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September 2016

No More Culls? Male Layer Chicks Might Soon Be Spared Death Sentence

Why is Barn Winning in America's Cage-Free Era?

Is Gas Stunning as Humane as we Think?

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Welcome.Editors Note

ThePoultrySite
Digital

September 2016



Welcome to the September edition of *The Poultry Site Digital*. In this issue we take a look at some of the biggest welfare issues consumers are concerned about, how these concerns are shaping the poultry industry and how welfare might be improved in future.

Alice Mitchell

Editor
The Poultry Site



Our first feature focuses on male layer chicks and new technology that may prevent millions of male chicks being culled every year. A molecular test developed by Dutch company In Ovo allows gender to be identified in nine-day-old eggs, before the embryo can feel sensation. However, other researchers are looking into another solution, by trying to determine how dual-purpose breeds could be used in commercial meat and egg production.

Secondly, Treena Hein looks into the recent moves towards cage-free eggs and the reasons behind the decision to source eggs from barn production systems by many companies in North America.

Gas stunning of poultry at slaughter can have unwanted side effects if not implemented effectively, which can cause unnecessary suffering. In our third article, Glenneis Kriel talks to welfare expert Dr Temple Grandin about how to ensure that the birds are as comfortable as possible during this process.

Our final article discusses slower-growing broilers, and how retailers in some countries are choosing to stock only poultry products from these breeds, to address welfare concerns over health problems in typical commercial breeds.

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No More Culls? Male Layer Chicks Might Soon Be Spared Death Sentence

Male layer chicks form a huge welfare conundrum for the egg industry around the world. *The Poultry Site's* Editor Alice Mitchell explores the new research that may help solve this problem and save millions of chicks per year.

The male chicks produced by layer breeds are not as suitable for meat production as today's specialist broiler breeds, meaning it is not efficient for poultry producers to raise the birds. Instead, they are macerated or gassed soon after hatching.

The total number of male chicks killed could be as high as 3.2 billion male chicks across the world every year, according to In Ovo, a Dutch company aiming to solve the problem.

Whilst rules and regulations in many countries ensure that hatcheries use these methods to cull the chicks humanely, having to cull any chicks at all is an issue for many animal welfare campaigners.

From the egg industry's point of view, such chick destruction means that half of all the birds hatched are worthless, so hatchery space, time and money are all wasted.



What are the alternatives?

Researchers in several different countries are all working on ways to determine the gender of the developing embryo at a much earlier stage, so that male eggs can be removed before getting near hatching. These eggs could then be used for alternative purposes, such as vaccinations or pet food, to avoid waste.

In Ovo co-founder Wouter Bruins started work on the issue in 2011 while studying at the University of Leiden.

Since then, his company has developed a way to accurately identify the gender of the embryo by measuring the concentration of a certain molecule, known as a 'biomarker' for the chick's sex.

"That was actually our major breakthrough of the last year, finding the biomarker," says Mr Bruins. "We spent about €800,000 to get that molecule."

"Male chick culling means that half of all the birds hatched are worthless, so hatchery space, time and money are all wasted."

To perform the gender test, the team at In Ovo take a tiny droplet of fluid from within the allantois – a self-contained reservoir adjacent to the yolk lined with blood vessels – which Mr Bruins described as the "waste bin" of the embryo within the egg. They then study the composition of the sample using mass spectrometry and determine the concentration of the biomarker.

The test is performed on nine-day old eggs, well before a cut-off point Mr Bruins has set at 11-and-a-half days into the embryo's development. For Mr Bruins, it's important to determine the chick's gender at this stage because 11 days is thought to be the point at which the embryo begins to feel sensation.

Having established proof of concept for the technique, In Ovo is now working on automating the test so it can be applied at larger scales. The company is developing a mechanised process that will sample, screen and sort the eggs. Mr Bruins hopes to see their machine on the market around the beginning of 2018.

Around the world, a number of projects are exploring various other ways to resolve the issue. "It's sort of a race now," says Mr Bruins, citing potential competitors in Germany,

Canada and Israel. “The first one that hits the market is going to win out.”

However, there might be a more straightforward solution. Some people believe the answer to the chick-culling conundrum is to use a ‘dual purpose’ breed of bird, and return to time-honoured methods of using female birds for egg production and males for meat.

In two projects, in Germany and Switzerland, researchers are currently looking into how dual-purpose breeds could work in the commercial poultry sector.

The German study is comparing conventional and dual-purpose breeds using a set of parameters that includes welfare, animal behaviour, disease resistance and slaughter conditions. The researchers are also looking at ways to optimise feed composition, housing and management to decrease the costs involved with farming these less efficient breeds.

Project leader Professor Silke Rautenschlein says dual-purpose breeds offer a number of advantages over the new egg-sexing technologies, the most important being that the chickens are available now. “At this point it is still not clear when and if the in ovo gender technology will be really available and commercially usable in the near future.”

“In addition,” she says, “the dual-purpose chicken not only avoids fully the killing of male layer-type chicks, it also reduces the risk of cannibalism when they have intact beaks, which is a significant challenge for commercial layer-type birds under field conditions.”

Meanwhile, the Swiss research programme is focusing on the food-security issues that would result from the lower feed conversion

rates of dual-purpose breeds. These breeds would require more feed grains to produce the same amount of meat and eggs – grains that could potentially be used in human food.

Professor Michael Kreuzer from the Swiss research project says the consumer issues arising from using these breeds would include smaller eggs and less favourable cuts of meat, as well as higher prices caused by the reduced efficiency in poultry production. Both projects will be investigating how consumers might react to these different, costlier poultry products.

Wouter Bruins says that while he believes dual-purpose breeds can be a great niche product, he thinks the costs associated with rearing and managing them would be too great for commercial production to become widespread.

Even if these research efforts bear fruit and culling can be avoided, some campaigners still would not be happy with the egg industry’s welfare measures.

Isobel Hutchinson from the charity Animal Aid says: “Whilst it would represent some progress if male chicks were no longer gassed to death, the egg industry would still be responsible for shocking animal suffering on a massive scale.

“Even so called ‘higher-welfare’ systems can involve birds being kept in crowded sheds, with only limited outside access.”

Wouter Bruins admits that his method is unlikely to lay all concerns to rest. But he suggests that most egg consumers buying higher-welfare products such as free range eggs today would be happy to see an end to male chick culling as soon as possible. ■





Why is Barn Winning in America's Cage-Free Era?

While free range is all the rage in the UK, barn production seems to be where the US and Canadian egg industries are heading. But why? Treena Hein investigates.

Currently in the UK, birds in barns supply only a small amount of egg production – about 5 per cent, according to government data. In 2015, enriched colony cage systems accounted for 51 per cent of total production and free range was 44 per cent. However, all this could be about to change.

Josh Balk, Senior Director for Food Policy at the Humane Society of the United States (HSUS), suggests: “The UK’s top 10 largest grocers just enacted policies to go 100 per cent cage-free, either barn or free range. There’s no future for the practice of [enriched housing].”

In a recent flurry of animal welfare commitments by retailers, Tesco, Aldi, Morrisons, Asda, Lidl and Iceland all pledged to source no eggs from caged hens by 2025. Their alternative lines of supply include both barn and free range production, depending on the retailer. Sainsbury’s, The Co-operative, Waitrose and M&S, meanwhile, all already source exclusively cage-free eggs.

At the same time, free range production seems to be favoured by con-

" ...retail demand for free-range had grown from 45 per cent to 59 per cent. This is increasingly hard to ignore, and it looks like the future for British egg farming could be free range."

sumers. Speaking at the the British Pig & Poultry Fair in May 2016, Tom Willings, former Agriculture Director with Noble Foods and now a consultant, told his audience that over the previous seven years, combined retail demand for cage and barn eggs had fallen in the UK from 50 per cent to under 37 per cent. Meanwhile, retail demand for free range had grown from 45 per cent to 59 per cent. This is increasingly hard to ignore, and it looks like the future for British egg farming could be free range.

In comparison, in Canada and the US, free range production systems are almost exclusively confined to organic farms. This is because farms that have been certified organic are able to charge organic prices – which makes the higher cost of free range production worthwhile. In most of Canada, free range birds can only be outside for a small part of the year due to the harsh climate. Also, across North America, there are concerns about the risks of predation for poultry allowed to run free, as well as about diseases spread by contact with wild birds.

A vast number of North American food prod-

uct makers, restaurant chains and retailers have therefore made recent commitments to source only barn eggs, known in North America as 'cage-free' or 'free-run' (as described here and here). Such companies include McDonald's, Burger King, Kraft and Walmart. This is the American alternative to their conventional production methods, which mainly use the battery cages that were banned in Europe on welfare grounds in 2012.

But why choose barn over enriched cage housing? Is it all about the consumer? Are barn eggs the focus because consumers are generally unaware of any other alternatives to battery cages? Or it is because consumers still see enriched cages as cages, and therefore cruel?

Egg Farmers of Ontario (EFO) agrees that it's likely consumers aren't familiar with enriched cages. Yet, says EFO, some studies suggest they provide similar or better welfare benefits than cage-free eggs, and for a lower price. However, the association maintains that the North American food industry cage-free stance has nothing to do with consumer preferences. "Committing to barn production," states EFO's Director of Communications, Bill Mitchell, "keeps the food industry safe from attacks from animal rights groups."

Mr Mitchell says Ontario egg farmers are not going to move directly to barn production because of the commitments of the North American food industry. "Of course, we'll respond to what the consumer wants, but we are definitely going to engage with consumers about the welfare benefits of enriched systems, because our farmers are focused on what is best for their birds," he explains, "and because of the lower cost of these eggs compared to cage-free production."

Consumer perception

American consumers' understanding of hen housing and sustainability in egg production was recently examined by the Coalition for a Sustainable Egg Supply (CSES), a group made up of (mostly American and a few Canadian) scientists, non-government organisations, egg producers, restaurants and retailers. Six consumer focus groups in three US cities were involved.

The research found that most participants believed organic or cage-free production systems provide eggs of better quality, which may have contributed to the consumer pressure for retailers to go cage-free. Some did not realise there was any difference between cage-free and free range. In terms of decision-making when purchasing eggs, food safety ranked first and hen

welfare ranked second, followed by worker health and safety, food affordability and environmental impact (the Coalition's chosen five 'sustainability factors').

Most respondents said they would pay more for eggs produced in systems with better hen welfare.

"Participants initially understood that trade-offs are associated with different systems, but there was little acknowledgement that cage-free could have negative consequences associated with it, because those trade-offs were contrary to their initial perceptions," CSES states in its summary report. In other words, it's difficult for people to get past their prejudices about different methods of production.

"This led them to strongly question the cred-

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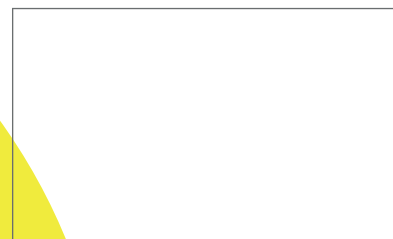
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"From the outset, most felt certain that cage-free eggs were superior to those produced conventionally, because that system was consistent with a more idyllic image they had of egg production."

ibility of the information and even deny that elements of cage-free could be worse than in other production systems. From the outset, most felt certain that cage-free eggs were superior to those produced conventionally, because that system was consistent with a more idyllic image they had of egg production."

The report continues: "As they learned more, consumers began to question their positions to the point of feeling they had been 'duped' by cage-free labelling."

The science of hen housing

Consumer demands and pressure from animal rights groups aside, what else is driving the preference for barn production? Perhaps the North American food industry has looked at scientific studies on hen housing and concluded that barn eggs are best for hen welfare.

A recent CSES hen-housing study was financially supported by members including



Egg Farmers of Canada and McDonald's USA. The research measured five sustainability factors (hen welfare, environment, worker health and safety, food safety and quality, and affordability) across three types of production (barn, enriched and battery cage) over three years.

Overall, no housing system came out on top. CSES states: "There are positive and negative impacts and trade-offs associated with each of the three hen housing systems

relative to each of the five sustainability areas." The report added that some of these trade-offs will be more important to different stakeholders in the poultry meat supply chain than others.

Josh Balk at the Humane Society of the United States questions the validity of the study, pointing out that the barn and enriched facilities in the study were brand new and operated by workers unfamiliar with these production systems. Well-established operations with experienced workers, he says, would have provided very different study results. Mark Crouser, spokesperson for the US-based Center for Food Integrity (an independent food-industry monitoring organisation which facilitated the CSES research) confirms both points.

"The cage-free and enriched barns were not well-established operations but newly built because they had to be built at the same site as the conventional barns to rule out locational differences in the study," he explains.

"Due the lack of these types of facilities in the US and operators familiar with them at this site prior to these being built, the workers for the new cage-free and enriched houses were newly trained to manage these facilities."

Similarly, the facility managers had no direct experience overseeing the alternative housing systems. Co-lead researcher Dr Janice Swanson of Michigan State University admits: "Having a farm with extensive experience might have yielded better data. However, considering the majority of farms in the US have absolutely no experience with these systems, our study likely yields a more

"The science cannot conclude that barn or free-run systems are better than enriched cages. There is no scientific way of balancing the merits and demerits of each system. It can only be a judgement made by individuals or organisations on how much weight they give to each of the advantages compared with the problems in each system."

realistic look at issues related to transitioning to these systems."

She added that the study has become even more relevant after the all cage-free announcements, as it shows the challenges ahead.

"Producers need to identify the flies in the ointment well ahead of changing up the system," she says. "We were always clear about the limitations of the study. It's why we did not use this data to announce which system is best, but instead focused on the trade-offs. And in looking at some of the more controlled studies recently published, we are not very far off the mark."

Josh Balk also questioned why only one building for each of the three housing types was studied, instead of multiple operations of each type. In response to this point, co-lead researcher Dr Joy Mench of the University of California, Davis says: "It would have been lovely to have dozens of sites where all three housing systems were in place so that they could be directly compared, but they were not available and building them would have been cost prohibitive, putting it mildly."

How are companies deciding which production system to use?

Companies that have examined this research have decided to implement a range of different production methods. We asked two CSES members if the results had affected their production system decisions.

Herbruck's Poultry Ranch in Saranac, Michigan is on track to be completely cage free by 2025, having started the transition in the 1990s. The company does not mention customer desire nor research findings as having had anything to do with the decision.

"We believe in a culture of 'Serve the Bird'," said Herbruck's Project Co-ordinator, Rose Plummer, "and we have made several trips to Europe and invested in the best housing systems to ensure the health and safety of our birds."

Another CSES member, McDonald's USA and McDonald's Canada, will source only barn eggs by 2025. McDonald's Canada states: "Our decision for cage-free was based on the changing expectations of our customers, insights learned from scientific

research (including recent research conducted by CSES) and ongoing conversations with our suppliers and other animal welfare experts.”

For his part, Canadian animal welfare researcher Michael Cockram believes: “The science cannot conclude that barn or free-run systems are better than enriched cages. There is no scientific way of balancing the merits and demerits of each system. It can only be a judgement made by individuals or organisations on how much weight they give to each of the advantages compared with the problems in each system.”

Dr Cockram, who heads the Sir James Dunn Animal Welfare Centre at University of Prince Edward Island in Charlottetown, PEI, Canada, says some retailers and fast food

companies have been extensively lobbied by special interest groups opposed to the use of any form of hen caging.

“Personally,” he adds, “I would consider it unfortunate if the egg industry in Canada were prevented from adopting enriched cages due to ignorance of the issues by those who buy their eggs.

“That said, if the issues related to large group sizes and the risks of injury can be dealt with in barn or free-run systems, this is also an option for the industry to produce eggs for consumers who wish to purchase eggs from non-cage systems – that is, basing their buying decisions on a personal ethical perspective rather than necessarily from an animal welfare perspective.” ■



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Is Gas Stunning as Humane as we Think?

Animal health authorities are researching ways to reduce unwanted side-effects of controlled-atmosphere stunning around the world. Glennis Kriel investigates current concerns and how gas stunning might be improved to minimise the symptoms of discomfort.

The primary mission of the Paris-based World Organisation for Animal Health (OIE) is to prevent the spread of livestock disease among its 180 member nations – but it is also constantly looking for ways to improve animal welfare worldwide.

When it comes to gas stunning, the process by which gases such as carbon dioxide or nitrogen are used to render the animals unconscious prior to slaughter, its main focus is on addressing side-effects which could be signs of unnecessary suffering.

Dr Moetapele Letshwenyo, OIE Sub-Regional Representative for Southern Africa, whose office monitors animal health across 15 African nations, said the OIE does not have a problem with gas stunning if done properly. While this is the case in general, poor implementation has become associated with negative side-effects. In the case of birds, these can include head shaking, flapping of wings, convulsions and gasping.

Some ways of implementing gas stunning are better than others, Dr Letshwenyo explained. Gassing is more uniform when birds are subjected to the gas all at once, such as when they are lowered into the gas on

"The drawback is that gas stunning does not induce instantaneous insensibility, which raises the question: how much stress and discomfort does the animal undergo before it loses consciousness?"

a lift or elevator. When the birds are moved into the gas on a conveyor belt, the birds at the front often inhale more gas than those at the back of the container.

"The speed at which the birds are managed from when they are delivered until they are stunned is also a matter of concern, as it seems that more side-effects occur in plants where this process takes longer," Dr Letshwenyo said.

As more people use gas stunning, new information is becoming available, said Dr Letshwenyo, which has to be continuously reviewed to ensure it stays relevant. There is, for example, a lot of debate over which gases or mixture of gases are the best to use and at what ratios and dosages. There have been concerns over the use of carbon dioxide because this is a pungent gas that can irritate animals' eyes and respiratory tracts. There also seem to be differences between the ways individual animals react to these gases.

Dr Temple Grandin, Professor of Animal Science at Colorado State University in the United States, who has written the book

Livestock Handling and Transport, said that there is likely to be a little discomfort before birds lose consciousness with gas stunning. However, in comparison with electrical stunning, where live birds have to be hung upside-down on shackles, they experience much less stress.

"Electrical stunning has the advantage of producing instantaneous unconsciousness," Dr Grandin explained.

"But handling to position the animal is more difficult as each bird has to be handled by a person and hung on a shackle. Hanging birds on a shackle is highly stressful to them," she said.

"From a handling perspective, controlled atmospheric stunning is therefore far superior. The birds enter the stunner in the transport containers and handling by people at the plant is eliminated."

The drawback is that gas stunning does not induce instantaneous insensibility, which raises the question: how much stress and discomfort does the animal undergo before it loses consciousness? According to Dr Grandin, different researchers have reported different results.

In her opinion some discomfort during anaesthesia induction – as signalled by reactions from the animals such as gasping and head shaking – may be acceptable as a trade-off against greatly diminished handling stress. However, in cases where the general effects of gas inhalation are escape movements and attempts to climb out of the container, she sees it as a sign that the distress is too severe and the system should not be used. "Gas mixtures that cause escape

movements are not acceptable and the reactions of poultry or pigs should therefore be observed,” she said.

Dr Grandin added that staff operating the stunning system should be well trained to ensure they know what they are doing. Equipment should be calibrated and inspected regularly to ensure proper functioning, and she pointed out that wind around the plant building, changes in plant ventilation and opening and closing doors may alter gas mixtures in some systems.

Birds should be constantly monitored – through windows or cameras – from the moment they enter the gas until they fall over or lose posture. Dr Grandin’s suggestion is that plants should use a scoring system to compare the reactions of birds during different batches. Birds showing symptoms of distress might score a three or a four, depending

on the severity of the symptoms, while birds that show little distress might score a two and those showing no distress before they lose consciousness might score a one. In this way, staff could monitor birds’ behaviour with consistency, making it easier to identify adverse reactions as soon as they appear.

Gas stunning has been used with great success in many processing plants in Europe and America. But its use remains limited to big commercial companies, and the main reason for this is the high cost of installation compared to electrical stunning.

“Gas stunning set-ups are much more expensive than electric stunning, so companies in general still tend to use electric stunning,” said Dr Grandin, pointing out that, “Labour associated with gas stunning, nevertheless is much lower, because there is much less handling of birds pre-stunning.” ■

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Not So Fast: How Consumer Pressure Is Putting the Brakes on Broiler Growth

Animal welfare organisations often cite the fast growth of modern broiler breeds as a reason they see the poultry industry as cruel. The chicken's rapid development to maturity, they say, can cause health problems for the bird, a claim that feeds into consumer concerns about today's poultry production methods. In response, producers in a number of countries are now changing their ways, hoping to gain a premium on meat from slower-growing breeds, *The Poultry Site's* Editor Alice Mitchell reports.

In the commercial broiler-meat sector, fast-growing chicken genotypes are commonly used to amplify production rates. These birds reach a target live weight of between 2kg and 2.5kg in just five to six weeks.

Some animal welfare organisations, such as Compassion in World Farming (CiWF), say this means the broilers often suffer from a number of health and welfare problems. CiWF says these mainly include issues with walking and disorders of the heart and vascular system, adding that the birds' lethargy and lower activity levels exacerbate their health problems.

On the other hand, the Chicken Check-In website – a public information service run by the US National Chicken Council (NCC) on behalf of American poultry producers – says that strong breeding programmes mean that general bird health has improved even as they have been bred to grow larger and faster.

The NCC cites data showing big declines in carcass condemnation due to signs of disease between 1990 and 2015. Leg problems are also much less prevalent than they were 20 years ago, claims the organisation, because farmers and breeders began selecting birds for leg strength and overall skeletal health.

But do such assertions satisfy welfare-conscious consumers?

Public concern for chicken welfare has arguably never been so high, with a huge transfer of hens to ‘cage-free’ egg production systems in the pipeline in several different countries. Could broilers with slower growth patterns become the next welfare trend to spread like wildfire?

Phil Brooke, Welfare and Education Development Manager at CiWF, says slower-growing breeds provide a number of welfare benefits. “As well as improved walking, slow growth potential broilers have significantly less foot-pad dermatitis and are more active, perform-



...conventional broiler breeders tend to be kept on calorie-restricted diets to ensure they do not grow as fast as chickens intended for meat, in order to maintain their health and reproductive performance. Using slower-growing breeds removes the need for this practice.

ing more walking, perching and pecking behaviours than fast growth-potential breeds.”

“They are able to take fuller advantage of the extra space allowances and enrichments provided in higher welfare systems,” says Mr Brooke.

He adds that conventional broiler breeders tend to be kept on calorie-restricted diets to ensure they do not grow as fast as chickens intended for meat, in order to maintain their health and reproductive performance. Using slower-growing breeds removes the need for this practice.

As well as helping to satisfy consumer concerns over animal welfare, companies involved with producing slower-growing broiler breeds suggest there are other benefits to be gained by producing them.

Breeding company Aviagen suggested a wider variety of available products could be

beneficial for stores: “Retailers are striving to find particular points of difference to attract consumers and in some cases slow-growing birds can be part of such an approach.”

Paul van Boekholt, from Hubbard, says: “Because of the robustness of this type of chicken it also ticks the boxes of the wish to drastically reduce the use of antibiotics to (close to) zero.” He adds that slower-growing birds are easier to manage and can also be easier to process, with good quality and without meat defects.

Slower-growing birds are now gaining popularity in some countries, particularly in parts of Northern Europe.

France was one of the first countries where this sort of chicken production became popular. In shops the meat is marketed under the ‘Label Rouge’ quality-assurance badge. Poultry qualifying for the Label Rouge mark must comply with specified free-range production methods using traditional breeds, with a slaughter age of 81 days minimum. Label Rouge claims this whole controlled process makes their chicken taste better.

France’s red label has been very popular with consumers and today more than 100 million chickens per year are processed under its banner.

But it’s in the Netherlands that demand for slower-growing broilers has truly taken off. In response to consumer concern almost all Dutch supermarkets have fully abandoned selling meat or products from conventional broilers, and now only sell meat and products from slower-growing chickens. The birds are usually reared under quality assurance programmes and tend to have their av-

"In the near future at least, popularity of slow-growing broilers is likely to be confined to the markets where consumers have greater spending power."

average rate of weight gain set at a maximum of 45g or 50g per day.

Outside of Europe, American animal welfare rating organisation Global Animal Partnership (GAP) said in April that it is aiming to replace fast-growing broiler breeds with slower-growing breeds for all farms growing chickens to its standards within the next eight years. Approximately 277 million chickens are grown under the GAP standards on 600 farms, and these benchmarks are used by the United States' eighth largest food-and-drug store, Whole Foods Market.

Despite the trend, companies involved with breeding slow-growing broilers believe that, in the near future at least, their popularity is likely to be confined to the markets where consumers have greater spending power.

"We do expect a further increase in the sales of this kind of product," says Hubbard's Paul van Boekholt, "though it will still be a smaller part of the total world market. Many countries around the world, especially the less developed or emerging economies, are still totally focusing on the cheapest way of producing animal protein."

One drawback to producing slower-growing breeds that is not often discussed is the effect on broiler production companies. Jer-

ry Moye, president of breeding company Cobb, says: "Growers will need to have different pay structures as they will have fewer flocks on their farm each year, due to slow growth. There will also be an impact on processing cost from the combined impact of lower weights and lower meat yields."

Mr Moye adds that companies will need more poultry houses, since it takes more time for the chickens to reach market weight. "Today, in many regions, one of the biggest challenges is receiving approval for additional broiler housing," he says.

However, the key concern with slower-growing breeds is the increased resources required to produce the same amount of meat yielded by a fast-growing flock.

In the US the National Chicken Council contends that the sustainability of the poultry industry has improved as broilers have become bigger over the years, as today's conventional chicken breeds now require seven per cent less feed per pound to grow than 25 years ago. They also require less fuel, water and land to produce the same amount of meat than slower-growing breeds.

A more widespread movement towards slower-growing breeds would certainly reduce the efficiency and thus the environmental credentials of the poultry meat sector.

However, the breeders at Aviagen point out that chicken would still be the best choice for environmentally-conscious meat-eaters: "It is worth remembering that chicken is by far the most sustainable land protein animal to produce so, in all its forms, it remains a very favourable option for the centre-of-plate protein source."■

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INTERNATIONAL PRODUCTION & PROCESSING EXPO

September.Industry News



Responsible Breeding = Sustainable Production

GLOBAL - Modern broiler breeding contributes in a number of ways to sustainable poultry production.

As part of its balanced breeding programme, Aviagen® has a clear objective to deliver continuous progress in sustainable production. Aviagen breeds poultry that produces a smaller environmental footprint while at the same time providing healthy, high-quality broilers and an affordable protein source for the growing global population.

Aviagen's objective is to increase utilisation efficiency for key inputs such as feed and water by selecting directly on these important traits, along with robustness, health and welfare. Selection for meat yield and quality ensures efficient meat production and that poultry remains the animal protein of choice globally.

As a result of a sustainable breeding programme, Aviagen is able to make a positive impact on the environment. When compared with other meat-producing species, poultry meat production has the least CO2 impact. This has been driven primarily by the feed efficiency of the modern broiler and its ability to convert less feed to meat, but also through improvements in robustness, liveability and breeder performance.

A reduction in resources such as feed leads to land savings, which is particularly important in a world where less land resources are available for agriculture, as well as giving economic advantages.

Aviagen's interaction with society contributes to developing its sustainable breeding programme even further. Continuous feedback and opinions from key stakeholders and consumer groups have an influence on sustainable breeding now and for the future.

The EuroTier 2016 Digital

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trade fair for animal production

Release Date
**4th Nov
2016**

 5m Publishing



5m Publishing and ThePoultrySite.com, ThePigSite.com, TheFishSite.com, TheCattleSite.com, TheDairySite.com & TheBeefSite.com are proud to announce the launch of our Second EuroTier Digital Magazine which will be released ahead of the EuroTier exhibition in November 2016.

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Industry.Events



● **2016 Latin American Meeting of the Poultry Science Association**

São Paulo, Brazil
4th to 6th October

The Poultry Science Association (PSA) Conference will be held for the first time in Brazil. From 4th until October the 6th, 2016, Campinas, a city in São Paulo state, will host the main global meeting on poultry research. Called the 'Latin American Scientific Conference', the event will be the first outside of North America in over one hundred years.

● **Egg & Poultry Industry Conference (EPIC)**

Newport, South Wales, UK
6th to 7th November

This year's theme is: "Celebrating an EPIC 50 years" As well as providing up to the minute thought provoking debate from invited international experts, the conference will include a 'Back to the Future' session in which speakers from our own industry will look across all sectors to remind us of what we have achieved and also what is yet to be done.



EuroTier 2016 / EnergyDecentral 2016 ●
Hanover, Germany
15th to 18th November

EuroTier first took place in 1993. Since 1996, Hanover's exhibition grounds – the largest in the world – has hosted the event every two years in the month of November.

EuroTier is organised by the Frankfurt-based German Agricultural Society (DLG). Throughout DLG's long history (founded in 1885), exhibitions have always played a major role in its work for the agricultural and food sector.

3rd World Veterinary Poultry ●
Association (WVPA) Asian Meeting
Manila, The Philippines
20th to 21st September

The WVPA and its Filipino Branch (The Philippine College of Poultry Practitioners) is pleased to announce that the 3rd WVPA Asian Meeting will be held in Manila on 20 and 21st October this year.

Listings.Business Directory

Health & Welfare



Ceva Animal Health

Tel: +33 (0) 557 554 040
Fax: +33 (0) 557 554 198
info@ceva.com
www.ceva.com

Areas:

Pharmaceuticals
Vaccines
Equipment: Vaccination
and Medical)
Feed: Additives

CEVA Santé Animale is a global veterinary health company focused on the research, development, production and marketing of pharmaceutical products and vaccines for pets, livestock, swine and poultry.



Merck Animal Health

animal-health-communications@merck.com
www.merck-animal-health.com

Areas:

Feed: Safety Products
Feed: Additives
Feed
Cleaning/Disinfectants
Pharmaceuticals

Merck Animal Health offers veterinarians, farmers, pet owners and governments the widest range of veterinary pharmaceuticals, vaccines and health management solutions and services.



Merial

merial.com

Areas:

Pharmaceuticals
Vaccines
Equipment: vaccination
Medical
Feed additives

From developing advanced vector vaccines fine-tuned for chickens' immune systems, to engineering highly specialized machinery for the most efficient vaccine administration, Merial is leveraging a wide spectrum of technologies to address today's biggest poultry-farming challenges.



Zoetis

Tel: +1 919 941 5185
GP.Marketing@zoetis.com
www.zoetis.com

Areas:

Vaccines
Biodevices
Feed Additives
Diagnostics

Zoetis strives to support those who raise and care for farm animals by providing a range of products and services that offer tangible solutions to the many challenges veterinarians and livestock producers face every day.

Breeding & Genetics



Aviagen

Tel: +1 256 890 3800
Fax: +1 256 890 3919
info@aviagen.com

Areas:

Breeding
Genetics

The Aviagen Group is the global market leader in poultry genetics. As the world's premier poultry breeding company, Aviagen develops pedigree lines for the production of commercial broilers and turkeys.

**Cobb**

Tel: +1 479 524 3166
 Fax: +1 479 524 3043
 info@cobb-vantress.com

Areas:

Breeding
 Genetics

Cobb broiler breeding stock has the sustained advantage of the most efficient feed conversion and highest potential for profitability for the company's global customers.

**Grimaud Frères Sélection**

Tel: +33 (0)2 41 70 36 90
 Fax: +33 (0)2 41 70 31 67
 grimaudfreres@grimaudfreres.com
 www.grimaudfreres.com

Areas:

Breeding
 Genetics

Grimaud Frères are a multi-species selection and breeding operator in the service of the waterfowls and festive poultry field.

**Hubbard**

Tel: +33 296 79 63 70
 Fax: +33 296 74 04 71
 contact.emea@hubbardbreeders.com
 www.hubbardbreeders.com

Areas:

Breeding
 Genetics

Hubbard provides solutions that focus on the economic performance, health and wellbeing of breeding stock. Hubbard specializes in state-of-the-art selection programs to improve the performance of their pure lines.

**Hy-Line**

Tel: +1 515 225 6030
 Fax: +1 515 225 6030
 info@hyline.com
 www.hyline.com

Areas:

Breeding
 Genetics

Hy-Line International is a world leader in poultry layer genetics with a rich history of innovation. Hy-Line was the first poultry breeding company to apply the principles of hybridization to commercial layerbreeding.

**Novogen**

Tel: +33 296 58 12 60
 Fax: +33 296 58 12 61
 contact.novogen@novogen-layers
 www.novogen-layers.com

Areas:

Breeding
 Genetics

NOVOGEN offers a new alternative giving the egg producers more choice and possibilities to fit their specific market requirements.

Biosecurity & Hygiene

**Axcentive**

Tel: +33 442 694 090
 info@axcentive.com
 http://www.halamid.com/

Areas:

Biosecurity
 Cleaning

Axcentive, supplies Halamid®, the universal disinfectant, worldwide. Effective against all major problematic microorganisms, Halamid® is widely used in veterinary hygiene: poultry, aquaculture, among other sectors. In Europe, Halamid® is listed in the BPR for product types 2,3,4 and 5.



CID LINES
 Tel: +32 5721 7877
 Fax: +32 5721 7879
 info@cidlines.com
 www.cidlines.com

Areas:
 Biosecurity
 Cleaning
 Feed: Additives
 Health and Safety
 Pest Control
 Welfare

CID LINES offers VIROCID, the most powerful disinfectant, which is part of a hygiene program for poultry, written by hygiene specialists. VIROCID has a proven record in preventing and fighting disease outbreaks for many years.

Feeding & Nutrition



AB Vista
 Tel: +44 (0) 1672 517650
 Fax: +44 (0) 1672 517660
 info@abvista.com
 www.abvista.com

Areas:
 Feed
 Feed: Additives
 Feed: Nutrition

AB Vista is an integrated international supplier of new generation micro-ingredients for animal feeds providing visionary solutions for your agribusiness.



Biomim
 Tel: +43 2782 803 0
 Fax: +43 2782 803 30
 office@biomin.net

Areas:
 Feed
 Feed: Additives
 Feed: Nutrition

BIOMIN offers sustainable animal nutrition products such as quality feed additives and premixes, which include solutions for mycotoxin risk management, a groundbreaking natural growth promoting concept as well as other specific solutions.



Kerry
 Tel: +31 36 523 3100
 Fax: +31 36 523 3110
 clive.girdler@kerry.com
 www.kerry.com/animalnutrition

Areas:
 Feed
 Feed: Additives
 Feed: Safety

Kerry Ingredients & Flavours is a leader in developing, manufacturing and delivering technology-based ingredients and integrated solutions. Our products are designed specifically to optimize the nutritional value and maximize the energy of feed ingredients in poultry diets.



Novus International
 Tel: +1 314 576 8886
 Fax: +1 314 576 2148
 contact@novusint.com
 www.novusint.com

Areas:
 Feed
 Feed: Additives
 Feed: Nutrition

Novus International is a global leader of animal health and nutrition programs for the poultry, pork, beef, dairy aquaculture and companion animal industries.

Housing & Equipment



Big Dutchman
 Tel: +49 4447 801 0
 Fax: +49 4447 801 237
 big@bigdutchman.de
 www.bigdutchman.com

Areas:
 Equipment: Breeding
 Equipment: Drinking
 Equipment: Egg
 Equipment: Feeding
 Equipment: Weighing

The poultry equipment supplier for layer management, breeder management, poultry growing and poultry climate control.



Jansen Poultry Equipment

Tel: +31 342 427 000
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info@jpe.org
http://www.jpe.org/

Areas:

Breeding
Drinking
Egg
Nesting

Jansen Poultry Equipment was founded in 1986. With our knowledge of technology and poultry, we succeeded in developing the most sought-after laying nest. Today the company offers a wide range of poultry systems.



Termotecnica Pericoli

Tel: +39 0182 589006
Fax: +39 0182 589005
termotecnica@pericoli.com
www.pericoli.com

Areas:

Climate Control
Climate Management
Heating, Cooling and
Ventilation

A global market leader specializing in climate technology since 1967 in design, manufacture and distribution of efficient/quality heating, cooling and ventilation equipment and systems for the poultry industry with a full range of products to meet all specification and applications.



Vencomatic

Tel: +31 (0) 497 517380
Fax: +31 (0) 497 517364
info@vencomatic.com
www.vencomatic.com

Areas:

Equipment: Breeding
Equipment: Drinking
Equipment: Egg
handling and grading
Equipment: Nesting

Vencomatic is a global supplier of innovative and welfare friendly housing solutions for the poultry sector. The flexible and turn key solutions of Vencomatic offer large possibilities for a wide range of poultry production concepts.

Incubation & Hatching



Chickmaster

Phone: +1 330-722-5591
Fax: +1 330 723-0233
Email: info@chickmaster.com
www.chickmaster.com

Areas:

Equipment: Incubation
Equipment: Hatching
Equipment: Egg
Equipment: Environment

ChickMaster offers hatcheries innovative solutions incorporating the latest state-of-the-art technology for a broad line of incubators, energy management and control systems. Experts provide round the clock support for hatcheries in over 100 countries to optimize hatchability and quality.



Orka Food Technology

Tel: +852 8120 9245
Fax: +852 2802 7112
info@orkatech.com
www.eggtester.com

Areas:

Equipment: Egg
Equipment: Hatching
Equipment: Incubation

EggTester.com (officially known as "Orka Food Technology") is a leading worldwide manufacturer of egg-quality testing equipment to be used extensively in QC laboratories operated by egg producers, packers, universities, regulatory authorities, and primary breeders.



Pas Reform

Tel: +31 314 659 111
Fax: +31 314 652 572
info@pasreform.com
www.pasreform.com

Areas:

Equipment: Incubation
Equipment: Egg
Equipment: Environment
Equipment: Hatching
Waste Handling

Pas Reform is an international company, which has specialized in the development of innovative hatchery technologies for the poultry sector since 1919. Products and Services: Incubators, Hatchery Automation Systems, Hatchery Climate Control Systems and Hatchery Management Training.



Petersime

Tel: +32 9 388 96 11
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info@petersime.com
www.petersime.com

Areas:

Equipment: Hatching
Equipment: Incubation

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