

Top takeaways and teasers

#### What Are Consumers Craving From The Pork Industry?

Jarrod Sutton, senior vice president, strategy and innovation, US National Pork Board

# Takeaway points:

- Anybody can gather data. Big data is available. The discipline is developing the right analysis approach, with the objective of understanding what the things you're discovering actually mean to your business and your industry.
- It's about taking those insights and turning them into action. Research to insight, next step is insight to action. We do that by developing an ecosystem of data partners; we call this market intelligence centre of excellence.
- We are executing a sophisticated, digital-first marketing strategy. We talk about real pork. Real food made by real people, real farmers, in particular, with real quality attributes that align with consumer needs. This is about how we truly turn data analytics and insights into action. How we position the product and continue to grow and co-create with consumers.



#### **Risky Business: Protecting Your Swine From Mycotoxins**

Dr. Alexandros Yiannikouris, group research director, chemistry and toxicology division, Alltech

## Takeaway points:

#### Mycotoxins are a complex problem

- Mycotoxin detection is a key tool. Advances in the last 15 years allow us to have a much wider view of the multiple mycotoxin challenge, Alltech 37+ can now detect up to 54 mycotoxins.
- 96.5% of Alltech 37+ samples contaminated with at least one mycotoxin, average of 5 mycotoxins per sample.
- Risk assessment expressed via Risk Equivalent Quantity (REQ). This expresses the overall threat to a species' health and performance based on the cumulative effects of the group of mycotoxins in a feed sample.

#### Mitigation of mycotoxin risk impact

- Three primary types of mycotoxin binding solutions: clay, enzyme and organic.
- Genomic selection for yeast cell wall (YCW) allows for the increased production of specific, selected fractions.

#### In Vitro research with YCW (Mycosorb®)

 Advances in tools like mass spectrometry allow for a better demonstration of how multiple mycotoxin risk can be reduced. Allow for comparison of initial REQ to the REQ when mycotoxin mitigation has been implemented.

#### In Vivo research with YCW

- Demonstrates how the multiple mycotoxin risk can be controlled within the animal.
- Pharmacokinetics of multiple mycotoxin risk can be improved.
- Research demonstrates that with the use of an adsorbent, biomarkers and oxidative stress can be improved.



#### **Achieving Top Performance: What Does It Really Take to Be the Best?**

Valerie Duttlinger, chief analytics officer, Summit SmartFarms

# Takeaway points:

- Thomas Edison: "There's a way to do it better-- find it."
- 80:20 rule: The best you're doing 20% differently, that 20% is organisational health.
- When it comes to pig farms, the four components of organisational health are people first, being a coach and not a boss, deploying tools to win and creating an irresistible culture.
- Each 1.08 improvement in job satisfaction, there was an improvement of one pig weaned per mated female per year.
- What are components of an irresistible place to work: having great teamwork, having clear goals and objectives, working in strength areas and increased engagement and satisfaction.

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#### **Optimizing Pig Potential: Inside the Gut Microbiome**

**Dr. Noelle Noyes,** assistant professor, Veterinary Population Medicine Department, University of Minnesota

# Takeaway points:

- Intestinal microflora is a topic that has been discussed continuously in recent years. This topic mainly focuses on the relationship between the intestinal microflora of pigs and the use of antibiotics, as well as how antibiotics affect the intestinal microflora of pigs, thus affecting antibiotic resistance. Sharing the PRRS challenge test conducted on pigs from the beginning of the animal production system and the use of antibiotics.
- It was divided into three groups: no resistance group, low resistance group and high resistance group. Through the faecal samples, we analysed the antibiotic resistance. The results showed that the drug resistance of animals was low in the later period, but they had certain resistance to different antibiotics. At the same time, in different periods of time, their resistance did not change. In the analysis of intestinal microflora, it was found that the intestinal microflora itself changed with the change of animal age or diet, which also affected the final change of drug resistance.

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Microbial diversity video can be used to demonstrate Alltech solutions

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# **Poultry Session**

#### **Prioritizing Food Safety in Poultry Production**

Dr. Karina Horgan, associate research director, Alltech European Bioscience Centre

## Takeaway points:

- Gut health is a good indicator of disease status in poultry.
- High diversity of microorganisms in the intestinal tract is critical in animal health, while diseases and antibiotics will affect the diversity of intestinal microorganisms.
- Mannan oligosaccharides can reduce the number of pathogenic bacteria by improving the
  intestinal structure and helping the growth and reproduction of microorganisms in the
  body. At the same time, mannan oligosaccharides can reduce the ability of bacteria to
  attach the intestinal cells, thus improving animal health.

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# **Poultry Session**

#### **Bugging About the Future: Possibilities of Insect Meal in Poultry Production**

**Dr. Stephanie Collins**, assistant professor, monogastric nutrition, Dalhousie University, Faculty of Agriculture, Department of Animal Science and Aquaculture

# Takeaway points:

- Insects are a great possible new protein source. They can be farmed vertically, require little water and very low land mass to produce, all while reducing waste.
- Current barriers to the use of insects in poultry meal are the cost and availability. Insect protein is classed as a novel feed ingredient and, so, approval from regulatory bodies would be required. We are also unfamiliar with potential anti-nutritional factors in poultry and, so, this requires more research.
- One of the major benefits of insect meal or oil is that developed countries have huge amounts of waste, and this could be upcycled into a high-value product, which is environmentally sustainable and can provide health benefits to poultry. Developing countries can hugely benefit from this too, through converting low-nutritional-value human food waste into high-value protein.

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# Poultry Session

## Go With Your Gut: Modulating Antimicrobial Resistance for Health and Well-being

**Dr. Richard Murphy,** research director, Alltech

## Takeaway points:

- Intestinal microbiome affects animal body function and intestinal development in many ways.
- Different factors affect the diversity of intestinal microbiome. By controlling the diversity of intestinal microorganisms, we can improve animal health and animal production performance.
- The impact of antibiotics on human beings, animals and the environment is becoming more and more serious. Mannan-oligosaccharide and its uploaded product can effectively help animal intestinal microbial ecological reconstruction and repair, regulate the resistance genome and reduce the drug resistance of pathogenic bacteria.

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Microbial diversity video can be used to demonstrate Alltech solutions.



# **Poultry Session**

#### How the History of Antibiotic Resistance Will Impact Poultry's Future?

Dr. Kayla Price, Canadian technical manager, Alltech Canada

# Takeaway points:

- The resistance genes moved through three ways, which is plasmids, transposons and phages, respectively. Resistance genes stay in the bacteria to increase their virulent and fitness. It could be increased by different stressors, like antibiotics.
- Therefore, it is essential to understand the mechanism behind all the theory.
- Finally, by reviewing the mechanisms of resistance genes and pathways of antibiotics uses, it concluded that a good way to reduce or eliminate antibiotics is to establish an intestinal health support plan to form a combined approach from the overall solution.

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#### **Organic Trace Minerals: Optimizing Dairy Cattle Nutrition**

Steve Elliott, global director, mineral management division, Alltech

## Takeaway points:

#### 1. What is the real requirement?

We have proven that it is significantly lower with organic trace minerals (OTMs).

2. Have you considered the trace mineral source interactions?

We have shown that OTMs have fewer negative interactions with enzymes, antioxidants, and vitamins.

- **3.** Have you considered the environmental impact and inefficiency aspects? Using lower levels of OTMs can reduce excreted levels, thus, improving the efficacy of trace mineral fortification.
- **4.** Have you considered the risks of impurities and food safety? Strict quality control programs help eliminate impurities.
- 5. Is there a feasible alternative to our current approach to trace mineral fortification and improved efficiency?

We call it Total Replacement Technology and many research trials showing the TRT approach works.

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#### Mycotoxin Mitigation: Linking Feed Quality and Dairy Cow Performance

**Dr. Duarte Diaz,** dairy extension specialist and associate professor, University of Arizona, Department of Animal and Comparative Biomedical Sciences

## Takeaway points:

#### Why has mycotoxin contamination increased?

- Testing methods are continuously improving and becoming more and more accurate.
- Producers are now testing more often.

#### The importance of correct sampling

- Sampling is the beginning of successful mycotoxin analysis.
- To be most effective, multiple "grab" samples are required.
- This increases representation of total inventory present and removes potential biases and inaccuracies.

#### Weather and agronomic influence on mycotoxin risk

- Regional weather influences play a significant role in determining mycotoxin contamination.
- Cropping practices like no till and remaining residues influence the presence of moulds and mycotoxins.

#### Cow performance and production intensity

- Increased production intensity may be causing animals to be more susceptible to mycotoxins.
- Genetic improvements are primarily for more milk. Selecting mainly for performance parameters like milk may increase the risk when the animal is exposed to mycotoxins; cows may be less robust.

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#### More Milk for All: Sustainable Dairy Production in Low-Income Countries

**Dr. Juan M. Tricarico,** vice president for sustainability research, Dairy Management Inc. (DMI) and the Innovation Center, U.S. Dairy

# Takeaway points:

- Increasing milk production from the currently available resources is the single most important strategy for improving sustainable milk production and consumption in developing countries.
- Improving the availability of quality feed, providing balanced nutrition and good husbandry practices and breeding selectively to improve genetic potential are the best strategies to improve milk production.
- Many factors have a role in driving demand for dairy foods and supply of milk in developing countries and education on the benefits of consuming milk and dairy foods is critical. "Sustainability under these conditions requires that emphasis be placed, not only on the supply of nutrients to populations under risk but also education about the contributions of milk and dairy foods on human growth, development and health in general."

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## What's on Tap for the Milk Market: Global Outlook and Insights During Uncertain Times

**Dr. Torsten Hemme,** founder and CEO, IFCN Dairy Research Network

## Takeaway points:

- Dairy crises: We have two or three crises every 10 years. Then there is a tremendous connectivity between global and national milk prices, and they are underestimated. And we recommend navigation tools are very helpful to monitor, especially in these times.
- In the COVID times, this crisis has many drivers, and we have not reached all the critical ones yet. In many countries, farmgate prices have not reacted strongly on the world market price. The price scenario with future markets indicates a V-shaped recovery, where IFCN opinion is more of a U-shaped scenario.
- And finally, crisis and crisis management. There are three phases. There is the way into the crisis. There is a way out of the crisis. And there is the time after the crisis. I recommend to first manage the way into the crisis because it will definitely run into Q2 and Q3. Maybe by Q4, we might be going out of the crisis. And maybe by mid-2021 or '22, we have a time after the crisis to prepare.

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#### **Consistent Diet, Content Cows**

**Dr. Trevor DeVries,** professor and Canada research chair, Department of Animal Biosciences, University of Guelph

# Takeaway points:

- For dairy cows, the old adage "you are what you eat" isn't the only thing that matters —
  how and when cows are fed is also important.
- We need to make sure that feed gets delivered precisely and accurately, as formulated, day in, day out, to make sure that cows not only gets the diet that we intend for them but make sure that diet gets digested as efficiently as possible.
- Making sure that the feed that does get delivered is consumed as delivered, through managing dietary components, managing that feed at the feed bunk, so that at the end of the day, we see as efficient consumption, efficient digestion and optimal production from our cows.

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#### **Sunny With A High Chance of Cattle: The Ag Market Outlook**

**Kevin Good,** vice president of industry relations and analysis, CattleFax

# Takeaway points:

- With tremendous supply and demand disruptions due to COVID-19, the bottom line is that
  there are going to be lower prices received for all classes of cattle as we move through 2020,
  compared to the previous estimates. Because of that, and because of what we are seeing in
  the dairy industry with milk values, we should be fully prepared to see continued liquidation as
  we think about 2020 through the remainder of this year.
- We also need to recognise that there are some positive points. Demand will come back. We've got very strong export demand. Let's remember that we still have a protein deficit in China, in particular. They're going to continue to take a lot of our protein over the next few years.
- Domestically, as restaurants start to open up, we are fully anticipating a more robust situation. Unfortunately, there has been some economic damage that will negate some of that.

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### Ruminant Reality: Diet, Human Health and the Environment

**Dr. Peter Ballerstedt (aka "The Sodfather"),** forage ambassador, Barenbrug USA.

# Takeaway points:

- We can't feed today's world without ruminant animal agriculture, and unless we improve the productivity and efficiency, globally, of our ruminant animal agriculture systems, we won't meet the needs of 2050.
- We can have healthy soils and healthy people all thanks to ruminant animal agriculture.
- Grazing animals are essential to grassland health, forage systems are part of crop systems, there is no either/or and if we're going to meet the goals of 2/3 increase demand for animal-source protein by the year 2050, we have to increase the productivity and efficiency of ruminant animal agriculture globally.

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#### The Blueprint® Nutritional Philosophy

**Tyler Melroe,** senior nutritionist, Hubbard Feeds

# Takeaway points:

- Blueprint is a brand-new way of approaching mineral nutrition that consists of replacing inorganic minerals with lower levels of Bioplex and Sel-Plex, because organic and chelated trace minerals are more bioavailable to the animal.
- Blueprint is something of a relatively unknown concept and maybe kind of brought in this idea
  of foetal programming or the fact that maybe we are impacting the way particular genes are
  being expressed.
- With Blueprint, we are able to reduce the amount of mineral without negatively affecting performance.





#### **Analyzing the Impact: Examining the Environmental Hoofprint of Beef**

Dr. Vaughn Holder, ruminant research group director, Alltech

## Takeaway points:

- The beef industry is receiving increasing negative attention surrounding its impact on the environment. This session highlights how our beef industry absolutely has to survive in order to meet the protein demands of our growing population. Cattle are the only animals capable of using rangeland, which represents 14% of the earth's surface. Only ruminants can upcycle protein, and they are far more efficient than swine or poultry, producing more protein than they consume.
- If we can reduce methane emissions from cattle, we have the potential to cause global cooling rather than global warming there are very few industries that are capable of doing this! The beef industry has focused on efficiency for many years, so we are already contributing to a reduction in warming potential, and that is the message the beef industry needs to communicate.
- Opportunities to reduce the carbon footprint of beef production do exist, and small numbers add up very quickly when we look at changing the efficiency of our farms. Improving parameters, such as weaning weights, fertility rates and decreasing age to pregnancy due to trace mineral supplementation, can significantly help to lower a farm's carbon footprint. Technologies that can improve feed efficiency in beef systems, increasing liveweight gain and carcass weight, can also lead to quite dramatic changes in the carbon footprint of the farm. Technologies highlighted in this session not only benefit the environment but animal performance too, meaning producers aren't having to include something in the diet that won't have a benefit in other places good for farmers' pockets and the environment!

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## Shifting Our Mindset and Shaping New Opportunities in the Beef Business Amanda Radke, BEEF Daily blogger, BEEF Magazine

# Takeaway points:

- In order to be successful in this very challenging beef cattle business that we all love, in the COVID-19 era and beyond, we must respond to shifting consumer demands by innovating, pivoting, connecting and serving.
- The producers who are willing to innovate and pivot their business models in order to better connect with their customers and serve them with what they are actually seeking to buy, those are the folks that are going to be most successful in this industry, even during the darkest of days.
- Focus on the power of the individual beef producer to do good in this world, to fight for fundamental change to ensure our futures in this industry and to continue to provide great tasting, nutrient-dense, safe and affordable beef for the world to enjoy.

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#### Playing By the Rules: How Global Regulations Are Shaping Agronomic Trends

David Brady, global compliance manager, Alltech Crop Science

## Takeaway points:

- Crop production without crop protection technologies is not realistic, and agri-chemicals are among the best-studied compounds we are exposed to in our daily lives, presenting an acceptable risk in accordance with the current scientific insights.
- Public scrutiny is posing a heavy toll on policymakers' regulatory and assessment activity, impacting the registration of future pesticides.
- Risk-based regulation is stifling rather than promoting innovation in agri-chemicals. New products are coming to market at a slower pace, higher cost and are based on old chemistries.
- Regulators and policymakers should take into account the need for investment to secure longterm food chain resilience, namely considering the inclusion of the innovation principle into the regulatory process.

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# Takeaway points:

## Advancing Your Crop Through Genomics, the Microbiome and the Power of "More"

Brian Springer, North America technical manager, Alltech Crop Science

- Fermentation metabolites support and enhance the symbiotic relationship naturally occurring in nature, allowing the beneficial microbes' population to strive and flourish, thus enabling plants to take in nutrients and moisture and better withstand abiotic stress factors.
- Nutrigenomics research offers clues about the genetic potential of the crops and how to
  optimise plants' function. In fact, there is more ability by the plant to produce (which can get to
  three times the actual yields). The application of bacterial extracts to the crops allows not only
  for increased yield but also improved the nutritional value of those crops.
- A preventive mindset, based on indirect inhibition through gene-defensive triggers, focuses on activating the plant's natural defence mechanisms and protecting the genetic potential for yield acting upfront to the surge of problems.





#### **Biostimulants** — As Nature Intended

Cody Eubanks, product manager, nutritional and biostimulants, Simplot

## Takeaway points:

- Biostimulant programmes do not have a "one-size-fits-all" approach; it is rather a systematic approach, that builds from specific programmes, guidelines and recommendations.
- Condition of soil health is the key factor in biostimulant recommendation. Biostimulants play a
  role in the overall soil and plant health; it works on building the soil health and the plant's
  abilities to produce more.
- Under high-stress conditions (whether from a drought, excessive moisture, etc.) biostimulants become a valuable resource to support crop productive capacity, increasing total yield at harvest.
- Biostimulant opportunities cover a vast array of crops, from intensive crops to row crops.
   Producing more in less available land is a common requirement, and biostimulants will play a vital role in the need to increase crop production to feed a rapidly growing world population, promoting soil health, integrating nutritional programmes and supporting sustainable crop production.

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# Takeaway points:

#### **Great Grapes: Strategies for Improving Production**

Nicolas Body, European technical manager, Alltech Crop Science

#### New approach to plant diseases

- Stop focusing on the disease; rather, focus on the plant itself and plant's own defence mechanisms.
   Priming the plant early on allows for more and faster expression of genes involved in the defence response of the plants.
- We have shown positive results of such an approach using biotechnologies on a variety of crops.

#### Meeting new requirements from consumers

- o Fresh, healthy, good-looking food with less to no-pesticides.
- Prosumers the most influential consumer group are driven by the purpose to reduce the environmental and social impact of what they buy and eat and pose a pressure on retailers that translate it into specifications and requirements.

#### How to produce what the consumer wants?

- Agronomists and farmers are required to build new types of crop management programmes, resourcing natural-based solutions, focused on quality at harvest and consumer demands
- Biostimulants will increase marketable quality (taste, colour and nutritional value); biocontrols will help reduce the use of pesticides.

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#### **Staying Relevant When You Can't Be Present**

Dr. Steven M. Borst, general manager, Alltech Crop Science

# Takeaway points:

- Disruptions can be the great equaliser.
- Three ways for the Ag sector to stay relevant: moving to the virtual space (which enables connectivity); acceptance of change and adaptation to the disruption by exploring innovative ways to stay in touch, advise, educate and get produce out to customers and through partnerships that are commitment and trust-driven, enabling shared value throughout the supply chain.
- Value equals communication more than ever, at the backdrop of COVID-19, create and strengthen the relationships and confidence with distributors and customers
- Disruptions give an opportunity to reset. Ask yourself "what's bothering about your business and what you may change", what new opportunities expected and unexpected can be explored to add value to your business and service.

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