On 26-28 September 2018 Feedinfo News Service hosted Feed Additives 2018, its second annual flagship event for executive leaders in the animal feed and nutrition industry. Across three days more than 350 attendees from around the world came to Amsterdam to discuss market trends, innovations, scientific advances and regulations that will define the sector in the coming years.

THE ADDITIVE PRODUCERS’ VIEW

ANIMAL nutrition companies need to be closely monitoring global trade discussions or sudden market disruptors such as African swine fever, and how the resulting volatility swings can have multiple impacts across the chain - from currency exchanges, to economic sanctions and export bans, to possible disruptions in feed additive company innovation. These are worrying issues for all players in the animal nutrition segment wanting to become more resilient.

During the Feed Additives Leaders Panel discussion, participants Patrick Charlton (Vice President, Europe, Alltech), Andre Bos (President Global Products and Strategic Alliances, DSM), Stefaan Van Dyck (President, Kemin Europe) and moderator Martijn Adorf (Managing Director, Terra Nova Life Sciences) discussed these issues as well as some other challenges and opportunities that are poised to the impact the animal nutrition sector in the coming months.

The panellists agreed that digitalisation and automation will be of great help in value-added feed additive development and we can expect progress in this domain in the next year, thanks to the strides made in AI, robotics, blockchain and big data.

“Transparency will be much more visible and have an impact on quality in the value chain. Consumers will know exactly what ingredients were used” said Van Dyck. “For feed additive companies, our products add to the food safety criteria required. Feed hygiene and safety will be more easily integrated moving forward.”

“If you’re not talking to the food producers or retailers, you risk them not seeing the added value of your product. It will be lost in the shuffle”, added Charlton.

“End consumer knowledge of our products is also improving. They are important allies if we want to grow our businesses” Bos pointed out. As an industry we need to step up our efforts in terms of innovation, the panellists said.
“We’re not so consistent in pushing innovations through the system” Bos commented. “We need to remedy the speed of innovation in our sector” he added, urging colleagues in the industry to continue to invest in R&D and sustainability despite the various hurdles. But Van Dyck, Bos and Charlton all singled out evolving regulation as possibly the main barrier or challenge moving forward, especially at European level as product dossiers are getting more complicated.

“Additional sciences such as genetics have to be taken into consideration but probably don’t always work in a product efficiency context” Van Dyck commented. “The current set of rules is indeed a challenge.”

“End consumer knowledge of our products is also improving. They are important allies if we want to grow our businesses.”

ANDRE BOS, DSM

“When we move more to the health arena, things get a little more complicated. An integrated approach is needed” he added.

“The industry needs to be careful of what it asks for when it comes to health claims” added Charlton. “You have a responsibility to back them up.”

JIM SHEPARD, WAYNE FARMS

At the heart of this is a key idea, expressed by panellists Jim Shepard from poultry integrator Wayne Farms and Omarh Mendoza from pork integrator The Maschhoffs: customers need these feed additives tested under their conditions. There is no getting around the need for personalised research. “I need more and more research, not with breeds or bird sizes I don’t have. You need to come in and research with me because my diets may have peanut meal, more or less canola, more threonine or lysine, or a breed you haven’t tested,” explained Shepard.

Naturally, this requires significant resources—from both sides, Shepard observes, not simply from the supplier’s side; for example, the plant visits and audits conducted every three years of key suppliers require investment from Wayne Farms as well. However, this is only natural, from the point of view of the customer. As Mendoza explained, they’re also putting up money for technical staff “and if I’m putting a feed additive in five million pigs, if it’s not going to work, it’s very risky for business”.

In the view of the third panellist, Yoram Knoop, CEO of international feed company ForFarmers, this is representative of a paradigm shift. “For a long time I felt this was a commodity business; now I feel we’re going through a deep decommoditisation of the business. They don’t all want the same [product].” he said.

But of course, this does not only mean extra costs, but also significant opportunities for the industry. “The time that an additive had to do everything [i.e. be the...
best on cost and best for animal health and best for sustainability] is over,” he said. Now, the challenge is matching the right additive to the right opportunity.

**PARTNER VIEWPOINT**

“This event was a great opportunity to bring together a lot of different stakeholders from our industry. We were able to speak to purchasers, nutritionists, technicians, R&D people and scientists in a very relaxed and open atmosphere. Besides this it gave the opportunity to enlarge our network in the industry with some possible co-operations for the future.”

Happily, the feed additives’ customers explain, there are a great many things the additives producers are getting right. Shepard points out that the switch of large percentages of his flocks to antibiotic-free production was remarkably painless thanks to the quality of the non-antibiotic interventions the feed additives industry was able to provide. “We’ve treated less than half a percent; if we do have necrotic enteritis, we’ve learned to treat it otherwise.” He cites essential oils, probiotics and prebiotics as some of the most potent tools in his arsenal.

Of course, there remain challenges which the industry must keep in mind. Overstimulation of the gut is something Shepard is keeping his eye on, while Mendoza emphasizes that consistency of results is something that swine additives in particular must be attentive to. And both American integrators are concerned with the availability of labour, and interested in solutions which lend themselves to automation.

Still, warns Knoop, it is a changed world. As he put it, it’s no longer possible for a feed additive company to secure a sale because a customer likes the look of the salesman, or because of a years-long relationship. Now, you have to have research and evidence-tested solutions.

“As a feed nutritionist it is difficult to evaluate the value of these products.”

KEES GEERSE, F2CARE

Feed additive producers, take notice: nutritionists and feed formulators agree and are paying attention when your studies are not of the very highest quality. This was the conclusion of a second panel from the compound feed industry who presented their needs and challenges to the conference audience.

It is probably unsurprising to learn that many on the panel are frankly tired of feed additives whose pitch mainly reposes on buzz words and general language without any relationship to the product. As explained by Kees Geerse, Senior Nutritionist and Consultant from F2Care, he is frustrated when additives don’t even mention the active component but merely sell a proprietary blend of goodies: “as a feed nutritionist it is difficult to evaluate the value of these products.” Erik Dam Jensen, Chief Nutritionist from Hedegaard and former Chair of the Animal Nutrition Committee at FEFAC, concur, saying: “if it doesn’t have proven effects [backed by scientific studies], I don’t consider it.”

**PARTNER VIEWPOINT**

“A paradigm shift in thinking required; we need to improve animal nutrition, welfare, hygiene and husbandry and TLC (Tender Loving Care), reduce stocking densities and market meat, eggs & milk products as top class, top quality food for all of us - young, old & middle aged.”

However, even those who have studies backing their products’ efficacy should be aware that these studies are often found wanting by the decision makers they are trying to convince. Among the problems cited: incomplete data sets being made available, and absent information about the study methodology. Geerse also explained how imperfect methodologies could obscure whether an additive could truly replace another nutrient; for example, if you are attempting to show your additive can serve as a source of vitamin
x, you might decrease the amount of vitamin x in the control diet and show that no consequence is visible on animal performance; however, if that vitamin is being over-fed in the standard diet, the decrease would not necessarily show a decrease in performance. “Proof of efficacy seems so easy, but in the end is not so easy,” he said.

In his view, part of the responsibility for the decline in the information available to nutritionists is due to the fact that public funding for research is dwindling, leaving privately-funded studies commissioned by the product manufacturers to fill the gap. Calling for objective independent data, both including the nutritional profile of ingredients and about nutritional requirements of the animal, he observes that “minerals and energy are orphans; no one is dealing with them, no public institutions are [looking at] that”.

“If it doesn’t have proven effects [backed by scientific studies], I don’t consider it.”
ERIK DAM JENSEN, HEDEGAARD

At the same time as resources are seen to be declining, demands for improved understanding of nutritional requirements are only increasing, particularly in the aqua sector, where Tone Stigen Martinsen, CEO and Consultant of Bjørnerød Konsult, drew attention to the never-ending cycles of substitution. “For years there was a drive to find other raw materials than fishmeal, which meant a larger amount of soymeal. Now soymeal is also a victim of substitution. It keeps going on and on.” And of course, the substitution of one ingredient for another requires a new series of studies into how the new ingredient is meeting the animal’s need for vitamins, minerals, and other nutrients.

Meanwhile, in the poultry sector, Tom Hughes, Nutrition and Innovation Manager from Moy Park, admitted that while his company had looked at alternatives for coccidiostats, including both feed products and vaccines, they have “yet to find something to deliver as good a result as coccidiostats”. Aware that there is pressure from both retailers and public—and maybe someday regulators—to consider alternatives, he concludes that “there is nothing out there that would entice us to go down that route [of eliminating coccidiostats from feed] voluntarily at the moment”.

Finally, in pigs, there is significant concern about whether the solutions necessary to replace zinc oxide in weaning pig diets are in place. Jensen indicated that, while alternatives exist, they are expensive enough to pose real questions about implementation for farmers who want to make a livelihood; moreover, you might end up with growth significantly below the genetic potential of the animal. “We need to fine tune tools for the situation.” However, he is heartened by the cooperation between the industry and the authorities on this point to brainstorm new solutions, investigate their feasibility, and see what can be done.

M&A AND INVESTMENT
FURTHER industry consolidation can be expected in the global feed, premix and additive sectors in 2018 and 2019. Providing an overview of animal nutrition mergers and acquisitions, Simon Duke, Editor-in-Chief of Feedinfo News Service, said M&A patterns will continue to reflect current industry trends.

Generally-speaking, animal nutrition companies want to reduce their reliance on complete feed and premix, and most investments and acquisitions are geared towards high growth segments.
Obvious areas of focus are natural or bio-based inputs, alternative ingredients, aqua feed, animal health or even information technology. But Duke pointed out that when looking at the global picture for animal nutrition, some of the same trends as in human nutrition can be noticed. Much like human nutrition, animal nutrition customers are becoming even more health conscious and are increasingly looking for organic ingredients as well as antibiotic-free and non-GMO products.

“We must not underestimate the cross-selling that exists within some companies who cater to both animals and humans. Some companies have a human nutrition segment, and those without, may eventually want one too.” According to Duke, this is reflected in the strategies of various large industry players.

“[Alternative proteins] will become mainstream sooner than you think”
MAARTEN GOOSSENS, ANTERRA CAPITAL

In a separate presentation, Maarten Goossens, Co-founder and Principal, Anterra Capital stated venture capital invested in the agricultural biotech space amounted to $10.1 billion in 2017.

According to Goossens, big investors who have looked at farming are now increasingly interested in the food industry. Large scale funds are very active. On the biotech side, companies working in “meat without farms” (e.g. Memphis Meats), “fish feed without fish” (e.g. Ynsect), or “animals without antibiotics” (e.g. Ascus Biosciences) are all garnering significant interest. On the digital side, companies exploring the themes of “farms with robots” or “testing without labs” are also growing in importance.

“Advancements in biotech will lead to shifting profit pools with new products emerging. And digital will offer full service solutions in the future” Goossens commented.

Looking more specifically at alternative proteins, Goossens told the audience that the space continues to grow and must not be overlooked. “It will become mainstream sooner than you think” he said, mentioning that fermentation-based and cell-based meats will be on the market in the coming few years, especially now that traditional meat companies are providing financial and strategic support.

He concluded by saying that the sector must consider that the next generation of animal nutrition customers are Millennials and will want a different experience.
PARTNER VIEWPOINT

“The topics about new and big waves of investment by venture capitals and M&As in our industry were very interesting especially in the aspect that these will bring quite big changes into our business than we think and forecast.”

THE ROLE OF CONSUMERS

UNDERSTANDING the context for industry investments requires a deep understanding of the macro-economic fundamentals and the consumers you ultimately serve, argued keynote speaker Professor David Hughes from Imperial College London.

In his view, Asia and Africa will be the main food markets moving forward as their populations will rise significantly. And we can expect an ongoing fight for market share between industrially produced chicken and fish. But China will also continue to drive food production worldwide as its top tier cities further drive economic growth and are hubs of consumer spending. China is expect to import 6 million tons of meat by 2020, said Prof. Hughes, citing Rabobank data.

However, looking at recent FAO figures, Prof. Hughes pointed out that agricultural production is forecast to decline in the high population growth areas such as Africa and Asia and said that there is either a huge potential to boost production in these regions or on the contrary this could be good news for some big commodity traders. “It will most likely be a combination of both” he commented.

Food consumption trends also vary per geography, he said, listing consumer preferences in various countries. For instance, what shoppers’ value in meat differs per country e.g. Chinese demand for chicken wings is huge with prices seen higher than for chicken breasts in some retail outlets.

“We used to rely on governmental regulations when it comes to food, now it’s customer regulation or special interest regulation in the driver’s seat.”

PROF. DAVID HUGHES, IMPERIAL COLLEGE LONDON

But industrial food production in developed countries faces the same challenges on a global basis. It is increasingly catering to a younger generation of consumers, the rise of the single person household, the need for a plethora of food and protein choices, flexitarian diets, cultured meat, and the natural food trend, or how to reach consumers who are opting more and more food “on the go”.

“We used to rely on governmental regulations when it comes to food, now it’s customer regulation or special interest regulation in the driver’s seat” Prof. Hughes commented. “Social pressures will continue to dictate choices.”

VIEW FROM THE ATTENDEES

“Feed Additives 2018 is a great place to look at some important trends and innovations of the feed additives industry. It is also an opportunity to meet many people” … “I enjoyed the presence of end users talking about their unmet needs” … “As an exhibitor, the balance between programme and breaks was good. Many good discussions during the breaks with potential customers” … “A wide variety of topics and the perfect organization” … “The agricultural industry is seriously lagging other industries when it comes to adoption of new technologies and that when that occurs, it could cause significant disruption to incumbent companies” … “That there is much more going on than I knew. Sometimes positive and sometimes more negative. But there are plenty of opportunities left” … “There is still much to do to improve the feed industry, but advances and research are being made and the future is promising!” … “The event gave a lot of opportunity to talk to people from all over the world. One of the main concerns was gut health problems in relation to the reduced use of antibiotics. This related very well to a lot of the speeches from the industry and from independent scientists given during the event” … “I was very much interested in some topics regarding to advanced genetics for future livestock and the alternatives on the future animal industry such as alternative proteins, meat, bacteriophages and others”
Ludger Rolfes, Division Director, Animal Health & Nutrition Research at Produkt + Markt explored these trends further, presenting the results of a survey involving around 400 German consumers and 400 UK consumers.

Generally-speaking, consumers are a lot more interested in animal welfare, environmental issues and food safety. The survey showed that a majority of consumers in Germany and the UK are concerned about how animals are raised and kept, with a few differences between gender and age ranges, but only half of the consumers asked cared and are concerned about the safety of feed and the additives that go into the feed.

At the same time, less than 40% perceive feed additives as being positive for the environment.

“The feed additive industry should communicate more directly with the consumer.”

LUDGER ROLFES, PRODUKT + MARKT

Vitamins are perceived by the end consumer as beneficial for animals in the minds of 55% of German consumers and 54% in the UK. Herbal extracts didn’t fare too badly either, with 60% in Germany and 42% in the UK seeing them positively. However, amino acids were only 15% and 18%, pre/probiotics 11% and 28%, organic acids 9% and 24%, and enzymes 15% and 16% positive, in German and UK minds, respectively.

The survey showed that consumers are hardly aware of the benefits of feed additives. Less than 3% of those surveyed said they were knowledgeable about feed additives. “The feed additive industry should communicate more directly with the consumer” Rolfes commented.

The general lack of consumer awareness may come as a shock to the animal nutrition industry. But at the same time, it’s no real surprise that the larger restaurant chains who track consumer behaviour are not too involved in developments at feed additive level either, or at least not yet.

“It is important to focus on joint innovation and implementation… we need to stimulate and endorse innovation from the ground up.”

FLOOR UITTERHOEVE, MCDONALD’S NETHERLANDS

Jeroen Dekkers, Supply Chain Manager, and Floor Uitterhoeve, Manager Sustainability, at McDonald’s Netherlands told the audience that McDonald’s - the biggest buyer of beef worldwide – expects sustainable protein programmes from their meat suppliers and is eager to stay informed about best feeding practices and the benefits of feed additives.

For instance, 65% of soy in the feed of broiler chickens for McDonald’s European markets is certified by RTRS or ProTerra.

However, Dekkers admitted that McDonald’s is lagging behind in terms of some sectoral changes and innovations such as non-meat hamburgers, or algae.

“It is important to focus on joint innovation and implementation” added Uitterhoeve. "We need to stimulate and endorse innovation from the ground up.”
Elsewhere at Feed Additives

The future came a little closer as Glen Illing, CEO of Roslin Technologies discussed the potential of genetic engineering of farm animals. “We have a perfect technology storm” he said, highlighting whole genome sequencing which previously cost millions of dollars now only cost $800.

Another science fiction became an affordable reality as Professor Mark Post, Professor of Vascular Physiology, Maastricht University, and founder of Mosa Meat announced his lab grown burgers can be produced for less than $12 per patty. However, cultured meat provides an opportunity to our industry; Prof. Post pointed out that animal-derived products still need optimization at the nutrient level. “Feed additives will be necessary” he said. “We are really keen on sourcing those components at a much larger scale.”

In his pricing update, Feedinfo News Service Lead Analyst Martijn de Cocq said that in general there is still an oversupply situation for all main amino acids and that with a few exceptions, the prices of all amino acids are low. He also announced Feedinfo would begin tracking the price of L-Valine, which is becoming a more commoditized amino acid. On the vitamin market, after a volatile year we can expect a calmer period with a “wait and see” attitude going on. Besides, most of the vitamins are in an overcapacity situation. “Prices are still at a high level in some cases, still finding direction,” he commented, adding that fundamentals sometimes have no impact at all.

Christopher Rieker, Vice President, BASF Animal Nutrition provided an open account of the citral plant incident, summing up the company’s learnings and action plans following the incident into five points: Compliance, A one-voice policy, Structure, Open communication and Keeping the timeline. “We established and communicated the process towards the lifting of the force majeure very early to provide transparency” he said. “We took all customers into consideration and communicated transparently while evaluating how much material the company had.”

Addressing feed formulation technology, Format Solutions Michael Pastoor said: “The sector needs to move away from ‘data silos’ to instead using connected data systems where data flows freely.”

Prices for feed phosphates have risen consistently in 2018, observed Janos Gal, Senior Analyst at Feedinfo News Service. Providing background, Gal pointed out that the price of phosphoric acid in the past 12 months has risen due to higher sulphur and fertilizer prices. Weaker local currencies in some regions also impacted the market, increasing the price of imported product in local currency terms.

In the regulation sessions, Jaume Galobart, Senior Scientific Officer from EFSA’s feed unit updated the audience on the recent work of EFSA regarding feed additives, including a transformative project to rewrite the guidance documents for the assessment of feed additives. “One of the most important was that there were 20 different guidance documents and it was cumbersome for applicants, which we recognized,” he recounts. These 20 documents have now been reduced to around eight.

Chinese feed production rose 0.3% in H1, according to Chuang Ma, Partner at Boyar. Breaking H1 figures down, he said aqua feed output was up 4.2%, pig feed grew 1.5%. However, ruminant feed dropped 0.1% and broiler and layer feed production fell 1.7% and 2.1% respectively. Chuang Ma expects an overall 2% increase for 2018. He warned that Chinese pig feed output will very likely decrease in H2, mainly due to the trade dispute with the US and African swine fever outbreaks. “Chinese soymeal consumption could drop 15-20% due to trade friction with the US. And there could be a 15-20% reduction in imports of pork from US” he said. “Hence feed costs will rise in China.”

Rabobank’s Dirk Jan Kennes touched on many of the key themes of the conference during his presentation. According to Kennes the big topics are currently African Swine Fever (ASF) in China, while Trump is also a big talking point. He felt the feed industry will be able to feed a growing global population but will need to change the way it tries to feed them. “We need innovation, improved farming and an optimal mix of local, regional and international farming structures to meet these challenges.”
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