World Nutrition Forum's Asian debut focuses on poultry

Biomin recently held their World Nutrition Forum in Singapore and some 800 delegates from 75 countries attended. This was the first time the event was held outside Austria and, with the right balance of social and scientific sessions, everyone who attended, including International Poultry Production, hailed the meeting as a great success. The theme of the Forum was NutriEconomics – Balancing Global Nutrition and Productivity: People, Performance, Profit and Planet and here we highlight the key messages to come out of the event.

On the poultry front there were several interesting papers. Velmurugu Ravindran from New Zealand looked at how to achieve the genetic potential of broilers. Over the last three decades body weight at 42 days has increased by 25-50g per year and at 2kg body weight FCR has improved by two to three points annually.

Currently in New Zealand an FCR of less than 1.40 for a 2kg bird at 33 days is being achieved in commercial as hatched broiler flocks and at research station level an FCR of 1.25 is regularly achieved for a 2kg broiler at 30 days of age.

Even so, wastage occurs and broilers pass 25-30% ingested dry matter, 30-50% of nitrogen and 45-55% phosphorus straight through their bodies and into the litter.

Much of this inefficiency results from limitations in the digestion and utilisation of nutrients.

Velmurugu sees merit in greater use of NIR analyses of raw materials so that feeds can be more accurately formulated as well as using ileal digestible amino acid concentrations in feed formulations. He also champions high quality starters and using more rather than less feed formulation changes through the broiler's life.

Feed enzymes are seen as key in improving nutrient utilisation and bird performance as in the future there will be increasing pressure to fully utilise all the components in the diet. Other factors that will assist in this include a greater use of crystalline amino acids, optimisation of gut health and gut integrity and pellet quality. However, although high conditioning temperatures favour pellet quality they also reduce nutrient availability.

Finally, he concluded that if we are to continue to improve FCR we need to explore alternative concepts for feeding through the use of modelling.

Randolph D. Mitchell from Perdue farms in the USA looked at how nutrition and genetics can satisfy growing consumer expectations and demands. He cited a report on global food policy that states that taste, cost and nutrition represent

Continued on page 13

Erich Erber, Biomin's founder and director of the executive board, welcomed delegates to the Forum with an interesting and thought provoking presentation.

Meeting the Chinese Challenge

The opening session of the World Nutrition Forum centred on Doris and John Naisbitt from the Naisbitt China Institute considering how China is evolving to meet tomorrow's challenges.

China's strategy is to combine strategic planning with seeking bottom-up support and raising productivity by leveraging ecological and environmental friendly technologies to work in a holistic approach of economic, social and political change. China has moved from economic progress at all costs to investing in sustainable environmental friendly projects as the means to progress to a higher level.

Using a trial and error approach, despite all shortcomings and mistakes, China has become the most dynamic country in the world.

John and Doris reflected on recent times. In 2000 the West appeared to be set for a bright new century and China was fulfilling its role as the workshop of the world. Some 12 years later things have dramatically changed. America, the flagship of Western values and achievements, is joining the old world in its downwards slide – the average net assets of an American family declined by 40% between 2007 and 2010.

However, we should not write the USA off as its economy is still the largest and three times bigger than China's. However, China is building economic alliances with emerging markets both in and outside Asia. Japan has become China's largest trading partner and these two countries now trade directly and not through the US dollar.

Emerging markets such as Brazil, Indonesia, Chile, Malaysia, India, Turkey, Mexico and others will want to capitalise on these shifts and changes.

China's political system is much more adaptive to economic necessities than the established representatives of the free market and its governing structures are independent of election driven cycles which allows for efficient actions and long term strategic planning. China's urgent problems, with corruption and the environment top of the list, will be addressed by increasing transparency.

Today, some 800,000 local rural leaders are elected in a grass roots democracy and reforms in areas such as property ownership and equalisation of public service will hopefully address China's new social challenge – the widening gap between poor and rich. The driver of social progress is an increasing respect for the rights of the individual, which is a massive change in the Chinese mindset. The more China develops, the more opportunities it will create and the more it will contribute to the world!

Western democracy appears to have lost its way and hunger for power, party politics, self-interests and little engagement to adapt to the changing conditions of a globalised world economy means western politicians are becoming more detached from the people they are meant to represent. Western democracy is deaf to the need to re-invent itself to meet changing needs in the way China has.

With constant improvements in the quality of their living conditions the vast majority of the Chinese see no need for a sudden change to their one party system as long as it delivers what China needs.

An oriental welcome.

Speakers at Biomin's World Nutrition Forum in Singapore.

Continued from page 11

98% of selection criteria in food purchases of people in 26 countries and that food safety is expected as a right and therefore outside the survey.

Even though the production of organic food has risen dramatically in recent years it still only represents 4% of the food sold in the USA.

	Emissions reduction per year (%)	Reduction in emissions over 20 years (%)
Layer hens	1.3	25
Broilers	1.1	23
Pigs	0.8	15
Dairy	0.8	16
Beef	<0.05	<1
Sheep	<0.05	<1

Table 1. The reduction in global warming due to genetic improvements.

Although buyers of organic food say it is safer, more nutritious and better for the environment, the science is not as clear on this topic!

Pelayo Casanovas from Cobb then considered whether poultry breeding can satisfy both the production of affordable poultry meat and EU welfare trends. The world will need 70% more food in 2050 and by the same time 70% of the population will be urbanised.

By 2050 annual cereal production will have risen by almost a billion tonnes to 2.1 billion tonnes and although feed costs for a broiler are typically 50-60% of total costs, for the last eight years this figure has consistently approached 70%.

Some 90% of the growth in crop production will come from higher yields, not more land usage.

Chickens remain one of the most efficient sources of animal protein and this has a positive impact on the production of waste produced and carbon footprint (see Table 1).

Table 2 shows how the Cobb500 has risen to the challenges placed on it, while Table 3 looks at the impact of EU welfare trends on the affordability of poultry meat.

So, to improve bird welfare while improving meat efficiency what does a chicken breeder do?

The answer has three parts:

- Sustainability – work on a multi-trait breeding program that gives a balance between economics, environment and bird welfare.
- Use new technology, especially genomics, to improve accuracy of selection and to select for non-traditional or difficult to measure traits such as disease resistance and field performance.
- Diversify products according to different regional environments and customer needs.

Broiler breeder data (Fig. 1) over the last decade or so shows how both goals can be achieved at breeder level.

Mickael Le Helloco from Novogen shared his views on selecting layer genetics according to field conditions. The growth in world egg production is following the growth of the human population.

Over the last two decades the per capita consumption of eggs has risen from 6kg to 10kg.

In recent years the cost of poultry feed has risen and so good feed efficiency is now more important than ever and geneticists have to take this and all the other demands from the market place such as egg quality, egg numbers and livability.

Pure lines in cages for selection purposes do not always react in the same way as commercial stock or are kept under similar conditions therefore in a genetics program it is important to use a combination of pure line performances and commercial layer performances.

The commercial layers find themselves in many different environments and the introduction into selection of too many environments and/or too many uncontrolled factors could result in ineffective selection.

Nowadays, in addition to BLUP selection, genomics is now available as a tool to speed up some genetic progress and to introduce some environmental factors. ■

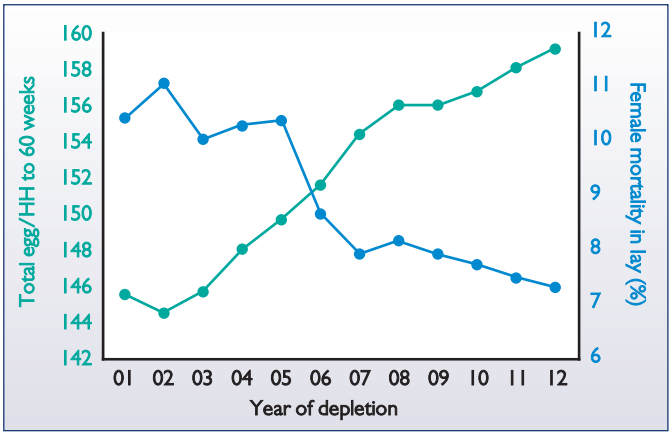

Fig. 1. Broiler breeder data showing that increased production is linked to improved livability.

Table 2. Genetic improvements in the Cobb500 from 1980 to 2020.

Trait	1980	1990	2000	2010	2020	Change 2010-20 (%)
Body weight at 42 days (g)	1135	1588	2042	2495	2948	18.2
FCR		2.54	2.34	2.14	1.94	-9.3
Carcase yield (%)			70.2	75.2	80.2	6.6
Breast meat (%)			21.4	26.4	31.4	18.9
Breeder production (chicks to 65 weeks)		111	125	133	139	4.5

Table 3. The impact of EU welfare trends on the affordability of poultry meat.

Growing program	Age to 2kg (days)	ADG (g/d)	FCR	Carcase yield (%)	Cost increase (%)
Standard	37	59.5	1.68	73.5	-
Standard enriched	37	59.5	1.68	73.5	4.6
Standard free range	42	52.4	1.80	73.5	10.7
Semi slow	44	50.0	1.85	69.5	11.2
Semi slow enriched	44	50.0	1.85	69.5	16.2
Slow enriched	49	45.0	1.95	68.0	22.2
Slow free range	56	39.3	2.05	68.0	25.0
Slow organic	70	31.4	2.65	66.0	67.3