

# Could local sourcing help control feed ingredients' microbial quality?

September 15, 2020

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# Anitox

Anitox is a global leader in feed additives for improving feed safety and animal health. This is the first installment in a five-part webinar series, featuring Dr. John Clifford and his panels of experts. We look forward to exploring the big issues affecting the animal feed industry and learning more about the potential for feed to act as a fomite for salmonella, PEDv, African Swine Fever and a host of other pathogens that impact animal health, productivity and human food safety. Anitox stands ready – as it has done for more than 40 years - to partner with the world's leading food producers to ensure their feed is free from contamination right up to the point of consumption.

Courtesy of Anitox today's slides are available upon request. Please contact Anitox at: <https://more.anitox.com/contact>

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# Today's Speakers



**Dr. John Clifford**  
Former USDA Chief  
Veterinary Officer



**Dr. Kurt Richardson**  
Anitox



**Bobby Acord**  
Former Administrator, USDA's Animal  
and Plant Health Inspection Service  
(APHIS)

**Dr. John Clifford** works for USA Poultry and Egg Export Council as a veterinary trade adviser. He provides input on OIE Chapters that affect poultry and advice on USDA policy related to poultry. Prior to his current role, he was employed for 33 years with USDA where he provided leadership in protecting our nation's animal health and by ensuring continued international trade opportunities as the Chief Trade Adviser for Veterinary Services. Dr. Clifford served 12 years as the Chief Veterinary Officer for USDA, Veterinary Services in Washington, D.C. He also served as the United States delegate to the OIE for 12 years. Dr. Clifford began his career in Kentucky as a private veterinarian in a mixed practice. He received his DVM and BS degrees in animal science from the University of Missouri.



**Dr. Kurt Richardson** has been with Anitox for almost 30 years and holds the position of Chief Science Officer. He has published more than 80 articles in scientific and trade journals, holds 14 patents, and is well recognized as an industry expert in microbial contamination and control. He received his Ph.D. in Toxicology from North Carolina State University.



**Bobby Acord** was the administrator of the USDA's Animal and Plant Health Inspection Service (APHIS) from 2001 to 2004. He was APHIS' associate administrator from August 1999 until 2001. From 1990-99, he was deputy administrator for wildlife services in APHIS. Acord served in several managerial positions in APHIS's then-Animal Damage Control unit from 1986-89, in Denver, Colorado, and Washington, D.C., after having worked in several other areas of responsibility in APHIS from 1973-86. He began his federal career as an Agricultural Marketing Service agricultural commodity grader in Los Angeles, California, in 1966. Acord holds a B.S. degree in animal science from West Virginia University in Morgantown.



# Trade and Risk of Disease Transmission via Feed

Bobby Acord, Retired APHIS Administrator

# Animal feed market overview

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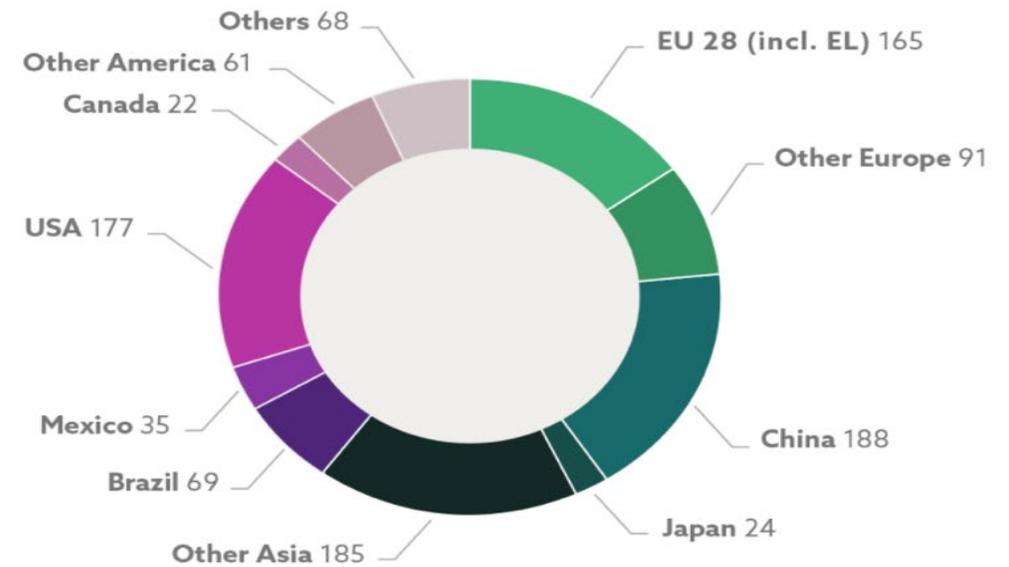
- World compound feed production: 1 billion tons annually
- In addition, 300 million tons of feed produced by on-farm mixing
- Commercial production or sale of manufactured feed products takes place in more than 130 countries

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**2018 GLOBAL ANIMAL FEED PRODUCTION IS CA.1.085 BILLION TONNES  
WORTH OVER \$400 BILLION**

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**GLOBAL COMPOUND FEED PRODUCTION 2018 (MIO. T)**



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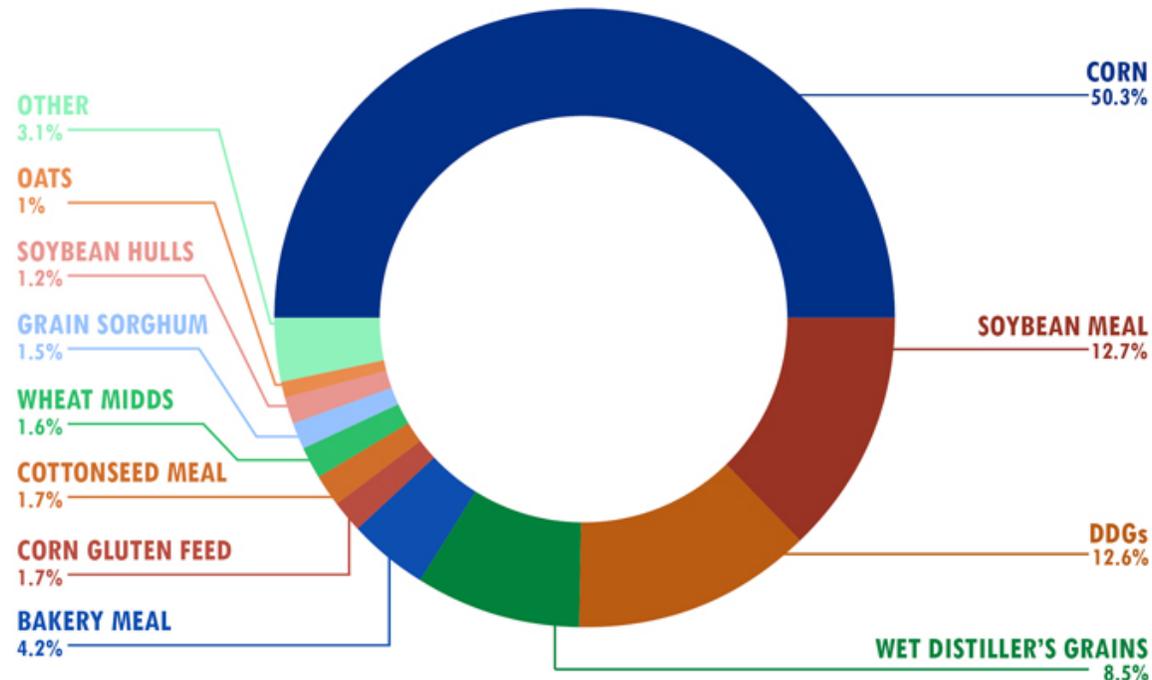
Source: IFIF / FEFAC

Feed ingredients come  
from all over the world

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# No ingredient is without pathogen risk

## TOTAL DIET COMPOSITION FOR TOP LIVESTOCK AND POULTRY IN 2016



Source: American Feed Industry Association (AFIA)

- A growing body of research by leading academics shows feed is a fomite for pathogens
- Viruses can survive in feed for long periods of time
- Recognizing and reflecting that risk in our trade policies moving forward is critical

# Farm-to-fork pathways for pathogen transmission

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- Bacteria in feed can originate from feed ingredients, ingredient storage or during the feed manufacture process
- There are a number of opportunities for the contamination and re-contamination of animal feed and livestock throughout the farm-to-fork pathway
- The food industry needs baselines that establish clear scientific points of differentiation based on microbial load to keep trade flowing safely



# Complexities of Trade

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- Dealing with trade issues is extremely frustrating
- Dealing with one government is difficult, but with two – Your problem is squared!!!!
- It is a slow process, time consuming because it often involves translation
- Patience and persistence is a key requirement
- Disappointments are frequent
- And, just like poker....You have to know when to hold 'em and when to fold 'em!

# Who Governs Trade in the US

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- World Trade Organization (WTO)
- Sanitary and Phyto-Sanitary Agreement and by Reference Standards of:
  - World Organization for Animal Health (OIE)
  - International Plant Protection Convention
  - Codex Alimentarius
- The Animal and Plant Health Inspection Service (APHIS), Food Safety Inspection Service (FSIS) and the Food and Drug Administration (FDA) are fully involved in the final approval of these standards

# How OIE Are Standards Developed

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- OIE Standards are developed through what's known as the "Code Commission" with a Chairman elected by member Countries
- Working Groups of international scientists are appointed from nominations by member countries to develop new or amend existing standards
- Final drafts are circulated to member countries for comment
- APHIS' Veterinary Services then circulates to U.S. affected industries for comment which forms the basis for U.S. comment back to the OIE
- Final standards are presented to the OIE delegates for consideration at the OIE annual meeting
- Delegates can vote to adopt or send back to the Code Commission and working group for further work

# IPPC & Codex Standards

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- IPPC process is very similar to the OIE
- The Codex process is extremely frustrating
- Working groups are appointed and usually meet once per year
- The debate seems to go on forever and takes years to complete
- Final adoption by the Codex Commission

# Tariffs vs SPS Issues

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- The first issue to resolve in free multilateral and bilateral trade agreements is tariffs
- Countries typically use high tariffs to protect their domestic industries
- Resort to SPS barriers for protection
- Under the guise of ALOP they distort SPS standards (Australia and the EU are prime examples)
- Countries prepare risk assessments where questionable science is used to distort the risk
- Negotiations then become all about interpretation of the standards and risk mitigation

# U.S. Obligations Under WTO Rules

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- The U.S. has agreed to the concept of “Free Trade” and to be bound by the SPS agreement
- Decisions on whether or not a product can be imported must be science based
- If there is a risk, can it be mitigated
- Circumstantial or anecdotal evidence of risk or whether we trust a country cannot be considered
- If we persist in keeping out products for non science-based reasons, retaliation is likely to occur
- The law of physics applies here “for every action there is an equal and opposite reaction”

# Effective Enforcement of Standards

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- The standards are obviously not ironclad
- In 2013 the U.S. had an introduction of PEDV
  - pork industry lost 10% of the 2013 pig crop
  - spent thousands of \$ on increased biosecurity
  - PEDV strain was the same one circulating in China
  - Tote bags carrying soymeal was likely fomite

# Effective Enforcement of Standards

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- Around the same time as PEDV was introduced four other new viruses were found in the U.S. (including the Porcine Delta Corona Virus) all from China
- Recent research by Dr. Scott Dee determined that FADs such as FMD and ASF can survive in feed for several weeks, longer than the transit time from a foreign source
- Dr. Dee's work was replicated by Dr. Megan Niederwerder at Kansas State who found even longer survival times

# Pathogen control and mitigation measures are critical

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- Holding times are not a sufficient measure – and not a very practical one for food producers
- One of the most effective components of feed mill biosecurity is the prevention of hazard entry during the receiving of ingredients
- In addition, proactive activities to help reduce biological hazards, including thermal processing by pelleting, are commonly practiced

# Ongoing protection is crucial

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- End goal: clean ingredients at the point of consumption and, ultimately, food that is safe for animals and consumers
- There are not that many practical ways to ensure ongoing protection from contamination
- Pelleting is a point-in-time mitigation step
- Chemical additives, such as formaldehyde, carry residual activity that may reduce or prevent post-processing cross-contamination
- Even though consumer education might be required, the food industry does have some tools at its disposal

# What is Our First Line of Defense Against Disease Introduction via Feed?

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- First line of defense is FDA: all imported feed must comply with same regs as U.S. produced feed
- Foreign facilities must register with FDA and provide advance notice before shipment to the U.S.
- FDA oversees foreign manufacturers' compliance with reg requirements
- Reviews are done by FDA personnel from U.S.
- Frequency of those visits are a concern
- Trust but verify is an import axiom to keep in mind
- The American Feed Industry Association (AFIA) also provides a line of defense through work with their members

# Second Line of Defense

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- Bureau of Customs and Border Protection's Agriculture Quarantine Inspectors (BCP-AQI) cargo inspection at ports of entry
- They verify compliance with the Animal and Plant Health Inspection Service's Animal and Plant Health Protection Acts
- Verify compliance with APHIS' import permits to determine if products are legally enterable
- Look for smuggled products, mislabeled product or products that are mis-manifested
- Compliance with plant health requirements is important due to potential for introduction of plant pests or diseases that could affect the U.S.

# Second line of Defense (Continued)

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- Looming crisis with AQI inspection
- Inspection activity is funded by user fees
- COVID disruption in travel and trade has dramatically reduced fee collections
- **By September 30 they will be depleted with no bail out plan!!!!!!!!!!**

# Summary

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- It has been clearly established by actual introduction of disease that imported feed is a risk
- Research has demonstrated that feed is a risk
- Can risk be mitigated? YES
- Can we just prohibit imported feed? NO
- Must comply with WTO requirements with science-based decisions
- Marketplace will decide

# Poll Question

# Questions and Answers



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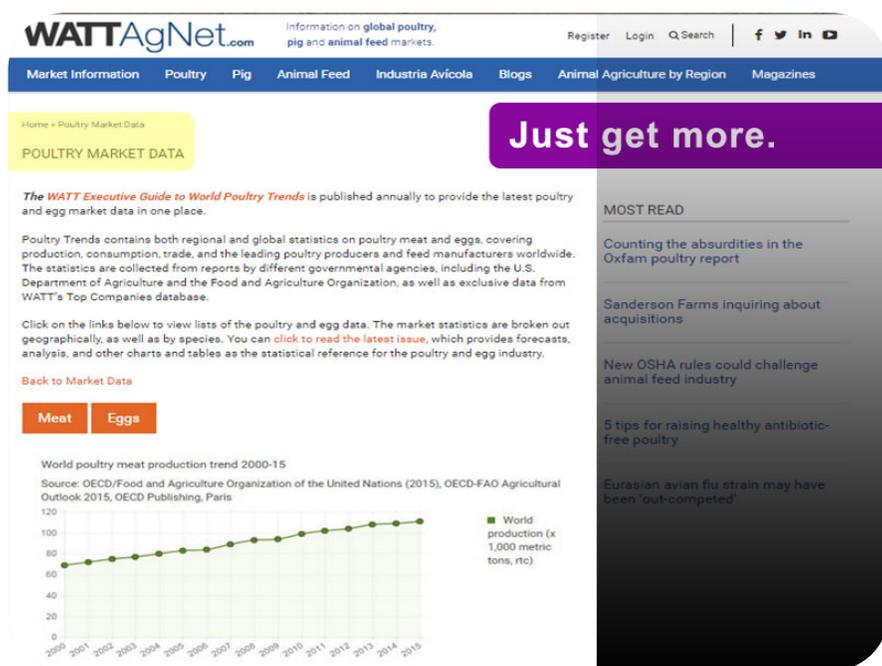
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**Meat** Eggs

World poultry meat production trend 2000-15  
Source: OECD/Food and Agriculture Organization of the United Nations (2015), OECD-FAO Agricultural Outlook 2015, OECD Publishing, Paris

Year	World production (x 1,000 metric tons, etc)
2000	65
2001	68
2002	70
2003	72
2004	75
2005	78
2006	80
2007	82
2008	85
2009	88
2010	90
2011	92
2012	95
2013	98
2014	100
2015	102

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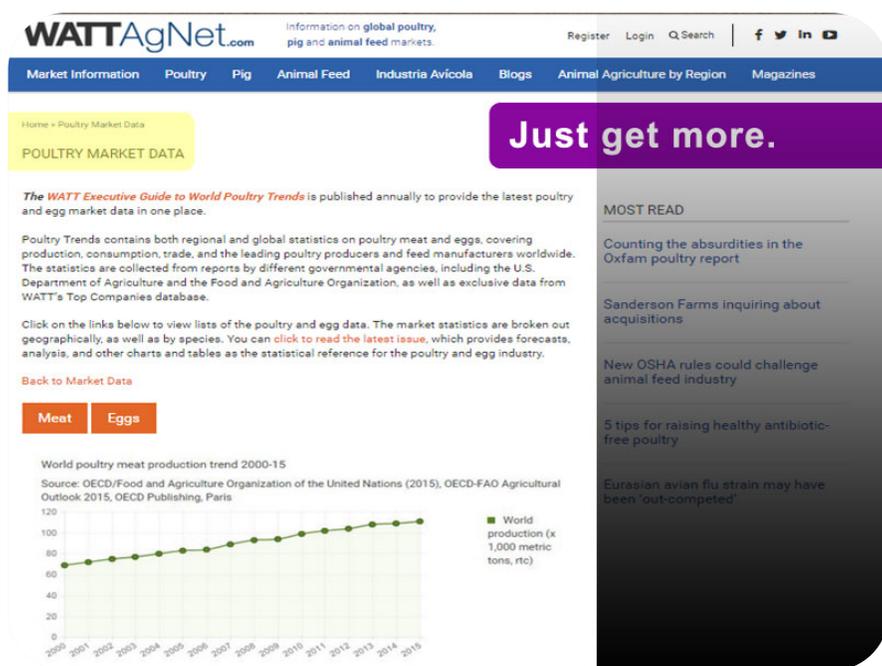
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