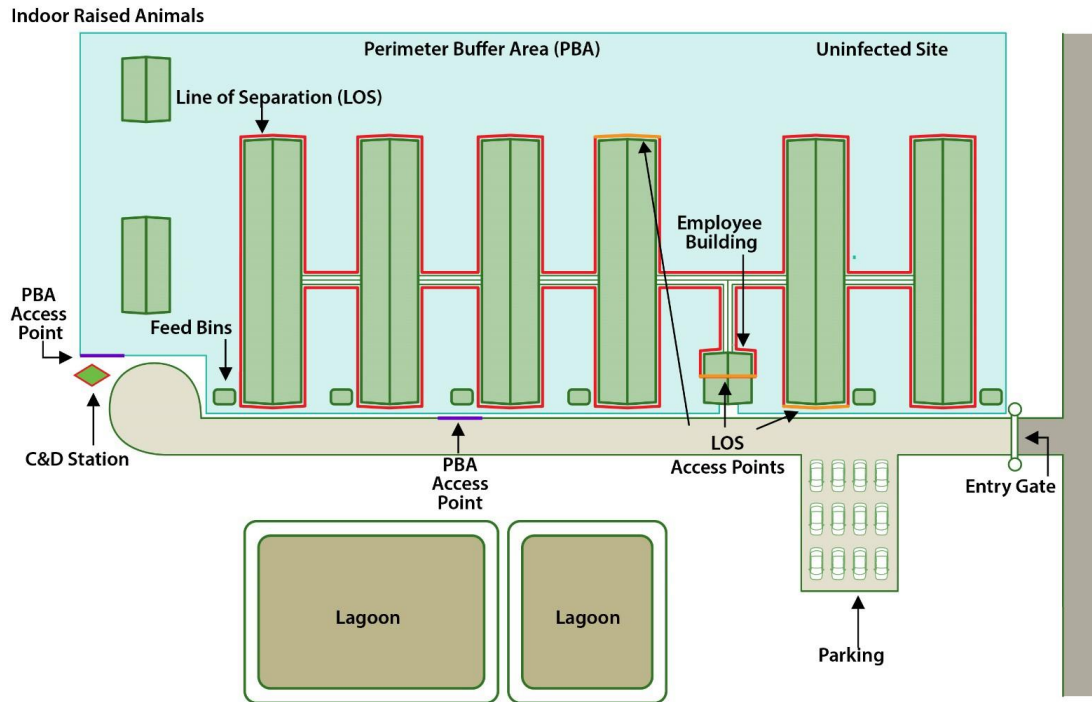
Graphic A:



Sesti, 2001

Producers are encouraged to develop site-specific biosecurity plans. A biosecurity officer, who has expertise in infectious diseases and production animal agriculture and is also familiar with the facility, should develop the plan and monitor to ensure that it is continuously followed. In many cases this may be a veterinarian or university extension – a team approach is recommended. See Graphic B for an example plan.

Graphic B:



Biosecurity lines on poultry sites act as a barrier to reduce spread of avian influenza to the birds onsite. These lines consist of the Perimeter Buffer Area or PBA and the Line of Separation or LOS. The Graphic B shows a PBA designated by a light blue color. The LOS is indicated by the red line.

For animals housed indoors, walls of the building should be the LOS, separating animals from all possible sources of infection. Animals housed indoors, area around the building(s) is the PBA where human and vehicle traffic have taken steps to mitigate the potential for contamination.⁷

You can think of a farm as a castle. The LOS is like a moat around your property and the LOS access point is like the drawbridge.⁸

Implementation challenges

In order for a biosecurity plan to be effectively implemented, the plan must be communicated to everyone involved in the operation. A biosecurity plan's effectiveness at preventing disease is only as good as the efforts of the people using it.⁹

There are many challenges to biosecurity, including:

- 1) Biosecurity is expensive and inconvenient.¹⁰
- 2) Increasing average farm size and intensive farming (close concentration of animals) makes the U.S. more susceptible to disease.¹¹
- 3) Biosecurity takes more than a sign. Physical barriers such as gates and fences are needed.¹²
- 4) Biosecurity only works if everyone on the production site understands the importance of biosecurity and follows the biosecurity protocols all of the time.¹³
- 5) Lack of confinement. It is very difficult to have effective biosecurity to prevent infection in animals not totally confined indoors. Animals with access to outdoors are more difficult to protect from infection, but the line of separation concept can help.¹⁴
- 6) Weather can play havoc on a biosecurity plan. In the Indiana January 2016 HPAI outbreak, because of freezing temperatures, foaming units would not work so other methods were used to depopulate and stop the spread of the virus.¹⁵
- 7) Herd and flock size can affect success. During the recent HPAI outbreak a crew of 40 could depopulate about 140,000 birds per day. With facilities having 7 million or more birds, that process does not meet the goal of depopulation in 24 hours. USDA agencies are working with industry, academia, the Department of Homeland Security, and state and local municipalities to develop better methods and combination techniques.¹⁶

Secure Food Supply Plans

When there is a disease outbreak it is critical for the industry to have plans that can be implemented to make sure producers can continue to move product. The Secure Food Supply (SFS) Plans focus on those operations that are affected by movement controls, but not infected by the disease itself.¹⁷

SFS Plans are for monitored premises to help those farms/operations fulfill permit requirements. These plans are aimed to help maintain business continuity.¹⁸

Since 2007, USDA, states and industry have worked together to develop FAD preparedness plans. These efforts have resulted in the SFS Plans and have similar overall goals:

- Detect, control, and contain food animal disease as quickly as possible;
- Avoid interruptions in animal/animal product movement to commercial processing from farms with no evidence of infection during a foreign animal disease outbreak;
- Provide a continuous supply of safe and wholesome food to consumers; and
- Maintain business continuity for producers, transporters, and food processors through response planning.¹⁹

To date six different SFS Plans have been developed. The SFS Plans strive to ensure movement of animals and/or animal products from premises with no evidence of infection for specific foreign animal diseases.

In the SFS plans, new biosecurity recommendations emphasize three concepts: 1) biosecurity officer; 2) line of separation for each building; and 3) perimeter buffer area.²⁰

The Milk and Pork Supply Plans are both focused on Foot and Mouth Disease (FMD). Pork also includes planning for classical swine fever, African swine fever and swine vesicular disease. The Poultry plans are focused on Highly Pathogenic Avian Influenza.

The goal of the Secure Pork Supply Plan is to develop procedures to allow the safe movement of animals with no evidence of infection in a control zone to a pork processing plant or to other sites to accommodate different stages of production.²¹

The overall goal of the Secure Milk Supply (SMS) Plan is “to maintain milk movement from dairy farms with no evidence of infection in a FMD outbreak and to provide a continuous supply of wholesome milk and milk products for consumers.”²²

Accomplishing this goal requires a partnership between industry (producers, haulers and processors), states (animal health officials, regulatory officials), the federal government (animal health officials, planners, policy makers), and academia (subject matter experts, communication facilitators). Participation in the SMS Plan is strictly voluntary. For those who choose to participate in pre-event planning, the goal is less disruption for their milk to reach processing plants.²³

A secure beef plan is currently in development. The first focus is on getting finished cattle to processing, so developing biosecurity performance standards and surveillance plans for feedlots, transporters and packer/processors is the primary objective.

Six working groups are tackling the plan — biosecurity, surveillance, communications, data management, managed movement, and management of infected feedlots.

The six plans can be accessed online at: <http://www.cfsph.iastate.edu/Secure--Food--Supply/index.php>.

Biosecurity and the Feed Industry

It is important for producers to know their suppliers. Outbreak events like Porcine Epidemic Diarrhea Virus (PEDv) in swine and HPAI in poultry led to the realization of how biosecurity is important in the feed industry.²⁴

The American Feed Industry Association (AFIA) completed a survey requesting input from its members on actions that AFIA should take in regards to the impact of *PEDv*. Ninety-eight percent of responding members were impacted by *PEDv*.

Based on survey results, AFIA staff set out to update its biosecurity guidance to address specific needs for the feed industry to control the spread of viruses or pathogens, such as *PEDv*, that may be detrimental to animal health.

This led to the creation of AFIA's "Developing Biosecurity Practices for Feed & Ingredient Manufacturing" plan in April 2015. You can find a copy of the document on AFIA's website: www.afia.org.

The document is based on the fact that the feed manufacturer is responsible for biosecurity of the feed chain, which includes selecting, receiving and processing of ingredients into the complete feed through to final feed delivery or until the livestock producer takes possession of the feed.²⁵

Traceability

Since the rule went into effect in March 2013, the focus of the animal disease traceability (ADT) program has been:

- Educating stakeholders about the rule's requirements;
- Identifying animals — particularly cattle — using official ID;
 - Proper administration of tag distribution/tag applied records
- Collecting animal movement information;
 - Proper administration of ICVIs (interstate certificate of veterinary inspection)
- Increase volume of records in searchable data systems; and
- Continue to improve rule compliance.²⁶

Industry has tried to push the implementation of traceability systems because of animal disease but economics of trade is going to be the factor that moves implementation forward.²⁷

For example, as the U.S. negotiates beef trade with China, producers must be able to trace from slaughter back to birth farm. If trade opens with China, producers will experience a financial reward for implementing a traceability system because of increased beef demand.

To assist with the implementation of traceability, a publicly accessible resource that compiles identification, documentation, disease-specific, and other requirements for moving livestock interstate was developed. In October 2015, *InterstateLivestock.com* was launched.

The site was created with the user in mind. Visitors are asked a series of questions that determines which regulations affect the potential movement. The user is not just given a pdf and told good luck; the site provides step-by-step, in-depth instructions.²⁸

BIOSECURITY AND BVD

BVD or Bovine Viral Diarrhea affects all segments of the beef and dairy industries. While there is a great deal of knowledge on the disease, the virus still presents various challenges to cattle producers. To control BVD there needs to be a program approach — not just testing and not just vaccination.²⁹

An industry prevention strategies and solutions forum was hosted following the 2016 NIAA Annual Meeting on April 7.

Topics and speakers included:

“BVD Overview – The Disease, History, Management & Control”,
Dr. Dan Grooms, Michigan State, College of Veterinary Medicine,
Large Animal Clinical Sciences

“Economic Aspects of BVD; Effects on US Cattle Herd”, Dr. Derrell Peel,
Professor, OSU, Department of Agricultural Economics

“BVD Diagnostics — Goals, Strategies and Best Tests Lab Perspectives”,
Dr. Dan Givens, Auburn College of Veterinary Medicine & Associate Dean of
Academic Affairs

“Control Management Strategies for Producers”, Dr. Bob Larson, Kansas State
University, College of Veterinary Medicine; Chair Food Animal Production
Medicine

“Development of an Effective Pathogen Screening Program using Rapid, High-Throughput Molecular Detection Assays”, Dr. Richard Kerr, Daisy Farms, Diagnostic, R & D Lab Director

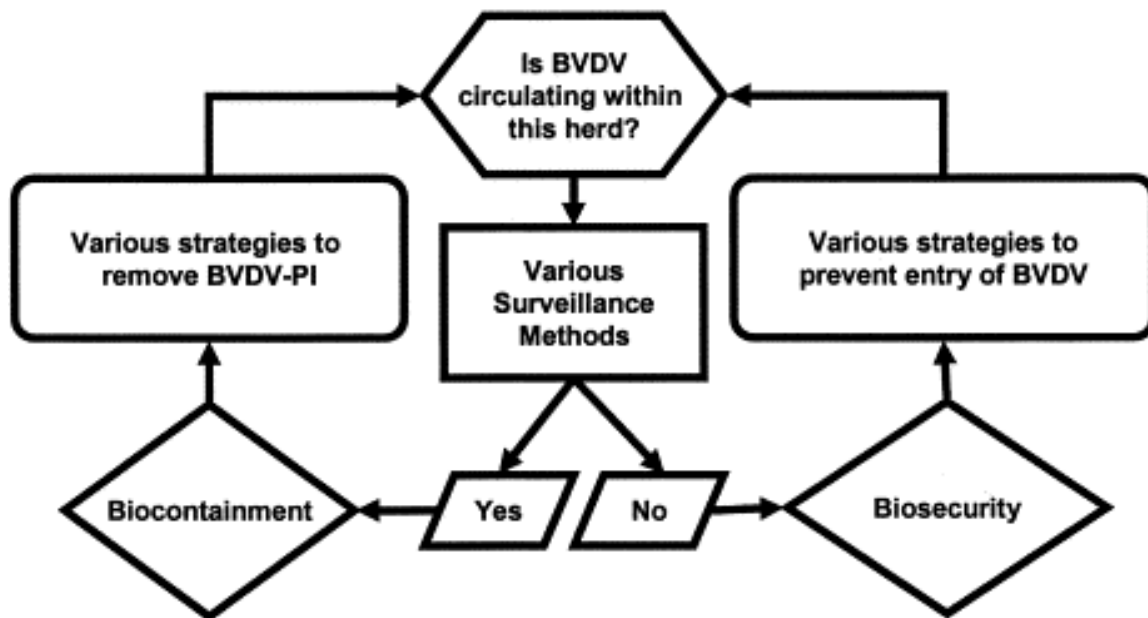
“BVD Regulatory Perspective”, Dr. Robert Stout, Kentucky State Veterinarian

“What’s new in BVD Research”, Dr. Julia Ridpath, National Animal Disease Center, Research Microbiologist

BVD affects a cow’s production ability and can cause the loss of calves. Transient infection symptoms include diarrhea, decreased milk production, reproductive disorders, increased occurrence of other diseases and death. Fetal infection can cause abortions, congenital birth defects, abnormally weak and small calves, and persistently infected (PI) animals. PI animals represent an important source of disease risk both within the herd and across the industry.

According to USDA, acute BVD outbreaks can cost producers between \$50 and \$100 per cow. Biosecurity is front and foremost when preventing BVD.

Smith and Grotelueschen released a flow chart (Graphic C) in 2004 for BVD surveillance, biocontainment and biosecurity.³⁰



When evaluating a biosecurity program related to BVD, it is important to determine if a producer:

Tests incoming cattle.

Utilizes surveillance and watches for incidence of BVD.
Previous BVD diagnosis.

What is their veterinarian client relationship and is he or she BVD knowledgeable.

To manage and eliminate BVD there are multiple control points to consider:

1) Work with your veterinarian on herd management program. 2) Test all herd additions. 3) Isolate acquired additions minimum of two weeks. 3) Test herd for current status. Producers are encouraged to detect and remove PIs (persistently infected); implement biosecurity measures to prevent BVD introduction and to develop a herd management plan including vaccination for BVD.³¹

There are 150 vaccine combinations available to address different needs. Vaccination is an effective tool but it is not a silver bullet.³²

There are multiple challenges to BVD control, including: 1) failure to recognize disease; 2) failure to recognize costs (lost reproduction or production); 3) little incentive to identify and remove PI animals; 4) source versus incidence of impact; 5) testing cost and specificity; 6) nature of the disease — many types and mutations; and 6) impact on other diseases — BVD role in BRD.³³

Cow-calf producers do not have a good way to test a calf until it is born. At that point the producer has nine months in the calf and is six months from payday. So most producers are not excited about the options of dealing with PI calves. Ultimately the key to BVD control is preventing the creation of PI calves.³⁴

Industry leaders agree the current roadblock to BVD control is the lack of market-based incentives. To control BVD the industry needs to find a way to offer PI-free premiums.³⁵

To help with BVD control, industry leaders developed BVD CONSULT (Collaborative, Online, Novel, Science-based, User-friendly, Learning, Tool) — an interactive, web-based BVD risk assessment tool for producers and veterinarians.

BVD CONSULT was designed to aid cattle producers and veterinarians in creating BVD control, prevention and eradication strategies that are specific to individual herds. The site incorporates recommendations into an interactive format — mimics a phone conversation with an expert.

CONSULT helps veterinarians and producers make wise, evidence-based decisions regarding BVD. To learn more about CONSULT visit *BVDConsult.com*.

Summary

There are a variety of tools for managing a disease outbreak. One thing livestock producers can do is biosecurity. Producers have control over his or her herd/flock on a daily basis regarding animal movements, people, supplies, etc. Producers get to decide how much risk they are willing to take when it comes to disease spread.³⁶

Six Secure Food Supply Plans have been developed to assist producers in preparing for disease outbreaks. Participating in the plans is voluntary and producers can decide how much they prepare ahead of time for an outbreak. A big part of this preparedness is biosecurity.

Research proves that producers who implement and follow biosecurity protocols every single day have healthier animals and healthier animals perform better.³⁷

FOOTNOTES

¹ Clifford, John. "Protecting US Agriculture – Biosecurity Past, Present & Future," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

² Shere, Jack. "Biosecurity & Indemnity — The Path Forward," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

³ Clifford, John.

⁴ Lee, Molly. "Secure Milk Supply: Training and Implementation of Biosecurity and the Line of Separation Concept."

⁵ Kromm, Michele. "HPAI: Lessons Learned from a Producer Prospective," 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.

⁶ Schaal, Travis. "Egg Layer Biosecurity: A Change in Culture," 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.

⁷ Roth, John. "Evolution of Biosecurity – Recommendations for the Secure Food Supply Plans," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

⁸ Lee, Molly.

⁹ Huddleston, Gary. "Biosecurity for Feed: Guidance for Developing Biosecurity Practices for Feed and Ingredient Manufacturing," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

¹⁰ Roth, John.

¹¹ Clifford, John.

¹² Clifford, John.

¹³ Roth, John.

¹⁴ Roth, John.

¹⁵ Shere, Jack.

¹⁶ Shere, Jack.

¹⁷ Roth, John.

¹⁸ Bickett--Weddle, Danelle. "Overview of Secure Food Supply Projects," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

¹⁹ Roth, John.

²⁰ Roth, John.

²¹ Zaabel, Pam. "Secure Pork Supply Plan: A Work in Progress," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.

²² Lee, Molly.

²³ Lee, Molly.

²⁴ Huddleston, Gary.

²⁵ Huddleston, Gary.

-
- ²⁶ Hammerschmidt, Neil. "USDA Update on ADT," 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.
- ²⁷ Shere, Jack. "Biosecurity & Indemnity — the Path Forward," 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.
- ²⁸ McGrath, Michael. "Interstatelivestock.com Website Demo & Update," 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.
- ²⁹ Grooms, Dan. "BVD Overview — The Disease, History, Management & Control," BVD: An Industry Prevention Strategies & Solutions Forum, April 7, 2016.
- ³⁰ Jones, Lee. "Experiences with BVD in the Southeast," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.
- ³¹ Stout, Robert. "Government Response for BVD--PI Control," 2016 National Institute for Animal Agriculture Annual Conference, April 5, 2016.
- ³² Grooms, Dan.
- ³³ Peel, Derrell. "Economic Aspects of BVD; Effects on US Cattle Herd," BVD: An Industry Prevention Strategies & Solutions Forum, April 7, 2016.
- ³⁴ Larson, Bob. "BVD Consult Herd Specific BVD Control," BVD: An Industry Prevention Strategies & Solutions Forum, April 7, 2016.
- ³⁵ Peel, Derrell.
- ³⁶ Lee, Molly.
- ³⁷ Bickett--Weddle, Danelle. "Animal Care & Biosecurity ... Is There a Crossover?" 2016 National Institute for Animal Agriculture Annual Conference, April 6, 2016.

OTHER SPEAKERS AND TOPICS AT THE CONFERENCE (listed by committee/council)

Animal Care Council

“Tail Docking – A View from Three Fronts”, Jim Fraley, Illinois Farm Bureau; Ria de Grassi, California Farm Bureau; Jamie Jonker, PhD, National Milk Producers Federation

“Why Does Consumer Perception Trump Science?”, Jim Fraley, Illinois Farm Bureau

“National Pork Board’s Efforts on Educating Farmers on Common Swine Industry Audit”, Patrick Webb, DVM, Director, Swine Health Programs, National Pork Board

“ABF, NAE, What’s It to Me?”, Leah Dorman, DVM, Director, Food Integrity & Consumer Engagement, Phibro Animal Health

“AVMA’s Humane Endings Efforts: Panel on Depopulation”, Cia Johnson, DVM, Director, Animal Welfare Division, American Veterinary Medical Association

Animal Health and Emergency Management Council

“Epidemiologic Investigations of HPAI: What They Tell Us About Disease Prevention and Control”, Brian McCluskey, DVM, PhD, MS, Dip., ACVPM Executive Director, USDA APHIS VS

“Avian Influenza Challenges from a Producer’s Eye”, Mr. Mark Van Oort, Complex Manager, Center Fresh Egg

“Winter Storm Goliath: Lessons Learned”, T.R. Lansford III, DVM, Assistant Executive Director, Texas Animal Health Commission

Animal Identification & Information Systems Council

“USDA Update on ADT”, Neil Hammerschmidt, Program Manager, Animal Disease Traceability, USDA APHIS VS; and Jack Shere, DVM, PhD, Associate Deputy Administrator, USDA APHIS VS

“Interstatelivestock.com Website Demo & Update”, Michael McGrath, Trace First Limited

“ADT from a 30,000 Foot View”, John Clifford, DVM, Chief Trade Advisor, USDA APHIS VS

“Minnesota State Perspective on HPAI”, Stacey Schwabenlander, DVM, Senior Veterinarian, Minnesota Board of Animal Health

“UHF Project Updates”, Nephi Harvey, Fort Supply Technologies

“Intelligent Animal ID”, Tom Breunig, General Manager, SCR Dairy, Allflex, Inc.

“Disease Traceability During 2015 Disease Outbreak”, Paul McGraw, DVM, Wisconsin State Veterinarian; Stacey Schwabenlander, DVM, Minnesota State Veterinarian; and Dave Schmitt, DVM, Iowa State Veterinarian

Antibiotics Council

“2015 Antibiotic Symposium Review & Survey Evaluation”, Eric Moore, DVM

“Biosecurity in Feed Manufacturing/VFD Update: A Perspective from the Feed Industry”, Gary Huddleston, Manager, Feed Manufacturing Safety & Environmental Affairs, American Feed Industry Association

“Antimicrobial Legislation in CA: Process, Challenges and Successes”, Annette Jones, DVM, State Veterinarian, California Department of Food and Agriculture

“Antimicrobial--Resistant Bacterial Populations and Antimicrobial Resistance Genes Obtained from Environments Impacted by Livestock and Municipal Waste”, Terrance Arthur, PhD, Microbiologist, U.S. Meat Animal Research Center, USDA ARS

“2016 Antibiotics Symposium”, Patrick Gorden, DVM; and Eric Moore, DVM

Aquatic Livestock Committee

“Commercial Aquaculture Health Program Standards (CAHPS)”, Kathleen H. Hartman, DVM, PhD, MS, Aquaculture Program Leader, USDA APHIS VS

“Review and Prioritization of Top 3 Sustainability Indicators”,
Marty Matlock, PhD, PE, BCEE, Executive Director, Office of Sustainability,
University of Arkansas

“Development of Metrics for Top 3 Indicators”, Marty Matlock, PhD, PE, BCEE

Bovine Committee

“Next Generation Sequencing to Identify Viruses Associated with Bovine Respiratory Disease”, Ben Hause, PhD, Clinical Assistant Professor, Kansas State University

“Experiences with BVD in the Southeast”, Lee Jones, DVM, Assistant Professor,
Beef Production, University of Georgia, College of Veterinary Medicine

“Governmental Response for BVD-PI Control”, Robert Stout, DVM–State Veterinarian,
Kentucky Department of Agriculture

“Government and Industry Cooperation in Export Assurance”,
Sara Kaman, DVM, USDA APHIS VS, National Import Export Services

Emerging Diseases Council

“Update on FMD and Its Implications”, Nevil Speer, PhD, MBA, Vice President,
U.S. Operations, AgriClear, Inc.

“The Emergence of HPAI in the U.S.”, Travis Schaal, DVM, Internal
Technical Services Manager, Hy-Line International

“Update on Seneca Valley Virus and Other Emerging Production Diseases of Swine”, Paul Sundberg, DVM, MS, Executive Director, Swine Health Information Center

“Governmental Response to EHV-1”, Robert Stout, DVM, State Veterinarian,
Kentucky Department of Agriculture

Equine Committee

“EHVI Outbreak Management from the Regulatory Perspective”, William J. Fisch, DVM, Veterinary Manager of Equine Programs, Division of Animal Industry, Florida Department of Agriculture and Consumer Services

“Biosecurity – Logical, Implementable Biosecurity Plans for Horseshows”,
Katie Flynn, BVMS, MRCVS, Equine Staff Veterinarian, California
Department of Food & Agriculture

“Business Continuity in the Event of a Disease Outbreak”, Dave Fly,
DVM, New Mexico Racing Commission

Global Animal Health, Food Security & Trade Council

“The Potential Impact of Consumer Trends on Quality and Safety of our
Food Supply”, Francisco Diez-Gonzalez, PhD, MS, Head and Professor,
Department of Food Science and Nutrition, University of Minnesota

“HPAI Industry Perspective and Update”, David Schmitt, DVM, State
Veterinarian, Iowa Department of Agriculture and Land Stewardship

“Food Security Implications with an Animal Disease Incident”, Travis Schaal,
DVM, Internal Technical Services Manager, Hy-Line International

“Farm to Table: State Challenges for Advocating, Regulating
Agriculture”, Barbara Glenn, PhD, Chief Executive Officer, National
Association of State Departments of Agriculture

Poultry Committee

“Crystal Clear – Indiana’s Response to HPAI”, Paul Brennan,
Executive Vice President, Indiana State Poultry Association

“Highly Pathogenic Avian Influenza: The Role of Wild Birds”, Thomas
J. DeLiberto, DVM, PhD, MS, NWRC Assistant Director, USDA APHIS
WS

“Can You Keep High Path Avian Influenza from Entering Your
Operation?”, Jean--Pierre Vaillancourt, DVM, PhD, MSc, University
of Montreal, Quebec

Small Ruminant Committee

“Integrity of Risk Assessment Science Underlying USDA Policy”, Mark
Thurmond, DVM, PhD, Professor Emeritus, Department of Medicine &
Epidemiology, School of Veterinary Medicine, University of California, Davis

“Emergency Response Preparedness: Considerations for the Small Ruminant Industry”, Jim Logan, DVM, State Veterinarian, Wyoming Livestock Board

Swine Committee

“Swine Health Center Update”, Paul Sundberg, DVM, MS, Executive Director, Swine Health Information Center

“Assessment of the Economic Impacts of PED”, Glynn Tonsor, PhD, Associate Professor, Department of Agricultural Economics, Kansas State University

“Swine Health Programs Update”, Troy Bigelow, DVM, USDA APHIS VS

2016 Annual Conference Planning Committee

Michael Coe, DVM, Co Chair, Animal Profiling International

Karen Jordan, DVM, Co Chair, Dairy Farmers of America

Leah Dorman, DVM, Phibro Animal Health

Julie Smith, DVM, University of Vermont

Patrick Webb, DVM, National Pork Board

2016 BVD Forum Planning Committee

Nevil Speer, PhD, MBA – Co Chair, AgriClear, Inc.

Josh White – National Cattlemen’s Beef Association

Michael Coe, DVM – Animal Profiling International, Inc.

Nathan Dewsbury, MS – Thermo Fisher Scientific

Tony Good, DVM – Select Sires

Dale Grotelueschen, DVM – University of Nebraska, Lincoln

THE 2016 ANNUAL CONFERENCE WAS FUNDED IN PART BY:

Allflex USA

American Veterinary Medical Association

Animal Profiling International, Inc.

Beef Checkoff

Beef Quality Assurance

Boehringer Ingelheim -Vetmedica, Inc.

Bovine Veterinarian/Drovers/Dairy Herd Management and Pork Network

Dairy Farmers of America

Farm Credit

Fort Supply

Technologies, LLC

GlobalVetLink, L.C.

Livestock Marketing Association

Merck Animal Health

National Livestock Producers Association

Norbrook Inc.

ProfitSource

Trace First

Ltd.

U.S. Department of Agriculture

Where Food Comes From

CONTACT INFORMATION

National Institute for Animal Agriculture

13570 Meadowgrass Drive, Suite 201

Colorado Springs, CO 80921

Phone: 719-538-8843

www.animalagriculture.org

