New Look at Disease Prevention

Disease prevention was a theme of one of the sessions at the International Poultry Scientific Forum (IPSF) this year, writes ThePoultrySite senior editor, Jackie Linden – a session that illustrated a number of different approaches to maintaining poultry in good health.

One of the sessions of the Southern Conference on Avian Diseases (SCAD) at the IPSF in Atlanta, US in January – held in conjunction with the International Poultry Expo – included papers from several US universities with the common theme of disease prevention but taking different approaches to its improvement.

COMPARISON OF ILT VACCINE PROGRAMMES

Researchers from the University of Georgia reported

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New Look at Disease Prevention

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Americas Produce 20 Per Cent of the World’s Eggs – P11

While the Americas region still accounts for one in five of the world’s eggs, the rate of increase there has slowed to less than one per cent, according to Terry Evans in his new series examining the trends on egg production across the globe.

Predicting the Environmental Impacts of Chicken Production Systems – P16

Feed accounted for the majority of the overall environmental impact of both broiler and egg production in typical UK systems, according to researchers based at Newcastle University, and less intensive systems were associated with greater overall environmental burden as a result.

Urolithiasis in Male Broiler Breeders – P19

Broiler breeder males fed a commercial breeder diet developed kidney asymmetry and urolithiasis, according to researchers at the University of Arkansas. They attributed these effects to the high calcium level in the diet and suggested this may increase mortality levels in breeder males.

EDITORIAL

03

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In this month’s issue of *ThePoultrySite Digital*, we turn attention to poultry health.

Our first feature takes a look at disease prevention, based on papers presented at one of the sessions at the International Poultry Scientific Forum (IPSF). Among the topics addressed were a comparison of vaccine programmes against infectious laryngotracheitis, methods to improve the response of turkeys to Bordetella vaccination and an investigation of *Mycoplasma gallisepticum* vaccine efficacy. Rounding off the feature are an examination of interactions between the form, function and flora of the gastrointestinal tract in dysbacteriosis and a warning about carcass defects in breeder hens thought to be linked to the incorrect administration of *Salmonella* vaccine.

Continuing on the theme of health and disease, we report on research showing that broiler breeder males fed a commercial breeder diet developed kidney problems. The conditions were attributed to the high calcium level in the diet and may increase mortality.

Our ‘Global Poultry Trends’ series continues with a look at the developments in the egg industry in the Americas, a region where 20 per cent of the world’s eggs are produced. While more than 40 per cent of the region’s eggs are produced in the US, rapid expansion in output is forecast for Argentina, Brazil, Colombia and Peru.

Finally, there is a summary of two published papers from scientists in the UK that have carried out Life Cycle Analysis assessments of the most common broiler and egg production systems as a means of comparing their impacts on the environment, one measure of sustainability. Feed accounts for much of the overall environmental impact and the less intensive systems were associated with higher feed intakes and hence, a greater overall environmental burden.
that the best protection against infectious laryngotracheitis (ILT) in commercial layers challenged at four or nine weeks of age was achieved with a vaccine of tissue culture origin (TCO) at two weeks of age, with or without HVT-LT recombinant vaccine at hatch.

The main objective of this research reported by Victor Palomino and co-authors at the University of Georgia was to establish the onset of immunity and protection against ILT induced by six different vaccination programmes with recombinant and live-modified virus vaccines.

A total of 150 Hy-Line W-36 commercial layers were randomly distributed in seven and eight groups of birds, vaccinated in various ways and challenged at four or nine weeks of age. All the birds were vaccinated with the CVI988 Rispens strain of Marek’s disease virus at day-old.

For the 4th-week challenge study, the following programmes were included: non-vaccinated challenged (Group 1); Pox-LT recombinant at hatch (Group 2); HVT-LT recombinant at hatch (Group 3); TCO vaccine at two weeks of age (Group 4); Pox-LT recombinant at hatch + TCO at two weeks (Group 5); HVT-LT recombinant at hatch + TCO at two weeks (Group 6); and non-vaccinated non-challenged (Group 7).

For the 9th week challenge study, the experimental groups were similar, except that the TCO vaccination was done at four weeks of age and an additional group received a CEO vaccine at four weeks (group 7).

Tracheal swabs were collected and clinical signs were evaluated at five and seven days post-challenge (DPC).

Challenge virus concentration in the trachea was examined by qPCR. Clinical sign scores were compared statistically by Kruskal-Wallis and Dunn tests.

Five days post challenge, there was no statistical difference between groups 1 and 2. Groups 4 and 6 exhibited the highest protection against ILTV in both the four- and nine-week-old studies. In addition, Group 7 also showed the highest protection along with groups 4 and 6 in the nine-week-old challenge.

**IMPROVED RESPONSE TO BORDETELLA VACCINATION IN TURKEYS**

A boost with oral administration of an inactivated antigen in the drinking water improved the response of turkey poult's to spray vaccination against *Bordetella avium* (BA), according to researchers from the University of Arkansas.

The turkey disease, bordetellosis, results from an infection caused by BA, which colonises the epithelium of the trachea of turkeys causing severe respiratory disease or coryza, according to R.H. Harris of the University of Arkansas in Fayetteville.

This study’s objective, they explained, was to evaluate the oral administration of an inactivated BA vaccine in combination with either chitosan or a proprietary modification of chitosan as an adjuvant in turkey
In these experiments, day-of-hatch turkey poults were vaccinated parenterally or orally with chitosan+BA adjuvated bacterin, modified chitosan (MC)+BA adjuvated bacterin, or saline control. On day 14, poults were boosted with either subcutaneous (SQ) BA+chitosan, BA+chitosan in the drinking water (DW) or BA+MC DW.

Immune response was evaluated using an ELISA to detect anti-BA IgG.

The Fayetteville group reported that in experiment 1, day 14 IgG antibody levels for groups BA chitosan SQ prime/DW boost, BA chitosan DW prime/DW boost, and BA+MC SQ prime/DW boost were significantly higher than the controls. IgG levels on day 21 followed a similar trend. However, no significant differences (P<0.05) were found.

In experiment 2, a similar trend was noted on day 21, with BA+MC SQ prime/DW boost having significantly higher IgG levels than the controls.

Currently, to prevent the disease, poults are treated with live, temperature-sensitive vaccines administered by spray at day-of-hatch and again at two weeks of age. While this technique is sometimes effective, this type of product innately has storage and administration difficulties for producers, frequently leading to compromised effectiveness and potential questions of serotype variation, according to Harris and colleagues.

They highlight that the present research was able to achieve meaningful responses following boost with oral administration of the inactivated antigen, leading to a host of opportunities for improved compliance and potential mass-application of inactivated vaccines through the drinking water.

**MYCOPLASMA VACCINE EFFICACY INVESTIGATED**

The results of a study at Mississippi State University demonstrated that vaccine dosage may have direct implications on vaccination efficiency of AviPro® MG F against *Mycoplasma gallisepticum* (MG) for the laying flocks.

Live attenuated vaccines (LAVs) are commonly used in the table egg industry to limit economic losses associated with virulent MG outbreaks, said Roy Jacob from Mississippi State University in the introduction to his presentation.

To determine the effect of dosage of a recently released LAV, (Avipro® MG F) when applied via spray on vaccination efficiencies and in vivo MG populations, 240 mycoplasma-free Hy-Line W-36 pullets were caged individually in a commercial layer facility with four rooms, 60 birds per room, to 19 weeks of age. A randomised control study design was used.

At 11 weeks of age, birds of each room were spray vaccinated at one of four levels: 0× (negative control), 1×, 2× or 4× the manufacturer’s recommended dosage. The reconstituted LAV source titre was 2.8 × 10^5 cfu/1×dose.

At five weeks post-vaccination, in vivo MG LAV populations were estimated via palatine fissure swabs and subsequent quantitative Taqman®-based Real Time
PCR assays. At seven weeks post-vaccination, all groups were challenged with the virulent MG strain Rlow.

Vaccination efficiency was assessed pre-challenge (at six weeks post-vaccination) by measuring seroconversion rates via Serum Plate Agglutination assays (SPA) and post-challenge by measuring the degree of airsacculitis in virulent MG-challenged birds.

SPA results demonstrated a dose-dependent response as 0, 5, 37 and 42 per cent of birds showed seroconversion in the 0x, 1x, 2x and 4x dosage groups, respectively.

The incidence of detectable in vivo MG increased with higher dosages but MG population estimates did not correlate directly with dosage.

Viable in vivo MG populations were detected in all SPA-positive birds.

Following challenge, airsacculitis was observed in 36, 32, 25 and 21 per cent of birds in the 0x, 1x, 2x and 4x groups, respectively, which also showed dose-dependent protection, according to the Mississippi researchers.

MAINTAINING A HEALTHY GI TRACT

Dr Stephen Collett, associate professor at the University of Georgia, presented a different approach to poultry health in a presentation entitled ‘The Avian Enteric Tract: Form, Function and Flora’, in which he described the changes in these three elements of the gastrointestinal (GI) tract that are associated with subclinical disease or dysbacteriosis.

The primary objective of any poultry production system, he explained, is to optimise the economic efficiency of converting poultry feed into human food. Highly successful breeding and selection programmes have provided the platform for annual improvements in biological efficiency as measured by feed conversion. From a biological perspective, efficiency is determined by the anatomical structure of the intestinal tract (form), and the physiological process of digestion and absorption (function). The degree to which the host genes governing intestinal form and function are expressed appears to be altered by the output of the resident microbiota (flora).

The physical nature of both the intestinal lining and its content display detectable changes in the early stages of disease, said Dr Collett. Villus height to crypt depth ratios have for example been used to indicate intestinal integrity. This is possible because the length of an intestinal villus is kept constant by continuous enterocyte replacement. The delicate cells lining the intestinal tract are continuously exposed to potentially damaging luminal content and not surprisingly, they require frequent replacement.

It has been shown that the life span of a typical enterocyte is three to four days, said Dr Collett, and consequently, complete replacement of the intestinal epithelial lining occurs in this period of time by a process of cell division in the crypt area, sequential migration of the enterocyte to the tip of the villus and finally extrusion from the tip into the lumen.

The body’s first homeostatic response to accelerated enterocyte attrition is enhanced cell division in the crypt area and to achieve this, the crypt increases in size.

Dr Collett continued that it stands to reason that a slight decrease in villus height to crypt depth ratio in the absence of any change in villus height is the first indicator that the conditions within the intestinal tract have changed sufficiently to increase the rate of
enterocyte attrition. This level of challenge seldom manifests as a change in nutrient assimilation or clinical disease because intestinal surface area is not affected, but does, however, indicate a shift from normal.

While it is impossible for even an experienced clinician to detect the change in the thickness of the intestinal wall induced by an increase in crypt depth, he explained that there are other changes that give insight into what is happening. Since even minor cell damage induces an inflammatory response, cell debris and inflammatory mediates, including mucus, begin to accumulate in the lumen faster than normal. Apart from causing the villi to stick together and lose optimal alignment – which is visible to the naked eye – the mucus and cellular debris accumulates to the point where orange coloured mucus forms aggregates or strings within the lumen.

As the severity of the intestinal challenge escalates, so too does the rate of enterocyte attrition, according to Dr Collett. Villus height starts to decline when the rate of enterocyte destruction exceeds the maximum capacity for replacement. At this point, the intestinal wall becomes noticeably thinner and the intestine loses muscle tone and tensile strength. The mucosal lining of the intestinal wall appears pale and dull, giving it a parboiled appearance because of the plethora of dead or dying cells on the luminal surface.

The inflammatory exudate makes the shortened villi clump together and their typical zigzag alignment is lost. At this stage, there is sufficient reduction in surface area and enough villus damage to compromise intestinal function, he said.

There is a net efflux of water into the intestinal lumen, causing what is referred to as, watery enteritis. If the irritation persists or worsens, the enteritis becomes more chronic.

There is an influx of inflammatory cells, causing the gut associated lymphoid tissue to appear congested and the luminal content becomes dominated by mucus giving rise to a typical mucoid enteritis.

At this stage, continued Dr Collett, enzymatic digestion and nutrient absorption is sufficiently compromised for bacterial fermentation of undigested nutrient to result in gas accumulation. Initially, the intestinal content becomes foamy but as the ecology of the intestinal lumen deteriorates, the destabilisation of the microbiota manifests as the accumulation of free gas.

Changes in the composition of the intestinal microbiota have been associated with deterioration in intestinal function as measured by feed conversion efficiency, explained Dr Collett. Dysbacteriosis, as it is commonly referred to in the poultry industry, became common place after the moratorium on in-feed antibiotics was introduced in the European Union.

These undefined shifts in the intestinal microbiota are difficult to diagnose, even with advanced molecular techniques and yet they appear to be associated with visible intestinal changes. There are changes in the thickness, appearance, muscle tone and tensile strength of the intestinal wall. Signs of inflammation are evidenced by a parboiled appearance of the mucosal surface, the accumulation of inflammatory cell aggregates, congestion and the development of a watery to mucoid exudate in the intestinal lumen. Gas by-products of bacterial fermentation provide confirmation of ecological disturbance.

Interestingly, the phenotypic expression, or community output, of the intestinal microbiota contributes to bird performance by influencing host gene expression and feed efficiency, according to Dr Collett.

"Dysbacteriosis, as it is commonly referred to in the poultry industry, became common place after the moratorium on in-feed antibiotics was introduced in the European Union"

Dr Stephen Collett
This makes it is easy to see why a detrimental change in the intestinal microbiota structure and composition, regardless of cause, can result in a deterioration in gut health and bird performance.

The intestinal tract and, more specifically, the caeca serve as a stable bioreactor that sustains a complex web of nutrient substrate conversion facilitated by secreted enzymes and resident organisms, he explained. The stability of the intestinal microbiota is consequently governed by the amount and type of substrate. As with any hindgut–fermenter, the chicken caeca are designed to support organisms that aid in digestion of the non-digestible components of the diet but unfortunately, such conditions are very suitable for many of the common enteric inhabitants that are potential pathogens.

An oversupply of nutrient to the hindgut rapidly changes the composition of the microbiota since the resident organisms are able to shift from steady-state to exponential growth phase. Potential pathogens such as *Clostridium perfringens* gain competitive advantage under such circumstances and rapidly dominate the microbial community, thus compromising intestinal health.

Dr Collett concluded by saying that astute observation on the part of the clinician can provide enough information to detect and diagnose subclinical disease in apparently healthy birds if necropsy is performed on a small sample of individuals on a regular basis at very little cost.

**CORRECT VACCINATION TECHNIQUES ADVISED**

At the Hatchery & Breeder Clinic, also held in conjunction with the International Poultry Expo in Atlanta, Terry Bruce of Tip Top Poultry warned his audience about a new issue related to vaccination, which is leading to downgrading of breeder carcasses in the processing plant.

Granulomas were first seen on or in the breast muscle of breeder chickens in the 1990s, he said. These were thought to be related to cholera vaccines but more recently, the defects are being seen more commonly again, now associated with Salmonella vaccine incorrectly administered in the breast muscle.

The lesions, described by the USDA as ‘occult vaccination lesions’, are seen at the processing plant as cheesy areas, which vary in colour.

“They are a quality defect that we don’t want to see,” said Mr Bruce, adding that consumers are likely to react strongly against the lesions.

In fact, they are a natural response to vaccination, he said, but he warned that a 10-bird sample at the plant could lead to the disposition of the whole flock.

Mr Bruce said that the correct vaccination site is under the skin at the back of the neck.

If the industry does not act quickly to prevent these defects, he warned that these lesions will devalue breeder hens, increase egg costs and regulations may be introduced to penalise offending flock owners.

**FURTHER READING**

Find out more information on the diseases mentioned in this article by [clicking here](#).

For references used in this article [click here](#)
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Americas Produce 20 Per Cent of the World's Eggs
Between 2000 and 2012, world egg production will have expanded by a little below two per cent a year from 51.2 million tonnes to almost 65 million tonnes (table 1). As a region, the Americas has exhibited a similar growth rate as output there has climbed from 10.4 million tonnes to an estimated near 13 million tonnes. However, latterly, the annual increase in this region has fallen short of one per cent, primarily because growth in the US, the region’s largest producer accounting for some 43 per cent of total output, is forecast to increase production this year and next by less than one per cent.

In 2010, the most recent year for which production data is available for every country, the Americas accounted for almost 12.7 million tonnes out of the global total of some 63.6 million tonnes (table 2). However, since 2000 the Americas’ share of world production has slipped somewhat, from just above to a little below 20 per cent.

According to FAO data, the number of layers in the region in 2010 amounted to almost 1050 million out of a global total of some 6,500 million.

The region’s capacity to process eggs appears to be a little under 20 per cent of all eggs produced. However, this figure masks a massive difference between the US and Canada, where the egg processors have the potential to utilise the best part of 30 per cent of table egg production and those countries in the south of the region where the processing capacity ranges from around nine per cent to three per
The ranking of the region's countries by output (table 3) reveals that the largest seven accounted for almost 11.5 million tonnes or more than 90 per cent of the total in 2010. In table 4 and figure 1 showing the performance of the leading producers since 2000, we have projected the data for 2011 and 2012. While we have concentrated on the leaders, it is worth pointing out that some of the smaller nations have recorded substantial expansions. Panama, for example, more than doubled output between 2000 and 2010, while Paraguay and the Dominican Republic increased production by 80 per cent or more. In Cuba and Uruguay, the industry expansion exceeded 40 per cent and Chile recorded a 33 per cent rise.

It should be noted that more often than not, the production data in these tables is for all hen eggs including hatching eggs for both the layer and broiler flocks. Globally, it is considered that hatching eggs represent around five per cent of the total though, on an individual country basis, the proportion accounted for by hatching eggs varies greatly depending on the size of the broiler flock in relation to the production of table eggs, and in some instances, the quantity of eggs produced for exporting either as hatching eggs or day-old chicks. The importance of the broiler sector in this calculation is well exemplified by the USA and Brazil where hatching eggs represent a large proportion (12 to 13 per cent) of total hen egg production.

Egg production in the US in 2010 at 7,622 million dozen, showed a one per cent increase on the 2009 figure of 7,546 million dozen. Hatching eggs are estimated to account for some 982.7 million dozen or 13 per cent of this total. Estimates for both 2011 and 2012 point to gains of just 0.4 per cent, though for table eggs, the percentage gains are roughly double this, the totals estimated to rise to 6,603 and 6,645 million dozen, respectively.

Table egg production in the US for 2010 is put at 6,550 million dozen, of which just over 57 per cent will have been sold via retailers, almost 32 per cent to breakers for foodservice, manufacturing, retail and export, some eight per cent to institutional outlets and a little over three per cent exported in shell.

The commercial flock (93 per cent lay white eggs) averages around 280 million, with over half of the birds found in the five largest egg producing states – Iowa (52 million), Ohio (27.5 million) Pennsylvania (24 million), Indiana (22 million) and California (19.5 million).

There are some 64 companies in America with more than one million layers, of which 14 have over five million. Some 80 per cent of the country’s flock is owned by members of an egg co-operative, United Egg producers (UEP). In 2011, UEP and the Humane Society of the United States (HSUS) agreed to work together towards the enactment of comprehensive new Federal legislation for all US layers. The proposed legislation would require that conventional cages, currently used by more than 95 per cent of the industry, be replaced over an ample phase-out period, by the new enriched colony cage systems. This change could cost the egg industry an additional $4 billion over the next decade and a half.

Converting egg numbers to weight depends on what is considered to be the average weight of an egg. For table eggs in the US, this is considered to be 60g. So, taking a slightly lower figure to allow for hatching eggs, by 2012 total egg output in the US will be in the region of 5.5 million tonnes. However, one long-term projection to 2020 does not see this figure rising above 5.7 million tonnes. Indeed, even this may be optimistic depending on the impact of the change from conventional batteries to enriched colony cages has on the industry. This switch in production systems will increase production costs that may not be quickly recouped from the market, applying a brake to the rate.

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Source to 2010: FAO
Table 2. Hen egg production in the Americas (’000 tonnes)

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Source to 2010: FAO
of growth. There is also the possibility of increased imports from Mexico putting pressure on prices which would also act as a disincentive to US expansion.

Another problem facing US producers is how the use of corn (maize) for ethanol will impact on feed costs. In 2011-12, it is estimated that ethanol production will utilise 37 per cent of the crop compared with 35 per cent for animal feed. Nevertheless, some easing is anticipated in grain values and hence feed prices in the year ahead.

Mexico is the second largest producer in the region its industry’s output having expanded by 600,000 tonnes or 33 per cent since 2000, although according to FAO figures, latterly annual growth has been contained to less than one per cent. However, another source points to a more rapid expansion. Whatever, output is likely to be in excess of 2.5 million tonnes in 2012. Some 95 per cent of the birds are brown–eggers and all are housed in conventional cages. The likely ban on this system of production in the US in the foreseeable future has led to the view that some American egg operations may set up units in Mexico specifically for the US market.

Brazil’s egg industry expanded by 29 per cent during the first decade of this century as output reached 1.95 million tonnes in 2010. Output should top two million tonnes in 2011 but here, as in the US, a significant proportion (possibly 14 per cent) will be hatching eggs. All the commercial sector is housed in cages and some three-quarters of production is whiteshelled. The quantity of eggs broken out is estimated to be around five per cent although the processing capacity is considerably higher than this.

Although Columbia’s industry appears to have suffered a setback in 2010 compared with the two previous years, output is still almost 60 per cent above the 2000 level and will soon come close to 600,000 tonnes a year.

Egg production in Argentina grew by around 55 per cent over the years 2000 to 2010 as it climbed from 327,000 tonnes to more than 500,000 tonnes.

The figures for this country provide a good example

<table>
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<th>Americas egg production ranking in 2010 ('000 tonnes)</th>
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<tr>
<td>Brazil</td>
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Source: FAO
Table 4. Leading egg producers in the Americas (million tonnes)

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<th></th>
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Source to 2010: FAO

to highlight the difficulties in assessing egg production by weight. According to the data provided by the Argentinean authorities to the FAO, the number of layers in 2010 totalled 36.1 million. Egg output is put at almost 9,020 million, equivalent to an average of some 250 eggs per bird. However, the tonnage of eggs produced is calculated at just over 505,000 tonnes (table 2) and pointing to an average egg weight of 56g. Now, according to a report on Argentina’s laying industry published by the well respected International Egg Commission (IEC), the number of layers in 2010 totalled 38 million and the average egg weight was 63.5g, yielding an output of 660,563 tonnes, which points to an average yield of some 274 eggs per bird. The 2010 output figure was some 15 per cent up on 2009, reflecting a similar percentage increase in the number of layers. Whichever series is more correct, there can be no doubting that Argentina’s egg industry has experienced dramatic growth in the past decade or so. Only one per cent of production is considered to come from non-cage systems, while the split between brown— and white—shelled eggs is said to be 45:55.

Industry growth in Canada since 2000 has averaged just 1.4 per cent a year, with total hen egg production in 2010 of some 429,000 tonnes comparing with around 400,000 tonnes back in 2005/06. The quantity broken out continues to rise and currently represents about 23 per cent of table egg production.

Peru, the seventh largest producer (table 3) increased output by more than 75 per cent between 2000 and 2010, with an average annual growth approaching six per cent. Some 96 per cent of layers are in cages with a similar proportion producing white—shelled eggs.
Predicting the Environmental Impacts of Chicken Production Systems

Feed accounted for the majority of the overall environmental impact of both broiler and egg production in typical UK systems, according to researchers based at Newcastle University, and less intensive systems were associated with greater overall environmental burden as a result.
Researchers based at Newcastle University have calculated the environmental impacts of different egg and broiler systems in the United Kingdom through life cycle assessment (LCA), publishing two papers recently in the journal, Poultry Science.

Ilkka Leinonen from Newcastle and co-authors there and at Cranfield University and the University of Nottingham explain that the aim of their studies was to apply the LCA method, ‘from cradle to gate’, to quantify the environmental burdens per 1,000kg of expected edible carcass weight for broilers and per 1,000kg of eggs.

For broiler production, they compared the three main production systems in the United Kingdom: 1) standard indoor, 2) free-range and 3) organic and they examined four major egg production systems: 1) cage, 2) barn, 3) free-range and 4) organic. In each case, they aimed to identify the main components of these burdens.

The researchers explained that the LCA method evaluates production systems logically to account for all inputs and outputs that cross a specified system boundary, and it relates these to the useful outputs.

Their analysis was based on an approach that applied a structural model for the respective industry and mechanistic submodels for animal performance, crop production and major nutrient flows. Baseline feeds representative of those used by the UK industry were used. Typical UK figures for performance of the birds and farm energy and material use were applied.

**BROILER STUDY RESULTS**

The researchers found that the length of the production cycle was longer for free-range and organic systems than standard indoor system, and as a result, the feed consumption and manure production per bird were higher in the free-range and organic systems. These differences accounted for much of the variation in environmental burdens between the systems.

Feed production, processing and transport resulted in greater overall environmental impacts than any other components of broiler production. For example, 65 to 81 per cent of the primary energy use and 71 to 72 per cent of the global warming potential of the system were due to these burdens.

Farm gas and oil use had the second highest impact in primary energy use (12 to 25 per cent) followed by farm electricity use. The direct use of gas, oil and electricity were generally lower in free-range and organic systems than in the standard indoor system.

Manure was the main component of acidification potential and also had a relatively high eutrophication potential.

**LAYER STUDY RESULTS**

The number of birds required to produce 1,000kg of eggs was highest in the organic and lowest in the cage
system, the Newcastle-based researchers found. Similarly, the amount of feed consumed per bird was highest in the organic and lowest in the cage system. These general differences in productivity largely affected the differences in the environmental impacts between the systems.

Feed production, processing and transport caused greater impacts than those from any other component of production; that is, 54 to 75 per cent of the primary energy use and 64 to 72 per cent of the global warming potential of the systems.

Electricity (used mainly for ventilation, automatic feeding, and lighting) had the second greatest impact in primary energy use (16 to 38 per cent). Gas and oil (used mainly for heating in pullet rearing and incineration of dead layer birds) used between seven and 14 per cent of the total primary energy.

As with the broilers, manure had the greatest impact on the acidification and eutrophication potentials of the systems because of ammonia emissions that contributed to both of these potentials and nitrate leaching that only affected eutrophication potential.

Leinonen and co-authors concluded that the LCA method allows for comparisons between systems and for the identification of hotspots of environmental impacts that could be subject to mitigation.

COMPARING & CONTRASTING THE BROILER & LAYER STUDIES

For both broiler and egg production, feed had by far the greatest environmental impact. The proportions of primary energy use and global warming potential arising from feeding tended to be higher per unit weight of broiler meat than eggs.

Because of the strong influence on feed on both primary energy use and global warming potential in this study, the less intensive systems, such as organic and free-range, were associated with a larger overall environmental impact per unit of product, be it chicken meat or eggs.

For broiler production, gas and oil use had the second highest impact on total primary energy use, followed by electricity use. These were reversed for egg production. The direct use of all these fuels was lower in free-range and organic broiler systems than in the standard indoor system.

Ammonia emissions from both broiler and layer manure was the main component of acidification and eutrophication potential.

The results of this work indicate that future research into reducing the environmental burden associated with the poultry production should prioritise improving efficiencies in the feed production chain and on reducing ammonia emissions.

FURTHER READING

For references used in this article click here.
Broiler breeder males fed a commercial breeder diet developed kidney asymmetry and urolithiasis, according to researchers at the University of Arkansas. They attributed these effects to the high calcium level in the diet and suggested this may increase mortality levels in breeder males.

Mortality often is much higher in male than in female broiler breeders (36.2 per cent and 11.1 per cent, respectively), making it necessary to introduce additional males during the breeding cycle, according to J.R. Moyle and colleagues at the University of Arkansas, US, in a paper published in *International Journal of Poultry Science*.

The authors explain that, while it is known that males perform better on low-protein diets, they usually are fed the same diet as the hens in order to reduce feed transportation costs and eliminate the chance of the hens receiving the wrong feed. Breeder hen diets are high in calcium (Ca), which may be detrimental to male performance and may cause kidney damage as the males excrete the excess calcium.

Urolithiasis was defined by Wideman as ‘an acquired degenerative kidney disease of pullets and laying hens involving focal mineralisation of the kidneys, progressive obstruction of the ureters by uroliths (kidney stones) and kidney atrophy ‘upstream’ of the site of ureteral obstruction combined with compensatory hypertrophy by the undamaged portions of the kidney’.

In an effort to understand the extent of kidney damage that occurs in male broiler breeders, 136 males that had been on commercial breeder hen diets for 41 or 42 weeks were euthanised and their kidneys evaluated by the Arkansas group. The diet contained 16 per cent protein, 3.25 per cent calcium, 0.4 per cent non-phytate phosphorus and approximately 2,860kcal per kg.

Data collected included body weight, left and right kidney weights and the incidence of macroscopically visible uroliths within the ureters or ureteral branches. The bilateral symmetry of the two kidneys (heavy:light kidney weight ratio) was assessed as an indicator of subclinical kidney damage.

The results revealed that only 55.6 per cent of the males had kidneys that were bilaterally symmetrical (within 10 per cent by weight). Left kidneys were significantly heavier than right kidneys (10.07 versus 9.26g, respectively) and the left kidney was larger in 76.3 per cent of the birds.

Uroliths were found in 7.4 per cent (10/136) of the males.

Moyle and co-authors concluded their results indicate that broiler breeder males fed high levels of calcium develop kidney asymmetry and urolithiasis, which can contribute to their high mortality levels.

You can view the full report by clicking here.
UPDATE ON BIRD FLU

ANALYSIS - At a recent WHO meeting, experts agreed to extend a moratorium on research into modified H5N1 flu strains, whilst expressing their support of work on naturally occurring strains. Senior editor, Jackie Linden, reports that the decision follows recent controversy in the scientific world over the potential risks of publishing information that could be misused by bioterrorists. Since the start of February, thousands of poultry have died or been culled as the result of H5N1 flu in Viet Nam, and outbreaks have also occurred this year in India, Bangladesh, Nepal and Bhutan and in ostriches in South Africa.

Controversy over scientific publication

A small group of global public health and influenza experts at a WHO-convened meeting in Geneva, Switzerland, last week reached consensus on two urgent issues related to the newly created H5N1 influenza viruses: extending the temporary moratorium on research...

Read More...

THE "AG-GAG" LAW - IS IT RIGHT?

US - Over the last two years, increasing amounts of undercover footage have become available from livestock units, often showing poor animal handling and welfare, writes Charlotte Johnston, ThePoultrySite editor.

The footage is usually produced by animal right activists, some of whom aim to promote vegetarianism or veganism.

These films only represents a minority of the industry and they have brought a sharp reaction from farmers, who carry out high-welfare production.

Under pressure to protect their agricultural industries, many states in the US have looked to introduce laws, which would prevent undercover footage being taken on livestock farms and in some states to prevent people taking on jobs under false pretences.

Read More...
**SCIENTISTS IMPROVE HEALTH & WELFARE OF ORGANIC LAYING HENS**

DENMARK - The mortality rate among organic laying hens is twice as high as for layers from enriched cages. In an international research collaboration scientists from Aarhus University will be investigating why this is so with the hope of improving the health and welfare of laying hens and this dissatisfactory statistic.

Despite strenuous efforts more organically reared laying hens are dying prematurely than laying hens reared in cages. In organic flocks, the death rate is around 10 per cent, while in conventional flocks with cages it is only around 5 per cent under Danish conditions.

Scientists from Aarhus University, University of Copenhagen and from seven other European countries will be looking into the causes of the excessively high mortality rate in organic egg production.

Read More...

**TEXAS AND CORNELL UNIVERSITY JOIN FORCES WITH PFIZER**

US - Cornell University College of Veterinary Medicine and Texas A&M College of Veterinary Medicine & Biomedical Sciences have announced a groundbreaking partnership with Pfizer Animal Health. This unique partnership between academia and industry will deliver the Universities’ expertise in medicine and teaching, supported by Pfizer Animal Health’s information delivery and customer service know-how.

Together, the partnership will offer veterinarians convenient web-based educational products utilising the latest advances in educational technologies.

Practicing veterinarians need access to high quality educational opportunities throughout their career since the knowledge base that drives veterinary medicine continues to evolve after professionals have earned their degree.

Read More...

**RECOVERING COSTS FOR HIGHER WELFARE STANDARDS**

EU - At a major Conference held by the EU Commission and Danish Presidency yesterday to launch the new EU Animal Welfare Action Plan, Copa-Cogeca highlighted the need for farmers to be able to recover from the market their additional costs from having high EU animal welfare standards and to make consumers aware of this.

Speaking at the conference, Copa-Cogeca Secretary-General Pekka Pesonen insisted, “We believe opportunities exist for a more market orientated animal welfare. But it is essential for farmers to be able to recover their additional costs from the market. This requires consumers being aware of their responsibilities and being willing to pay for additional welfare measures. EU farmers knowledge and efforts to ensure a high level of animal welfare must be recognized. More objective and effective...

Read More...

**MSD ANIMAL HEALTH UPDATES SAFE USE OF POULTRY VACCINES GUIDE**

GLOBAL - MSD Animal Health has updated its safety guide for the use of inactivated poultry vaccines. The wallet-sized guide has become popular with poultry managers seeking to remind staff of the potential dangers from accidentally self-injecting and the immediate steps which should be taken in the event that this unintentionally occurs.

Many MSD Animal Health poultry vaccines contain an oil-in-water emulsion designed to promote effective immune response following vaccination. Inactivated vaccines are commonly used in animal health and livestock production. The specific MSD Animal Health vaccines are listed in the guide. Key information on what immediate actions to take should accidental self-vaccination occur are explained.

Read More...
GROUNDBREAKING COMMITMENT TO ANIMAL WELFARE

US - Bon Appétit Management Company, which operates more than 400 cafés for corporations, universities, museums and specialty venues in 31 states, announced the rollout of the food service industry’s most comprehensive farm animal welfare policy to date, to applause from The Humane Society of the United States.

"Bon Appétit has turned ‘very good’ into ‘great,’ setting a new high-water mark in the food-service sector," said Wayne Pacelle, president and CEO of The Humane Society of the United States. "Consumers are deeply concerned about animal welfare, and Bon Appétit is responding."

MEXICO SEEKS LINK BETWEEN CATTLE DEATHS & POULTRY LITTER

ANALYSIS - Urea toxicity has been blamed for the deaths of an 600 cattle in Mexico lately but there could be another explanation, writes ThePoultrySite senior editor, Jackie Linden.

Mexico’s Ministry of Agriculture, Livestock and Fisheries (SAGARPA) has identified the cause of death of 600 head of cattle in Actopan, in the central-eastern region of the country, as high levels of urea in the feed, reports ProMED.

The source of the urea was thought to be poorly processed poultry litter, which is an acceptable feed ingredient for ruminants when properly processed, and is reported to have been included in the feed blamed for the deaths.

The ProMED moderator comments that much of the nitrogen in poultry litter is...

FREEDOM FOOD UPTAKE GROWS

UK - The RSPCA’s Freedom Food scheme today reported a 52 per cent increase in animals farmed under its label over the last five years - which means that more than 75 million animals are now benefitting from the RSPCA’s higher welfare standards.

The amount of Freedom Food labeled products in supermarkets has also increased 30 per cent in the last two years.

It is further proof, says Freedom Food, that ethical shoppers remain committed to farm animal welfare despite a tough economy.

This news echoes a prediction at the Oxford Farming Conference by Dr Alan Renwick that: “People buying RSPCA Freedom Food are more likely to stay loyal during the recession than organic buyers.”

PFIZER EXPANDS UK, IRELAND POULTRY TEAM

UK & IRELAND - Tony Grainger has been appointed manager for the Pfizer range of in-feed products for the poultry industry in the UK and Ireland.

He has been with Pfizer for the past seven years, most recently as part of its ruminant team working with veterinary practitioners, farmers and academic institutions in the north east of England.

Pfizer entered the poultry nutrition sector through acquisition of Alpharma as part of its take-over of King Pharmaceuticals and in his new role Mr Grainger will be selling its range of medicated feed additives and probiotics.

He will be part of the Pfizer team serving the UK and Irish industry alongside poultry manager James Porritt and technical manager Stuart Andrews.
DEADLY BIRD PARASITE EVOLVES AT EXCEPTIONALLY FAST RATE

US - A new study of a devastating bird disease that spread from poultry to house finches in the mid-1990s reveals that the bacteria responsible for the disease evolves at an exceptionally fast rate.

What’s more, the fast-evolving microbe has lost a key chunk of its genome since jumping to its new host, scientists were surprised to find. The missing portion contained the genes that made up the microbe’s immune system, researchers report in the February 9th issue of PLoS Genetics.

According to Physorg.com, when thousands of wild house finches started dropping dead from a mysterious eye infection in the Washington, DC, area in the winter of 1994, scientists were puzzled.

The birds had red, swollen, crusty eyes that left them unable to see or forage for food, until they...

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PROTECT YOUR PET PIGS AND BACKYARD CHICKENS

NORTHERN IRELAND, UK - The Department of Agriculture and Rural Development (DARD) has appealed for owners of pet pigs or chickens to ensure the animals are properly registered.

DARD Senior Veterinary Officer Dr Perpetua McNamee, explained: “Pigs and chickens are susceptible to a range of diseases so whether you buy them from websites, petshops, sales, or directly from breeders here or in Britain, you need to be fully aware of the potential risks, and the rules you must follow to keep them safe and healthy.

"If you are not already registered with us, please contact your local DARD office on 0300 200 7840 or by emailing us at: DARD helpline for advice on how to keep them safely and protect them from disease.

“Likewise, if you are considering purchasing micropigs, pet pigs or chickens, please start by...

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NEW WAYS TO GAUGE WELFARE IN FREE-RANGE HENS

AUSTRALIA - Professor Geoff Hinch (University of New England) is researching new approaches to assessing welfare and behaviour of free-range laying hens. This joint University of New England/CSIRO project, supported by the Poultry CRC, harnesses behavioural demand techniques and judgement bias to measure birds’ use of outdoor space and to find out how they ‘feel’.

Determining a reliable, objective measure of welfare, regardless of the housing system, is an ongoing challenge for welfare scientists. This is especially true under free-range conditions, where there is considerable variation in the use of outdoor space between birds and between social groups of birds within the flock. Although provision of outdoor space is perceived to be one of the virtues of free-range systems, it becomes difficult to assess its welfare benefits if it is not used by all birds...

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MORE NEWCASTLE DISEASE OUTBREAKS IN ISRAEL

ISRAEL - The Israeli veterinary authorities have reported further outbreaks of Newcastle disease in Hazafon, Hamerkaz, Hadarom and in Jerusalem.

The World Organisation for Animal Health (OIE) received follow-up report no. 11 on Sunday, 26 February. The affected population consists of broilers and egg layers.

Out of a total of 228600 susceptible birds, approximately 17020 cases were identified. 5608 deaths were recorded and 131400 birds were destroyed.

The source of the outbreak has still not been identified and the epidemiological investigation is ongoing.

Read More...
PECO BATESVILLE COMPLEX WINS COBB700 US BREEDER AWARD

US - The award for the best Cobb700 breeder performance in the US went to Peco Food’s Batesville complex in Arkansas.

Peco’s achieved an average of 158.09 total eggs, and 129.44 chicks, per hen housed with the Cobb 700 from 25 weeks to 65 weeks of age.

Peco’s team at Batesville is lead by Duane Weems, director of live production, and Rusty Langle, breeder/hatchery manager, who said they were appreciative of Cobb’s support in their success at the award presentation dinner for the entire breeder team.

Their complex has been very consistent in success with the Cobb700 said Chance Bryant...

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CHICKEN BUSINESS HATCHES TOP PRIZE

SOUTH AFRICA - What began as a modest breeding programme with 200 birds three years ago has hatched into a successful business producing 80,000 chickens every six weeks.

Enterprising businesswoman Nthakoana Mojakhomo, the owner of Mojakhomo Broilers, which employs 15 permanent and 20 casual staff, has won the provincial Female Entrepreneur of the Year Award.

The Stilfontein-based project supplies chicken to mines around Klerksdorp, fast food outlets and major retail supermarkets like Pick n Pay and Spar.

As part of her prize, Ms Mojakhomo will receive agricultural infrastructure development worth R1.5m, in addition to R125,000.

The announcement was made at a function in Klerksdorp last Friday attended by Premier Thandi Modise.

Read More...
2012 SEMINAR ON POULTRY REPRODUCTION ORGANIZED BY IMV TECHNOLOGIES

FRANCE - Renowned worldwide as the leader in assisted reproduction techniques, IMV Technologies has partnered with the poultry world for over 30 years.

IMV's philosophy is simple: identify the needs of customers and turn them into products. The research and development work, led by the company's teams in conjunction with prominent universities and other expert partners, guarantees customers the best available technology.

Hosted by IMV Technologies, the first seminar on poultry reproduction will take place on 18 and 19 April 2012. International poultry professionals, distributors, genetic companies and hatcheries are expected to attend this event.

The 2012 poultry seminar will feature famous speakers explaining relevant subjects like: "What is Next for the Poultry Market"...

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FLAVOUR KEY TO REPEAT CHRISTMAS BUSINESS

UK - Eating quality is top priority for the FarmGate Hatcheries — one of the largest suppliers of poults to producers of the traditional Christmas turkey — according to managing director Paul Kelly.

In his annual newsletter for customers Mr Kelly says that this policy has led them to stop breeding from two pure lines over the past three years because of relatively poor eating quality.

"It is no coincidence that our breeds have won the quality British turkey awards for eight consecutive years," he says. "We have a very unique programme to select breeding stock that eats superbly. I can confidently say I have tasted more turkeys of different breeds than anyone else on the planet! I can assure you there are big differences in various breeding lines for both bronze and white.

Read More...

INDBRO RESEARCH & BREEDING FARMS CONDUCTS BROILER TRIALS

INDIA - According to a report by Dr T. Kotaiah from Indbro Research and Breeding Farms, when the ranking of two genetic groups change under different environments, it is called Genotype Environment interaction.

The hybrid crosses of the Pure line birds bred under moderate and controlled climates and imported in to India as grand parents and multiplied further are available in India. These birds are accepted world over. The breeding companies also provide technical services. They advise the best feed formula and controlled climate under which excellent results are achieved.

India has pure line breeding programs and they are successful in developing hybrid birds that suit their climate and the market...

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AGROFARM WELCOMES MORE VISITORS AND EXHIBITORS

RUSSIA - From 7 through to 9 February the All-Russian Exhibition Centre in Moscow hosted the International Exhibition for Animal Husbandry and Breeding.

278 companies from 24 countries presented an extensive range of innovative technologies and procedures for animal keeping and feeding. Animal health issues and modern genetics for beef, pig, poultry, goat and sheep-keeping also featured strongly.

The number of exhibitors was up by 20 per cent over last year’s event. And at 12,270 m2, the exhibition floor space was 20 per cent larger this time round. AgroFarm has also become even more international, with a total of 45 per cent of exhibitors coming from outside Russia.

The foreign country with the largest number of exhibitors – 53 companies in all...

US COMPANIES APPROVED TO EXPORT DAY-OLD CHICKS TO THAILAND

THAILAND - On 20 January 2012, the Department of Livestock Development (DLD), after conducting on-site audits in December 2010, provided APHIS Bangkok with the list of approved US hatcheries for the exportation of day-old chicks.

These hatcheries belong to four companies: Cobb Vantress, Hubbard Breeders, Aviagen, and Hy-Line International Production Center. The approved list will expire on 21 January 2014.

However, the official Notification of the approved hatcheries and farms list and the new import protocol for hatching eggs from the US to Thailand are pending.

AVIAGEN SETS UP CLUB TO CELEBRATE OUTSTANDING BROILER PERFORMANCE

EU - In order to recognise farmers who achieve exceptional broiler performance, Aviagen has recently established the Ross 400 Club.

Any UK broiler farmer who reaches a European Production Efficiency Factor (EPEF) of 400 or more with their Ross flock is eligible for membership of the Club.

Farm manager James Dethick and broiler grower David Speller receiving their Ross 400 Club award.

Ian Dowsland, Technical Service Manager, said: “We have been really encouraged by the response we have had since launching this initiative. Since 2009 11 flocks have recorded an EPEF of 400 or higher...
Opening Offer!

For each item purchased, you will receive an entry into our prize draw for an iPad 2.

Offer ends - March 31st, 2012. The winner will be contacted via email.
RESEARCHERS FIND SE PERSISTS ON LAYER FARMS

BELGIUM - Researchers have found that Salmonella Enteritidis (SE) remains in the environment of persistently SE-contaminated layer farms, even after cleaning and disinfection, despite obligatory vaccination. The scientists identified the egg-collecting area as a critical point of contamination on most farms.

The aim of a study reported by I. Dewaele of the Institute for Agricultural and Fisheries Research (ILVO) in Melle and co-authors there and at other research institutes across Belgium was to examine the Salmonella enterica serovar Enteritidis (SE) environmental contamination on persistently positive layer farms in Belgium during successive laying cycles.

Read More...

SUSTAINABLE DISINFECTION A BREAKTHROUGH FOR HATCHERIES

NETHERLANDS - Following news of Pas Reform’s agreement to supply Watter Nontox sustainable disinfection to hatcheries worldwide, Dutch hatchery Probroed & Sloot has put Nontox to the test, with compelling results.

Extensive trials were carried out at the independent hatchery’s Meppel facility, to compare results using Watter Nontox technologies, which use water, salt and electricity to produce a powerful, non-toxic disinfectant, with traditional, toxic chemicals such as formalin.

"We carried out the tests with several batches of 400,000 hatching eggs," explains Probroed & Sloot’s hatchery manager at the Meppel facility, Mr Gert Zoet, "and found that Nontox disinfection performed equally or better than formalin in reducing the microbiological growth of aerobic and enterobacteria.

The results, which fully support the findings of independent scientific trials carried out by Netherlands Organisation for Applied Scientific Research (TNO).

Read More...
ICA PENALISES FARMS FOR NON-COMPLIANCE OF BIOSECURITY

COLOMBIA - The Colombian Agricultural Institute will initiate a process of execution against 50 poultry farms in Huila that are not compliant with biosecurity standards.

A total of 50 poultry farms located in Huila have been fined by the Colombian Agricultural Institute (ICA). This is because they failed to submit their compliance plans for gradual adoption of biosecurity standards which should be implemented in all commercial poultry flocks operating in the country, according to La Nacion.

These measures are intended to prevent entry or spread of pathogens causing diseases such as avian influenza, Newcastle disease, salmonellosis, among others, to poultry farms...

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STEEPING UP PRESSURE FOR PRACTICE IN RURAL RAT CONTROL

UK - The Campaign for Responsible Rodenticide Use will be focussing on farmers and gamekeepers during 2012, to help them improve rat control efficacy and eliminate poor practice.

The campaign's programme will promote best practice when farmers and gamekeepers use rodenticides themselves, and increase access to Wildlife Aware accredited technicians for those who employ professional pest controllers. CRRU also warns that rodenticide misuse will increase the likelihood that second generation anticoaguants will be banned from some sectors of the market.

"The time has come for some plain speaking," says CRRU chairman Dr Alan Buckle. "When you meet farmers individually and tell them that up to 90 per cent of kestrels and owls on their farms are probably carrying residues of rodenticides as a direct result of their own or a neighbour's poor practice, they are genuinely shocked.

Read More...

BAYER TO ACQUIRE ANIMAL HEALTH BUSINESS

US - Bayer HealthCare LLC, Animal Health Division announced yesterday they have signed an agreement to acquire the Animal Health business of KMG Chemicals, Inc.

This move will further diversify Bayer's existing insecticides portfolio in the US, allowing the company to offer a broader range of actives and forms in addition to its current product portfolio that includes cattle ear tags, pour-ons, dusts, and farm hygiene premise sprays.

"Bayer is committed to the animal health industry and we are excited about providing these established brands to our customers," said Ian Spinks, President and General Manager for Bayer Animal Health North America...

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WECH LEADING THE WAY IN GM-FREE POULTRY

AUSTRIA - Austrian poultry company Wech is leading the way in the country's food industry by altering their animal feed. The everyday chicken and turkey feed will no longer contain any genetically modified (GM) products, further improving, they hope, the quality of their product.

According to Austrian Times, as a result of cooperation between the producers and suppliers, Wech is now able to implement the changes and since the beginning of the year have been the first company in Austria to feed their animals on completely GM free products.

Genetically modified crops are fed to farm animals throughout Europe and the rest of the world. Genetic engineering normally takes place to increase yield and strength of crops but raises both ethical, environmental and health concerns.

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MAXIMISE FLEXIBILITY & PROFIT WITH ENZYME COMBINATIONS

GLOBAL - High energy prices and the volatility of grain, fat, and oilseed meal markets have placed pressure on nutritionists to apply dietary strategies that reduce the impact of increasing raw material prices on the cost/kg of broiler produced.

One such way is to increase the use of enzymes in the feed and ensure that the full value is captured from the enzyme inclusion.

New Axtra XB (xylanase/beta-glucanase) and Phyzyme XP (phytase) are two enzyme products which, when used in combination, reduce variability in the nutritional value of key raw materials by minimising the effects of the anti-nutrients they contain.

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THE DIFFERENCE IS CLEAR

Wanting to capture more value from your diets?

**Dose for profit with Phyzyme XP phytase**

Phytate in raw materials is a known anti-nutrient reducing the absorption of amino acids, phosphorus, calcium and other minerals.

New research shows** that Phyzyme XP is most effective at releasing nutrients trapped by phytate in the digestive tract - increasing the nutritive value of feed and increasing your profit.

E-mail phyzymexp@danisco.com for your copy of our research bulletin and to find out how you can dose for profit with Phycheck.

**Turbid solution cleared faster with the addition of Phyzyme XP, compared to other phytases, indicating the release of essential nutrients - Analytical Biochemistry 410 (2011) 177 - 184.**

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BW NUTRITION GMBH BUILDS GREATER ASIA PACIFIC PRESENCE

SOUTH EAST ASIA, AUSTRALIA & NEW ZEALAND - EW Nutrition GmbH managing director Mr Jan Wesjohann has announced that Robert "Bob" Nichol has joined EW Nutrition GmbH as Regional Director for South East Asia, Australia and New Zealand.

Mr Nichol is a welcome addition to the company's expanding team. Bob will continue to be based in Singapore and from there is tasked to develop and expand on existing client base and distribution channels in the region. In addition EW Nutrition GmbH will support the primary markets with direct business structures, with a dedicated technical sales team in South East Asia.

Read More...

BIOMIN SECURES US PATENT FOR INNOVATIVE SYNBIOTIC

US - Biomin has been granted patent protection in the US for its multi-species synbiotic PoultryStar. The approval, patent number US 8101170, brings the total number of patents granted to Biomin to over 100.

By combining carefully selected, well defined live strains of the genus Enterococcus, Pediococcus, Lactobacillus and Bifidobacterium with prebiotic fructooligosaccharides, the product promotes beneficial gut microflora in day-old chicks and birds of all ages, making them more resistant to pathogens.

PoultryStar® is the result of multinational research and industrial partnership, cofounded by the EU. Its efficacy has been confirmed in numerous feeding trials worldwide.

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EU MISSES OUT ON GM LIVESTOCK FEED OPPORTUNITY

ANALYSIS - Are European views on genetically modified (GM) crops putting EU farmers at a competitive disadvantage, asks editor, Charlotte Johnston.

With unpredictable, extreme weather conditions and competition on global markets, it is likely that farmers will continue to struggle to source feed for livestock production at a competitive price.

In this context, there are some sections of the industry that believe the introduction of GM crops could significantly help.

With the EU dependent on 80 per cent of vegetable proteins imported, it was recently agreed that new EU rules will allow a low-level presence of genetically modified organisms (GMOs) in feed to facilitate imports into the EU.

Read More...

AB VISTA TO SPONSOR POULTRY CONGRESS IN PANAMA

PANAMA - AB Vista has announced its sponsorship of the 22nd Central American and Caribbean Poultry Congress.

Event: Central American and Caribbean Poultry Congress
Date: 23-25 May 2012
Venue: ATLAPA Convention Centre, Panama City, Panama

As well as lending its name to the event, AB Vista will be sharing its expertise in the field of poultry nutrition. With a PhD in this field, the company's Research Director, Mike Bedford, has accepted an invitation to make a keynote speech at the congress.

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Phytate is compromising your feed performance
Phytate anti-nutrient effects could be costing you $6 per tonne in lost performance.

Quantum® Blue is the proven solution
Optimised for maximum phytate destruction, Quantum® Blue unlocks more value for your business than any other phytase.

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NEW BROILER HOUSE ATTRACTS VISITORS

GERMANY - With a successful open day Tobias Winnige recently inaugurated his ultra-modern poultry house project for poultry growing in Letschin (Brandenburg).

The six new buildings, all of which were completely equipped by Big Dutchman, offer space to a total of 324,000 broilers. One of the houses was open to visitors, who turned up in large numbers. About 400 visitors seized the opportunity to take a closer look at the poultry house and its equipment fit for 54,000 broilers.

Optimum feed supply in poultry growing

The six new buildings with which Tobias Winnige wants to secure the future of his business for coming generations are about 100 m long and 24 m wide each...

KEY FACTORS FOR POULTRY HOUSE VENTILATION

A useful overview on the principles of ventilation, ventilation systems and general requirements for effective installation by Brian Fairchild (Extension Poultry Scientist), Larry Vest (former Extension Poultry Scientist) and Bobby L. Tyson (former Extension Engineer) of the University of Georgia in UGA Cooperative Extension Bulletin 893 from the Cooperative Extension Service.

Ventilation in a poultry house supplies fresh air that is essential to sustain life. It also helps reduce the extremes of temperature, humidity and air contamination to tolerable limits for confined chickens.

Improved ventilation systems have also made possible the high density populations of livestock and poultry in confinement...
Housing & Equipment

APPROPRIATE GROUND COVER FOR FREE-RANGE BIRDS

US - Poultry will forage and utilize most ground covers if they are kept at a young stage.

If the ground cover is left to grow out, the plants will become fibrous and difficult for the birds to obtain nutrients from and digest completely.

The ground cover should be kept under about four inches tall by cutting, mowing, or grazing by larger animals in order to be best utilized by poultry. Any ground covers and green manures that grow well in your area would be suitable if managed this way.

Common ground covers that are suitable for the summer growing season include legumes (such as cowpeas and clover), millet, buckwheat, and sorghum.

Ground covers that are suitable for the winter season include hairy vetch, rye, oats, and wheat...

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SELF-ASSESSMENT AIR QUALITY AWARENESS TOOL

US - Livestock producers can now make sure they are doing their best to minimize air emissions with a new self-assessment tool developed by a team of researchers and Extension specialists from across the US.

A three-year effort, led by Dr Wendy Powers-Schilling at Michigan State University, has resulted in the National Air Quality Site Assessment Tool. Funding was provided through a US Department of Agriculture-Natural Resources Conservation Service grant.

The NAQSAT, as the tool is called, was developed for use by livestock producers and their consultants to look at various management decisions and determine how those ultimately impact the air quality emissions from a particular site, said Dr Brent Auvermann, a Texas AgriLife Extension Service agricultural engineer in Amarillo and member of the team.

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PERICOLI INTRODUCES NEW PERICOOL 1545/7 PAD

GLOBAL - Since 2002 Pericoli have been producing their superior line of PERIcool pads with great success due to unique Alpine location combined with their propriety production methods and materials accompanied by unflinching quality management.

The recently introduced PERIcool 1545/7 model has been designed and tested with the explicit goal of providing the producer (Poultry) with a pad of the highest level of water distribution and retention while permitting the highest level of cooling with the minimal static pressure drop through the pads. The inherent structural strength of this pad reduces the typical bowing and keeps the pads in place creating better airflow and distribution.

The key factor in the success of this pad is the angle of the water distribution at 450 with only a 150 air flow angle through the pad assisted by the design of the flute/corrugations and propriety blend of...

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Poultry Industry News

UK IS FREE OF BARREN BATTERY CAGES

UK - Compassion in World Farming has welcomed the fact that the UK is finally free of barren battery cages for laying hens after Defra confirmed the country is fully compliant with the EU ban, which came into force on 1 January.

The UK was among the 14 EU member states not to comply with the barren battery cage ban as 2012 dawned.

But the country is now rid of the cages, 13 years after the decision was taken to ban them throughout the EU from the 1 January this year.

Senior Campaigns Manager, Emma Slawinski, said: “We were horrified to learn that there were still battery cages in this country in January, as the industry and government had been confidently saying the UK would be in line with the new law....

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FARMERS LOOK TO EMBRACE CLEAN ENERGY FUTURE

AUSTRALIA - Australia’s agriculture sector is embracing a clean energy future with more than 500 applications received from universities, land managers, industry and government agencies for Gillard Government funding to test and develop new ways for farmers to reduce carbon emissions.

In a Senate Estimates hearing today the Department of Agriculture, Fisheries and Forestry confirmed the government had received at least 240 applications for the first round of the A$99 million Action on the Ground program under the Carbon Farming Futures Fund.

Minister for Agriculture, Fisheries and Forestry, Senator Joe Ludwig, said a further 235 applications had been received for the first round $201 million.

Read More...

OVER-REGULATION THREATENS DOMESTIC LIVESTOCK PRODUCTION

US - Animal housing, environmental, drug, trading and labour regulations all threaten to move US livestock production offshore, according to a new report.

The United States is a leading global producer and exporter of animal products. In 2010, this production led to $283 billion in economic output and 1.8 million jobs. But the farmers, ranchers, and the innumerable companies involved in manufacturing and delivering the meat, egg, and dairy products that make up a key part of the American diet operate in a regulated world. And they are threatened by additional potential regulatory measures that would further constrain or control the manner in which livestock and poultry products are produced.

According to the report, prepared for the United Soybean Board...

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ATTRACTION OF RENEWABLE OPTIONS FOR FARMING COMMUNITY

ANALYSIS - The major drivers for the farming community to adopt a variety of renewable fuels will be the high and rising oil process and the problems of food security, writes ThePoultrySite Editor in Chief Chris Harris.

At present world oil process are standing at around $120 a barrel but in the recent past they have risen to nearly $150 a barrel.

However, while consumers and farming communities alike are facing increasing fuel price pressure, they are also being confronted with concerns over climate change and rising greenhouse gas emissions.

And farming communities are also facing up to changing governments and changing policies demanding new carbon emission initiatives, greater food output and greater sustainability in production...

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The Appleby Chicken House

The Appleby free range poultry house is capable of housing up to 50 layers dependant on breed. It is built to the highest standards of quality and strength and is ideal for free range egg production.

Key Features

Suitable for up to 50 hens

Fixed as well as adjustable ventilation

Eight nest boxes are weather proof and are fitted externally for easy collection

Perches are hinged and fold away to allow for easy cleaning

Free Egg Quality Handbook

Free Delivery

Delivery to the UK Only

Win an iPad 2

Opening Offer!

For each item purchased, you will receive an entry into our prize draw for an iPad 2.

Offer ends - March 31st, 2012. The winner will be contacted via snail mail.
ISA CHOOSES SMARTPRO FOR NEW (GRAND) PARENTSTOCK HATCHERY

NETHERLANDS - Institut de Sélection Animale (ISA) has confirmed that Pas Reform will equip its brand new (Grand) Parent Stock hatchery in the Netherlands with the latest generation SmartPro incubation technologies, to produce Grandparent (GPS) and Parentstock (PS) for the egg industry worldwide.

ISA signed an Agreement with Pas Reform and other partners on 12 January, at its headquarters in Boxmeer, the Netherlands. The state of the art new hatchery will be constructed on the site of ISA’s current GPS and PS hatcheries, to include 50 SmartSet Pro setters and 18 SmartHatchPro hatchers.

With a capacity of c.5 million Parent Stock per year, the new hatchery not only reflects the growth that ISA has experienced over the last couple of years, but also a commitment to serving the global egg industry in the most sustainable manner possible...

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PETERSIME FOCUSES ON NORTH AFRICA

ALGERIA, MOROCCO & TUNISIA - North Africa represents an important market for Petersime. We have been able to become the market leader in the French speaking part of this sales area thanks to our distributor Société Cidape.

Algeria, Morocco and Tunisia are key countries for the hatchery market. Population and meat consumption in these countries are on the rise. Moreover, poultry meat enjoys a privileged position, since pork meat is absent, cattle are hard to breed, and mutton is far more expensive than poultry meat or eggs. These countries have a strong turkey industry as well, with consumption increasing significantly during Ramadan...

Read More...
RJ FEEDS ACQUIRES TANZANIA POULTRY FIRM

TANZANIA - Aurangabad-based RJ Feeds Pvt Ltd has gone to Africa for its first acquisition. The company has recently acquired Tanzania-based integrated poultry firm Gold’N Chiks Ltd for an undisclosed amount. The deal involves 100 per cent buyout of the existing promoter’s stake and has been funded through internal accruals and bank financing.

This is also the maiden acquisition for Rs 500 crore RJ Group, which has interests in integrated poultry business, agri-biotechnology, and fertilisers & natural pesticides manufacturing, among others. Khadkeshwar Hatcheries, the flagship company of the group is one of the largest integrated poultry players Maharashtra.

Read More...

CHICKEN INDUSTRY ABOUT TO HATCH

NAMIBIA - Namibia Poultry Industries (NPI) is gearing itself to supply the entire Namibian market by the end of May, the company has commented.

“The mammoth task has started to interview the more than 1 000 qualified applications from Windhoek and Okahandja of which close to 300 will be employed in the abattoir. In total close to 75 people are already permanently employed at NPI,” the company said.

Close to 400 skilled and unskilled are still employed until all construction...

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PRODUCERS TARGET 70 MILLION DAY-OLD CHICKS

ZIMBABWE - The Zimbabwe Poultry Association says it is targeting to produce 72 million day-old chicks this year, up from last 2011’s 52 million, as more people now prefer local chickens as opposed to imports.

AllAfrica.com reports that Zimbabwe has a combined hatching capacity of 76 million day-old chicks per annum. Over the years cheap imported chickens have flooded the market elbowing out local producers who encountered high production costs as the country experienced an economic meltdown.

The reintroduction of surtax on chicken and other goods to promote local industry has, however, revived the local industry as imports decline.

ZPA chairperson Mr Solomon Zawe said the 40 per cent rise in the number of day-old chicks was due to the increase in the number of farmers opting to raise chickens..

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NEW REPORT REVEALS USE OF IRRADIATION IN EU FOODS

EU - A new report published by the European Commission (EC) recently reveals that more than 9,000 tonnes of food were irradiated in the European Union in 2010. The main findings are summarised by senior editor, Jackie Linden.

According to the report, entitled Report from the Commission to the European Parliament and the Council of Food and Food Ingredients treated with ionising radiation for the year 2010, the process was used in 11 member states for a whole range of foods, which included poultry, fish & shellfish, egg products and meat. The quantities treated are very small compared to the total volume of food produced in the EU and there are strict controls on its use.

The report explains that Directive 1999/2/EC of the European Parliament and of the Council of 22 February 1999 requires Member States to forward to the Commission every year...

SADIA TO BE INTEGRATED INTO BRASIL FOODS

BRAZIL - Brasil Foods has announced it will bring its poultry meat subsidiary, Sadia AS, into the parent company by the end of this year.

Brasil Foods S.A. (BRF) has announced that, following the provisions of CVM (Brazilian Securities Commission) Instruction No 358/02 and Paragraph 4 of Article 157 of the Brazilian Corporations Act (Law No. 6.404/76), the Company’s management at the Board Meeting held on 9 February 2012 has decided that the wholly-owned subsidiary Sadia S.A. will be incorporated into its Parent BRF – Brasil Foods S.A. in 2012.

BRF explains that it holds all shares that represent the capital stock of Sadia S.A. The expected date of the merger is 31 December 2012.
'FREE TO ROAM' CHICKEN CLAIMS TO BE TESTED IN COURT

AUSTRALIA - In a month's time the chicken meat industry will find out whether it can keep using the marketing catchphrase "free to roam".

The Australian Competition and Consumer Commission argues the term is misleading and deceptive for shoppers, and wants it banned, according to ABC.

The Chicken Meat Federation and one chicken meat company argue there's any confusion.

The Chicken Meat Federation filed papers in the Federal Court late last year, asking to be dismissed from the "free to roam" lawsuit.

The Federation argued the competition watchdog didn't have any evidence to prosecute its claim.

The ACCC's case centres around the space each chicken has in the shed...

MAPLE LEAF FOODS TO CLOSE POULTRY PLANT

CANADA - Maple Leaf Foods is to consolidate its further processed poultry operations into its Brantford and Mississauga plants in Ontario, where there is available capacity and opportunities for future growth.

"We have an immediate opportunity to increase efficiency and capacity utilization in our value-added poultry business, which this consolidation will achieve," said Michael H. McCain, President and CEO, Maple Leaf Foods.

"Value-added chicken is an important market for us and we plan to grow the business by focusing our operations and investments in our Mississauga and Brantford plants."

LIMA SERVING THE INDUSTRY WITH NEW SEPARATORS IN 2011

FRANCE - After a busy 2010 with IFFA and the sale of the 1000th separator produced by LIMA in Quimper, The 4th agents sales meeting took place in 2011 with the gathering in Quimper of more than 50 distributors from the 5 continents.

Together with the celebration of the 30 Jubilee of the Company founded in 1981.

In 2011, LIMA reached a new sales record with also a record number of separators and deboners set in operation at customers on poultry, pork, beef and fish products.

LIMA has been extending his offer in meat bones separators, deboners and desinewers range with the introduction of a new model as to optimize the coverage of all the whole market segments in terms of raw material input capacity.
2012 Turkey Science and Production Conference
Macclesfield, UK, March 22nd to 23rd

The Turkey Science and Production Conference is a continuation of the highly successful series of 'Technical Turkeys' conferences.

The 6th conference of the new series in 2012 aims to provide an opportunity for members of the European turkey industry, suppliers and ancillary bodies to update on the latest scientific developments and production trends.

41st Annual Midwest Poultry Federation Convention 2012
Saint Paul, Minnesota, US, March 14th to 15th

The Midwest Poultry Federation (MPF) Convention is the largest regional poultry show in the US. In 2011, the convention drew more than 1,900 participants from 36 states as well as Washington DC, four Canadian provinces and several other countries.

For 2012, the organisers say they are excited to announce that they are expanding our Exhibit Hall in order to accommodate additional exhibitors and that they look forward to welcoming participants from all segments of the poultry industry – egg layer, broiler, turkey and organic/specialty poultry production.

INDUSTRY EVENTS

Each month we bring you the most important poultry industry events taking place around the world

For more events please visit http://www.thepoultrysite.com/events
**International Poultry Council Meeting 2012**  
*Paris, France, March 28th to 31st*

Members of the IPC will engage in a discussion of various global poultry issues, and representatives of the World Organisation for Animal Health (OIE), the Food and Agriculture Organization of the UN (FAO), and the Codex Alimentarius Commission will give presentations to the assembly.

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**IEC Venice 2012 Conference**  
*Venice, Italy, March 25th to 27th*

The International Egg Commission invites you and your colleagues to its March conference, taking place in the unique setting of Venice, where you can meet with leading decision makers and experts in the international egg industry.

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**3rd Mediterranean Summit of WPSA**  
*Alexandria, Egypt, March 26th to 29th*

The meeting, organised by the World’s Poultry Science Association, is being held in conjunction with the 6th International Poultry Conference, ‘Poultry production for better human health and a safer environment’.
Looking for a company to fulfil your needs? Here is a comprehensive listing of poultry industry companies sorted into market sectors.

For more businesses please visit
http://www.thepoultrysite.com/directory
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