

25th International Alltech Symposium focuses on sustainability

Alltech recently held its 25th International Animal Health and Nutrition Symposium in Lexington, Kentucky, USA and International Poultry Production was in attendance. Among the presentations given, we felt that the ones covered in this article are of particular interest to our readers. Other presentations of relevance to breeders will be covered in International Hatchery Practice.

Goals and values

In the general session, Declan Coyle from Ireland looked at building high performance teams. In this he stressed the importance in difficult times of having inspired leaders who had vision – people who ‘saw it and were it’.

These people must have high visions and be focused on them. He highlighted the importance of self-image, goals and values and, interestingly, highlighted how children aged four years old are 96% positive in their self-images, yet by the time they have reached 14 years old they have become 98% negative!

By 12 years of age the average child has received 100,000 NBRs (negative belittling remarks).

Another interesting study has shown that the 3% of Yale students who had clearly focused written

Country	Consumption (million tons)	Per capita (kg)
China	18.6	13.9
USA	16.2	52.6
EU	11.2	23.7
Russia		23.0
Brazil	7.0	37.0

Table 2. World poultry meat consumption statistics.

career goals went on to be worth more than the remaining 97% of their college contemporaries.

Declan highlighted the importance for managers to ‘get things going’ and when staff have achieved things to celebrate their successes with them. The first three minutes with staff determines the outcome of the next five hours! Senior managers must prioritise and studies have shown that the two key traits in successful senior managers are the ability to prioritise and to positively instil urgency into their teams.

In times of difficulty the greatest danger is that we set goals too low and achieve them! The important thing is to understand the 80:20 rule and to focus on the 20% that brings 80% of the returns!

He compared management to a bus in that you have to get the right people on the bus and get them seated in the right seats and those who should not be on that bus should be removed from it.

The importance of making staff feel important, feel valued, feel appreciated and being told that what they do makes a real difference was stressed on several occasions.

It was intriguing that how management thought staff felt and how staff actually felt on key issues varied so much (see Table 1).

When it came to exit interviews 46% of departing staff felt that they were not appreciated, 61% felt they were unimportant and 88% felt that they had been undervalued.

Long term strategies

Aziz Sacranie, Alltech’s technical director for poultry in Asia, considered ‘Staying in business – long term strategies and short term goals’.

He highlighted the major challenge facing the world’s poultry sector, which is the scale of current and future demand and how it will be satisfied. This is not helped by competition for key inputs, such as maize, from the biofuels sector. This needs to be considered against the projected growth of 40% in the world’s human population by 2050.

Global production rose 4% in 2008 and this was nearly all in Brazil, China and Russia. Although China is the largest consumer of poultry meat (18.6 million tonnes) the fact that her per capita consumption is

only 13.9kg should be an issue of note and concern (see Table 2).

He detailed the main driving forces in the industry (see Table 3) and stressed the importance of production and consumption.

Aziz sees the main challenges to the poultry sector as the recession, the rising costs of ingredients, environmental issues, bird health and pandemic diseases and the unpredictable preferences and demands of consumers.

Consumption will be driven by population size, available income and consumer choice. This choice will be the end result of consumer confidence, marketing, relative price, healthiness, culture and eating habits. Food safety is a key issue and it must be remembered that it starts with feed safety in livestock production.

- 1 Markets and consumption
- 1 Food safety and traceability
- 1 Breeding and genetics
- 1 Management and nutrition
- 1 Environmental impact
- 1 Bird welfare

Table 3. The driving forces.

An important issue is the effective use of ingredients. In part this is dependent on bird performance, which has improved from 1.9 to >3.0kg from 1990 to 2010 in terms of body weight and from 14 to 23% from 1987 to 2009 in terms of breast yield.

Over the period 1987 to 2009 FCR improved from 2.15 to 1.71 and today some producers are bettering these FCR and liveweight figures! Combining this data it is interesting to see that today it takes 600 tonnes of feed to produce 80

Table 1. Misperceptions by managers.

Managers’ perceived ranking	Parameter	Staff’s ranking
8	Being appreciated	1
10	Feeling ‘in’	2
9	Understanding	3
1	Wages	5



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tonnes of poultry meat, whereas in 1976 a comparable figure was 1,600 tonnes of feed!

Improvements will come from managing and feeding the bird to its potential, improvements in incubation that produce better chicks and improvements in processing technology.

In addition, nutrigenomics will become increasingly important and it will not be long before we are feeding the genome and using specific additives to tweak genes to produce more meat.

This presentation concluded with interesting data from Australia that highlights the strong position of poultry when it comes to the efficient utilisation of feed ingredients, water and land mass (see Figs. 1 and 2).

Poor grain syndrome

Professor Elizabeth Santin from the Federal University of Paraná in Brazil reviewed the poor grain syndrome of poultry. This is a very old problem but our understanding of it is improving and a key facet of its aetiology is mycotoxins.

The condition is not a mycotoxicosis because this involves infection of the bird by the actual fungus, which does not occur in this instance.

To date, over 300 mycotoxins are known and some of these induce liver, kidney or gizzard lesions and some induce haemorrhaging.

This syndrome is manifested as poor health and performance due to poor quality feed ingredients, namely, cereals and fats.

Damage to cereal grains by moulds and insects results in nutritional losses, physical losses, the production of mycotoxins and these combine to produce the adverse effect on bird health and performance.

In Brazilian surveys a relationship between poor, broken grains and liver, air sac and intestinal lesions at processing was seen. These lesions appear approximately a couple of months (the life cycle of a broiler crop) after the detection of the substandard grains.

Much of the control of this problem centres on controlling the quality of feed ingredients and using anti-mycotoxin products.

Elizabeth went on to highlight some issues associated with fumonisins in poultry.

These also cause liver pathology, but this is not as striking as the pathology caused by aflatoxins.

She also highlighted that mycotoxins can damage the pancreas and reduce the production of digestive enzymes with adverse effects on bird performance and that mycotoxins can pass through the egg.

With the poor grain syndrome control is dependent on detecting the substandard grains and initiating corrective actions at this stage because once the lesions are visible it is too late for corrective action.

Salmonella reduction

Colin Moran from Alltech in Ireland then looked at the merits of Bio-Mos in salmonella reduction.

He emphasised the importance of a multi-faceted strategy for salmonella

	Before treatment	Bio-Mos treatment
FCR	1.92	1.85
Mortality (%)	6.6	4.8
EPEF	248	283

Table 4. The impact of Bio-Mos on broiler performance.

nella control in poultry in which nutritional management has a valuable role.

The adhesion of salmonella strains to the digestive tract wall is facilitated by lectins that bind to complementary carbohydrate receptors on the gut wall. Bio-Mos can control salmonella by competing for these gut wall receptors.

In an interesting field study from Hungary Colin showed how a control programme based on 2kg Bio-Mos per tonne of starter feed followed by 1.0 and 0.5kg respectively in the grower and finisher diets reduced a prevalence of 80% salmonella incidence before treatment to just 10%. Moreover, the birds on the treatment performed better (see Table 4).

Trace mineral metabolism

Sheila Scheideler from the University of Nebraska, USA then looked at trace mineral metabolism and cited some interesting data relating to the use of Bioplex.

This showed that its use increased egg shell weight and strength, as well as reducing the number of cracks. However, what was really interesting was that in the layers receiving Bioplex the activity of carbonic anhydrase, a key enzyme involved in

shell production, was increased by some 10%.

She also highlighted the importance of Sel-Plex in improving vitelline membrane strength.

Role of enzymes

Finally, Professor Simon Shane from North Carolina State University looked at the role of enzymes in promoting sustainability.

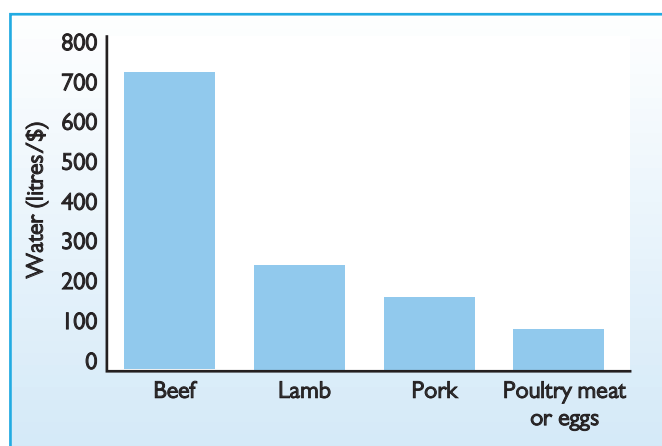
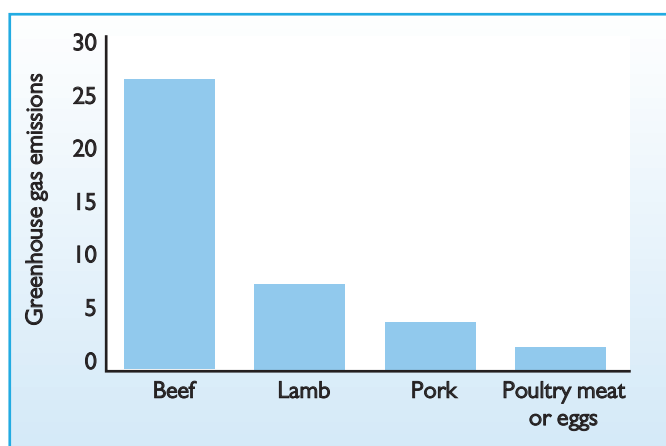
He shared some interesting figures with the audience. Did you know that if enzymes improved feed utilisation by 6% that could save 29 million tonnes of feed in 2009 and that by 2115 that figure would be 34 million tonnes?

If you look at the cost of feed, did you know that a 5% improvement would save \$US1.1 billion in the monogastrics' feed bill with \$202 million coming from the egg sector, \$632 million coming from the broiler sector and \$115 million coming from turkeys?

Sustainability of land is important. If land can yield 4.12 tonnes per acre of maize or 1.0 tonnes of soyabean then the land saved by using enzymes in all feeds equates to some 1.339 million acres!

This year's Alltech Symposium certainly gave the attendees some interesting information to digest! ■

Figs. 1 and 2. Environmental impact of meat production in terms of greenhouse gas emissions (left) and of water usage (right) (CSIRO Technical Report, Balancing Act, Foran et al, 2005).



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