

Poultry Digital



Poultry and the environment

Sustainability and the global poultry industry

Inside the Sustainability issue | Pastured poultry farming: soil health and sustainability • What are big food firms doing about climate change? • Are organic farms more sustainable? • Poultry companies vow to reduce plastic use • How Nigeria's young poultry farmers are turning the problem of waste on its head • Reader Q&A with Mike Colley

For professional people with a passion for poultry



The future is certain to bring both fresh challenges and new opportunities for those involved in poultry production across the globe. With this in mind, Boehringer Ingelheim is proud to offer you a range of comprehensive solutions to positively shape the future of poultry health.

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PREVENTION WORKS 
Shaping the future of poultry health



FROM THE EDITOR

“The impact of climate change is becoming more obvious and more pressing”

Sustainability continues to shape the agendas of the world's leading poultry companies, who are working hard to respond to consumer demands for not only more humanely produced chicken and eggs, but more environmentally sound products as well.

Across hemispheres, the impact of climate change is becoming more obvious and more pressing. Producers large and small have been impacted by droughts and the resultant high costs of feed, water shortages and even barn fires.

But waste is a key factor that many poultry producers (and consumers) can take into their own hands to better improve environmental metrics. Take Ogochukwu Maduako from Nigeria, for example, who's using egg shells for a wide variety of items from scouring scrubs to fertiliser ([page 20](#)). Across the world, companies like Cargill and Charoen Pokphand Foods are trying to reduce plastics ([page 22](#)) and their carbon footprints ([page 14](#)).

Find out what some producers have done at the farm level to try and improve the welfare of broilers by pasturing them, hoping to not only raise a more premium bird, but improve soil health ([page 10](#)).

Finally, we explore the latest research on sustainable production and compare organic systems to non-organic – the results may surprise you ([page 18](#)).

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Demand for cage-free eggs contributes to 2018 egg shortage in New Zealand

NEW ZEALAND 15 APRIL 2019

While a national egg shortage could mean higher prices, it's unlikely they will disappear from supermarket shelves.



Radio New Zealand reported that Poultry Industry Association executive director Michael Brooks said supply problems were causing the shortages nationally.

The number of laying hens nationally has dropped from 4.2 million at the end of last year, to 3.6 million.

"We're just going to see a lesser amount of eggs, and that will probably translate to some extent to price increases, just because of a shortage of supply," said Michael Brooks.

He said there were two main reasons for the drop.

In 2012 new rules were introduced to gradually phase out battery cages for hens in New Zealand by 2022. This meant a series of deadlines for farmers to incrementally give hens more space.

Poultry farmers faced significant costs to meet each stage of the new regulations and some had reduced flock sizes as they made infrastructure changes.

"There are costs in terms of new land, new farming systems, and a lot of farmers have really got some big and very costly decisions to make -

and that's had an impact on supply, and that is part of the issue that's leading to this supply issue at the moment."

Slow resource consent processes had also held up many developments, and affected new-comers, he said.

The other factor is demand is up as Kiwis are eating more eggs.

Mr Brooks thinks this is partly because nutritionists have swung back in favour of recommending eggs, and partly because of a swing away from carbohydrate-rich and sugary breakfast cereals.

In 2009 New Zealanders ate about 200 eggs each a year, but now we get through about 226 a year each.

"We produce one billion eggs a year. We're big egg eaters, it's a cost effective form of protein, and New Zealanders like eggs," he said.

For now, Mr Brooks said the downward trend in the number of hens in the national flock had already turned upwards, and the flock had begun to grow again.

[Click here](#) to read the full story.

€1 billion to facilitate access to finance for young EU farmers

EU 30 APRIL 2019

The €1 billion package announced 29 April by the Commissioner for agriculture Phil Hogan and EIB Vice-President Andrew McDowell, aims to increase access to funding for EU farmers, especially young farmers. The European Commission and the European Investment Bank (EIB) launched 29 April a €1 billion loans package targeting specifically young farmers. In 2017, 27 percent of the loan applications submitted to banks by EU young farmers were rejected, compared to only 9 percent for other farms.

Agriculture and rural development Commissioner Phil Hogan said:

"Access to finance is crucial and too often an obstacle for young people wanting to join the profession. With 11 percent of European farmers under the age of 40 years old, supporting young farmers in the sector is a priority for the European Commission and the post-2020 Common Agricultural Policy. I am pleased to see this new joint initiative up and running."

EIB Vice-President responsible for agriculture and bioeconomy, Andrew McDowell commented: "The agricultural sector is the backbone of the EU economy and has a key role to play not just in producing healthy food but also to battle climate change and preserve the environment. With this new initiative, the EIB is looking towards the future of the sector and addressing an important market gap, the lack of access to finance of farmers, especially the next generation of farmers. This programme loan will also support growth and competitiveness in the agriculture/bioeconomy sector, by preserving and creating employment in the rural and coastal regions."

[Click here](#) to read the full story.

Poultry takes the lead in IPC outlook

GLOBAL 25 APRIL 2019

Poultry is positioned to become the world's most consumed meat protein in 2019 as African swine fever spreads in pig herds across China.

As the International Poultry Council (IPC) took stock of the global protein outlook at its first semester meeting in New Orleans, Louisiana last week, one economic reality riveted attention: Total world production of pork will decline in 2019 with poultry in position to wrest the crown from pork as the world's most consumed meat protein.

The massive shift in meat proteins is being driven by African swine fever (ASF) in pig herds in three continents and 15 countries. Production losses in 2019 are expected to amount to 14 percent of the world's pork supply but may continue to move higher.

"Hog losses in China due to ASF will trigger big shocks in global protein markets," Christine McCracken, senior protein analyst at Rabobank, told IPC members, "and poultry is the meat protein with the most to win."

ASF outbreaks are ravaging pork production mostly in the Eastern Hemisphere, but the biggest impact is in China where nearly one-half of the world's pigs are raised. Herds



IPC | Christine McCracken, Senior protein analyst at Rabobank

there are being hard hit by a disease that results in 100 percent mortality of infected stock and for which no vaccine exists.

The disease, which has been in Russia and Eastern Europe for several years, was found in China in August 2018 and is spreading to Southeast Asia and Vietnam (the world's fifth largest producer of pork). A small outbreak in the European Union has threatened exports there.

[Click here](#) to read the full story.

Moy Park launches new plastics strategy

UK 25 MARCH 2019

Food company Moy Park has launched an ambitious new campaign to tackle the use of plastics and packaging across its business and the industry.

The company plans to reduce its overall usage of packaging by 5 percent year on year while also increasing the percentage of recyclable packaging by 5 percent.

The target is one of a set of goals announced by Moy Park as part of its "Remove, Reduce, Recycle and Research" strategy and is backed by a range of initiatives across the business.

The company will collaborate with academics and supply chain partners to develop sustainable packaging across its product portfolio and will also remove avoidable single-use plastic from its office and restaurants by 2020. The business will move to 100 percent widely recyclable rigid packaging by 2022, with all other packaging to be widely recyclable by 2025.

Speaking about the new strategy, Matt Harris, Moy Park's head of packaging said: "We have purposefully set ambitious, industry leading targets in order to deliver real results that can be felt by our customers and ultimately consumers. To achieve these targets, we'll be reducing our reliance on plastics, focusing on innovative new packaging, R&D and delivering accurate, clear recycling messages. We are committed to developing our business sustainability and we are excited to launch this latest campaign as part of our wider environmental commitments."

OPRL, the On-Pack Recycling Label scheme which aims to deliver a simple, consistent and UK-wide recycling message on retailer and brand packaging, has welcomed the announcement. Jane Bevis, chair, OPRL said: "Reducing materials use and shifting design to deliver more recyclable packaging are essential in reducing our sector's environmental impact. We're thrilled that Moy Park are taking a lead in this, and in engaging consumers in recycling."

[Click here](#) to read the full story.

Cheap chicken a major health risk, finds study

GLOBAL 17 APRIL 2019

Research from Germanwatch found more than half of tested chickens contained antibiotic-resistant bacteria. Research on behalf of Germanwatch found 56 percent of tested chickens contained resistant pathogens. For every third chicken, some contained bacteria which was even resistant to antibiotics of the highest priority for humans. Germanwatch is calling for a ban on the use of the most important antibiotics for humans in poultry, a levy on all other antibiotics in animal husbandry as well laws for better animal welfare on the farm.

The study of Berlin of chicken meat samples from large discounters was commissioned by the environmental

and consumer protection organisation Germanwatch and has revealed alarming findings: 59 portions of chicken meat - purchased from Lidl, Netto, Real, Aldi (North and South) and Penny - or more than every second sample (56 percent) is contaminated with antibiotic-resistant pathogens. Every fifth sample has several different resistances and more than every third sample is contaminated with bacteria resistant to reserve or human critical antibiotics - special antibiotics that have to work in sick people in an emergency when other antibiotics stop working.

[Click here](#) to read the full story.

RSPCA praises Waitrose commitment to improving chicken welfare

UK 5 MARCH 2019

Most of the UK's over one billion meat chickens live in "unacceptable" conditions – but the supermarket has committed to raising its standards.



The RSPCA is celebrating news that the supermarket chain is the latest company to commit to a significant improvement in meat chicken welfare.

More meat chickens are reared each year in the UK than any other land animal (over one billion) and a vast majority are kept in conditions which the RSPCA thinks are unacceptable and puts them at risk of suffering.

Waitrose joins Marks & Spencer, Nestlé and Knorr who have also signed up to the Better Chicken Commitment, pledging to meet a number of key requirements to improve the welfare of meat chickens across their entire supply, meaning that even the cheapest chicken products will have been raised to higher standards. The initiative has sparked recent media coverage following the launch of a campaign by the RSPCA which revealed shoppers expect supermarkets to ensure higher animal welfare, with some retailers using potentially misleading labelling that can give the impression of higher welfare conditions.

The requirements for the commitment have been drawn up by a partnership of animal protection groups,

including the RSPCA - and now the RSPCA is urging other supermarkets such as Tesco, Sainsbury's, Asda, Aldi, Lidl, Coop and Morrisons to follow suit and commit to raising welfare standards across their supply chain of chicken by 2026.

That means addressing the most pressing welfare concerns in meat chicken production through the use of higher welfare breeds of chickens and providing natural light, more space, enrichment - such as straw bales and objects to peck at - and perching, as well as adopting more humane methods of slaughter. The RSPCA has long campaigned on these issues.

Kate Parkes, chicken welfare specialist at the RSPCA said: "This move by Waitrose is another great step for meat chickens and consumers. We are really pleased that now two of the country's best known supermarkets have jumped on board with this very important initiative, and we are hopeful that it will give their competitors the wake-up call they need to realise that animal welfare cannot go on being ignored.

[Click here](#) to read the full story

US ambassador says don't let farming "smears" stop post-Brexit trade deal

UK 4 MARCH 2019

Britain should not follow the European Union's "Museum of Agriculture" and let false concerns over US farming practices get in the way of a post-Brexit trade deal, the US ambassador to London said on Saturday.

On Thursday, the United States laid out its objectives for a post-Brexit trade deal with Britain, seeking to entirely eliminate or reduce barriers for US agricultural products and streamline regulatory differences.

Opponents of Brexit have argued that such a US accord would open up Britain's markets to the likes of chlorine-treated chicken and genetically modified crops, while ministers have said the government would not lower food standards to win trade deals.

"You have been presented with a false choice: either stick to EU directives, or find yourselves flooded with American food of the lowest quality," Ambassador Woody Johnson wrote in the Daily Telegraph newspaper.

"Inflammatory and misleading terms like 'chlorinated chicken' and 'hormone beef' are deployed to cast American farming in the worst possible light. It is time the myths are called out for what they really are: a smear campaign from people with their own protectionist agenda."

Johnson said American farmers were using all scientific and technological tools to help meet the challenges of a growing global population and the resulting health and environmental pressures that brought.

"It is not sustainable for the whole world to follow the EU's 'Museum of Agriculture' approach. We have to look to the future of farming, not just the past," he said.

Johnson said washing chicken was a "public safety no-brainer" and using growth hormones for cattle allowed more meat to be produced at a lower cost to the consumer and environment while being completely safe to eat.

"The fact is that farmers in America have the same priorities as farmers in Britain", he said.

[Click here](#) to read the full story.

Chicken Farmers of Ontario recognises consumer chicken product innovation

CANADA 15 MARCH 2019

Grand River Foods and Maple Lodge Farms are the first recipients of the Ontario Chicken Innovation Award

Chicken Farmers of Ontario (CFO) is pleased to announce the first recipient of the Ontario Chicken Innovation Award, co-applicants Grand River Foods and Maple Lodge Farms, who are collaborating to produce frozen, smoked chicken products using a proprietary process that is the first-of-its-kind in North America.

“Congratulations to Grand River Foods and Maple Lodge Farms on being the inaugural recipients,” said R. Douglas Cunningham, Chair of the Independent Advisory Committee that oversees CFO’s Ontario Chicken Innovation and Growth Program and was responsible for assessing applicants. “Their commitment to innovation is sure to put new chicken products on the plates of Canadian consumers for years to come.”

Created in 2018 by Chicken Farmers of Ontario, the Program is the first-of-its-kind in the chicken industry. It is open to primary processors, further processors, retailers, foodservice and restaurant companies involved in the processing, marketing and sale of chicken products. Companies that are not primary processors must include a primary processor as part of their application. Innovations must use chicken grown and fully processed in Ontario.

In assessing applicants, the Independent Advisory Committee considered four factors: historic sales, projected future sales, the quality of the idea and economic value. An additional supply of live birds is directed to the successful applicant’s primary processor to enable the innovation.

“This new, inline cooking approach allows chicken to be infused with a blend of smoke from untreated hardwoods through the cooking process and quickly frozen to lock in the flavours,” said Don Kilimnik, Director of Co-Packing Sales and Special Projects, Grand River Foods. “We’re

thrilled to be able to further grow this product line with the additional supply of chicken.”

“Our companies collaborate on many products and we are excited to be recognised,” said Fred Marques, Chief Operating Officer, Maple Lodge Farms. “Chicken is already Canada’s favourite protein and we are confident that introducing new products like this will strengthen that position.” With the first year of the Ontario Chicken Innovation and Growth Program complete, the Independent Advisory Committee is reviewing the Program and will open the next round of applications in the coming months.

“Chicken is already Canada’s favourite protein and we are confident that introducing new products like this will strengthen that position”

“We look forward to continuing to accelerate innovation in our industry and encourage all those involved in the processing, marketing and sale of chicken to consider applying,” said Ed Benjamins, Chair of Chicken Farmers of Ontario.

“By rewarding innovation, we can do more to put innovative chicken products on the plates of Canadian consumers and enhance economic activity in Ontario,” added Rob Dougans, President and CEO, Chicken Farmers of Ontario. “We look forward to seeing more successful applicants in the future.”

For more information about the Program, [click here](#).

50,000 chickens culled in Makawanpur bird flu scare

NEPAL 28 MARCH 2019

In the Makawanpur district of Nepal, authorities have culled more than 50,000 chickens and destroyed 9,015 eggs and 1,463kg of bird feed after the H5N1 virus was detected in poultry farms in the region

[The Himalayan Times](#) reports that a sample test confirmed the virus was found in poultry farms in the region. According to Chief District Officer Asman Tamang, officials are only allowing imports of chicks to enter the district after they are cleared by a veterinarian in a bid to prevent further spread.

“The infected chickens at 35 poultry farms were culled in three phases while the officials have spread disinfectants in 82 additional chicken farms,” Dr Sushila Shrestha of Centre for Bird Flu Control and Prevention said.

[Click here](#) to read the full story.

Avian influenza reported across four countries in recent months

UK 4 MARCH 2019

The Centre for Infectious Disease Research and Policy (CIDRAP) has published a report detailing recent outbreaks of avian influenza in China, Nepal, Iraq and Cambodia

In the latest avian flu developments in poultry, China reported a highly pathogenic H7N9 outbreak in zoo birds, Nepal reported three more highly pathogenic H5N1 outbreaks, Iraq reported an event involving highly pathogenic H5N8, and Cambodia reported three outbreaks involving low-pathogenic H7N4.

So far it’s not known if the virus that caused the Cambodian outbreak is related to a human infection from a novel H7N4 virus reported in China in 2018, reported CIDRAP.

[Click here](#) to read the full story.

Strengthening the industry through sustainable broiler production

Sustainable poultry production has become more than just an industry buzz phrase these days. Instead, efficient production is essential if we are to satisfy a growing global demand for high-quality protein, while at the same time ensuring bird welfare and preserving our Earth for future generations.

As a result of genetic advancements and balanced selection, broiler breeding company Aviagen's product range excels in biological efficiency. Aviagen's selection for improvements in growth rate and feed conversion ratio (FCR) has reduced the environmental effects of poultry production, while improving bird health, welfare and livability.

Better efficiency and performance

Due to the ongoing increase of supply and demand, the poultry industry is continuously working toward improving broiler efficiency to help feed a growing global population. When compared to the broiler of 2003, today Aviagen's selection strategy for the Arbor Acres, Indian River and Ross brands of broiler breeders result in broilers that require 215 grams less feed per kilogram (kg) of live weight, while providing 69 grams of extra total breast meat yield.



Less environmental impact

Progress in feed efficiency using cutting-edge Aviagen selection techniques means a more effective conversion of nutrients from feed to live weight. This efficiency has led to a 20 percent decrease in nitrate/phosphate excretion, and ultimately a reduction in the pollution run-off from agricultural land. When coupled with shorter grow-out times, improved efficiency has a positive impact on the atmosphere by lowering emitted greenhouse gases (water vapor, carbon dioxide, methane, nitrous oxide and ozone) by 15 percent, leading to cleaner air.

Conservation of natural energy

Sustainable broiler production relies on the resourceful use of valuable fossil fuels, such as petroleum, coal and natural gas to power farms, as well as diesel fuel used for equip-

ment and transport during poultry feed production. Aviagen's advancements in live weight and growth rate have led to shorter grow-out times, in addition to reduced feed production and transport, which lessen the depletion of these natural energy sources by 16 percent.



Minimised land and water use

Chickens are among the few food-producing species that adapt well to different farming systems in both urban and rural areas, strengthening production sustainability. Through improved livability and better feed efficiency, the 2.5kg broilers of today will require 0.5kg less feed, and drink 1 liter less water than broilers from 2003. Thus, 37 percent less agricultural land is needed for the production of the broiler feed required to produce the same amount of meat in 2003, and 31 fewer poultry houses are needed for the same number of broilers. From a welfare standpoint, more efficient water intake leads to better gut and footpad health for the birds and better litter quality. It also means more sustainable water use. This is in addition to a very strong and long-term focus to improve welfare through better cardiovascular system and skeletal development.

Sustainability for the future

The poultry industry is consistently working toward more sustainable methods of broiler production. Through Aviagen's genetic and selection advancements, the company has reduced the reliance of the poultry industry on land, water and fossil fuels, while decreasing environmental impact and embracing a more sustainable future for generations to come.



Pastured poultry farming: soil health and sustainability

Any production system has advantages and disadvantages for farmers, poultry and the environment

Words Georgina Starmer

Indoor systems provide a controlled environment where birds are vaccinated against disease, and mites can be kept to a minimum, while protecting livestock from predators. Indoor systems also make it easier for farmers to automate some processes, such as feeding and egg collection. However, the opposite effects can be seen if indoor systems are not properly managed, such as overstocking, which leads to cramped conditions that can affect the well-being of poultry and increases the risk of parasites and disease.

Sheds with free-range access to outside space can be a good environment for the well-being of the poultry, as there is natural light, perches, free movement and scratching available. While free-range systems allow poultry to access outside areas, that space is often static and fixed. While poultry do have space to move and exhibit natural behaviours, the constant presence of the birds can be harmful to pasture by increasing the parasite load, while too much manure can stop grass and herbs from growing.

Pastured poultry, in contrast, is more than a free-range system, and rather than raising birds in a fixed space, it provides access to fresh pasture on a rotational system. It offers an alternative to fixed housing and outdoor space that many advocates suggest creates healthier and happier birds, a better product for the consumer and benefits the environment.



With consumers increasingly aware of where their meat comes from, there is growing public interest in poultry that's been farmed with welfare in mind, and in a sustainable way that has the least negative effects on the local and wider environment.

Pastured poultry and soil health

With proper management, there are significant benefits for soil health from pastured poultry. As birds roam freely on pasture, the manure is distributed back into the soil creating a nutrient-rich material for grass and pasture crops to utilise, which in turn provides food. The presence of plant roots creates structure that inhibits erosion and promotes drainage, while problematic insects are naturally controlled.

Richard J Bednarek, Jr, state soil scientist in Iowa for the USDA-NRCS, states the following in support of pastured poultry on soil health:

"In my opinion, having chickens on pasture is good for soil health. The chickens will feed on insects including the non-beneficial insects in the soil food web. The chickens will eat the weed seeds reducing to eliminating weed pressure and improving the pasture vegetation's root system. The roots hold the soil in place, improve soil structure, increasing water infiltration and improving soil biology with increased root exudates feeding the microbes. The chicken litter is high

“One concern is the notion that having a large number of birds raised on pasture can decimate the local insect population, lower the amount of pollinators and lessen the biodiversity of the are”

in phosphorus, helping low-phosphorus pastures.”

However, one concern is the notion that having a large number of birds raised on pasture can decimate the local insect population, lower the amount of pollinators and lessen the biodiversity of the area.

Terrell Spencer, NCAT agriculture specialist, suggests in his 2013 publication *Pastured Poultry Nutrition and Forages* that it is important to keep watch on the condition of pasture and to move birds often. If left too long in one place, poultry can



“Through regular rotation, over-grazing can be prevented by allowing areas to rest and recover before allowing poultry to forage there again”

damage the soil through over manuring, resulting in a soil that is too rich and burns pasture seedlings before they can establish. They can also inflict damage with their scratching actions.

Through regular rotation, over-grazing can be prevented by allowing areas to rest and recover before allowing poultry to forage there again. This means that plants are not uprooted and the microorganisms that surround the roots in the soil stay and maintain a healthy soil culture.

Philip Lymbery, chief executive of Compassion in World Farming, says:

“Keep hens and chickens in small groups on grassland with cattle and sheep as part of the rotation. House them in moveable sheds to allow the pasture to recover. The birds will also eat grass, clover and bugs from the cow pats whilst their droppings help to restore soil fertility and reduce the use of artificial fertiliser.”

Somerset farmer Ollie White is the founder of Farm2Fork and provides grass-fed poultry and other meat nationwide. He

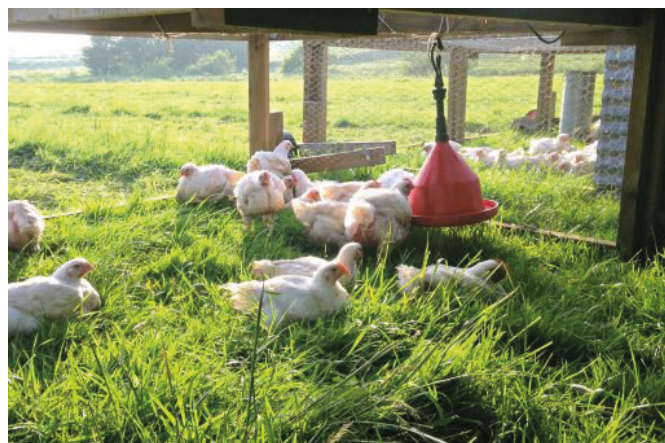
practises a multi-species grazing model, where cattle are followed by sheep and then by poultry, creating a natural living ecosystem.

He raises chickens between April and September on fresh pasture in large, floorless portable field pens housing around 75 birds each. This allows birds to access unlimited herbs and grasses, as well as insects and worms. The pens are then moved to fresh pasture each day, and the grass is fertilised by the chickens as they are moved.

White says that, unlike conventional free-range systems, pasturing poultry, “works with the land, not against it. It improves soil health, reduces parasites and increases fertility.”

Is pastured poultry a sustainable option?

For pastured poultry farming to be sustainable, it requires management that benefits not only the health of the poultry





and of the land, but of the farming business as a whole.

White explains that raising chickens on pasture works best as a seasonal opportunity, as there is no climate control as with indoor or free-range shed systems. However, the product can be frozen to provide a year-round income.

It is also more labour intensive than conventional systems because the outdoor pens need to be regularly moved. However, it does give a higher-value product. White suggests that in order to make a pasture-based system work from a business point of view, farmers need to sell direct to the public at retail price, rather than selling at wholesale prices to shops and suppliers.

He states: “Pastured poultry provides an opportunity for farmers to sell a high-value product directly to the public. There is a great story behind how the poultry is raised, and it offers a chance for farmers to connect with consumers.”

Although pasture allows plenty of foraging, it is argued that slower-growing birds will cost more to feed before they are ready for the market, and the added time it takes also creates a financial dilemma for farmers who could earn more by providing a faster turn-around. However, White explains that it is possible to raise pasture chickens within 56 days, in line with free-range standards. Alongside fresh pasture, his poultry is supplemented with organic

grain to provide a nutritionally complete and balanced diet. He finds that “the value of the finished chicken more than outweighs any extra you might need to spend on feed”.

Successfully raising poultry on pasture requires the balancing of different elements, such as correct rotation that promotes optimum pasture and soil health, as well as discipline in keeping the right number of birds on the land. For pasture poultry farming to be a viable business venture, farmers may want to view it as an added seasonal enterprise to their existing business, and gain the support of consumers who are willing to pay more for a premium welfare product. **PD**

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What are big food firms doing about climate change?

Various food giants are finding innovative ways to reduce their environmental footprint and use their influence to inspire sustainable production along the supply chain

Words **Glennis Kriel**

In the past, the bottom line used to be the be all and end all. But now, more and more food companies are realising the importance of sustainable development for their future growth and success. Sustainable development is no longer treated as a side project, or a nice-to-have bonus for a company's PR department, but as an integral part of the overall business strategy, measured and reported on in similar terms as financial reviews.

While most of these plans also have a social and animal welfare component, here we are focusing on the impressive steps some food companies are taking to reduce their environmental footprints.

Plastic free

Charoen Pokphand Foods PLC (CPF)

has vowed to go plastic free by 2030 and reduce waste disposal at all its operations by 30 percent (relative to its 2015 baseline) by 2020. Instead of using plastic bags, in 2006 CPF started using stainless-steel trucks to transfer products in its integrated broiler business. This, according to the company's annual financial reports, has reduced its plastic usage by 4,300 tonnes and greenhouse

gas emissions by 29,000 tonnes.

In 2013, the company replaced plastic feed bags with bulk feed tanks. By 2018, this had resulted in a 62 percent reduction in the volume of plastic used in its Thai operations and a 31 percent reduction in its foreign operations. The company in effect was able to remove 12,400 tonnes of plastic from its operations, translating into a greenhouse gas saving of 36,600 tonnes of carbon dioxide per year.

CPF has also developed eco-friendly packaging and in 2015 became the first Thai company to use such trays in chilled raw chicken and pork products. In 2018 this allowed the company to use 60 tonnes less plastic in packaging, which is equivalent to 132 tonnes of carbon emissions.

Deforestation free

Acknowledging the impact of deforestation on climate change, CPF is training its employees and suppliers to make the most of their natural resources and is also partnering with various public and civil-society sectors to help conserve and restore natural resources within and outside the boundaries of its

COUNTRY BIRD HOLDINGS | CBH has established a biogas facility at one of its processing plants, which has slightly reduced its dependence on the national grid and resulted in water savings by purifying run-off



plants and farms. The company claims it has so far restored 1,613 hectares of mangrove and watershed forest.

Multinational giant **Cargill**, meanwhile, is following this example. Earlier this year, the company published various policies and action plans to ensure company expansions are not at the expense of forests.

Heather Tansey, Cargill sustainability director for animal nutrition and North American protein, explained that corn, soy and wheat constitute a large component of poultry feed, so when their poultry supply chains are located in areas that are high-risk for forest land use conversion for feed, they use their new policy to reconcile environmental



and economic decisions to produce food that is sustainable and nutritious for both people and the planet.

But Cargill, like many other feed companies, is also contributing to sustainable production by creating balanced feed formulas that reduce wastage. “Sound animal stewardship practices and proper nutrition are not only key factors in raising healthy animals and reducing the production impact to the environment, it’s also simply the right thing to do. Healthy animals are more efficient in terms of growth and feed use,” Tansey said.

Besides this, Cargill is taking efforts to enhance farm management through, for example, the use of energy efficient

heating and ventilation systems using renewable energy.

Biogas production

RCL Foods, which has more than 240 operations across Africa, made headlines when in 2017 it established Africa’s largest biogas plant in Worcester, South Africa. The plant has allowed the poultry production facility to reduce its reliance on the national grid by more than 30 percent, while providing 90 percent cleaner water, which is reused on the site.

The success of the project has spearheaded the development of a similar, but even larger waste-to-value

“The plant has allowed the poultry production facility to reduce its reliance on the national grid by more than 30 percent, while providing 90 percent cleaner water, which is reused on the site”



RCL | RCL FOODS has established the biggest biogas facility in Africa at one of their plants in South Africa

plant at the firm's Rustenburg chicken-processing facility this year. The company aims to generate 50 percent of its own electricity by 2025 and over the same period reduce its reliance on coal by 50 percent.

As one of the top 100 companies on the JSE (Johannesburg's stock exchange), RCL Foods has taken part in the Carbon

Disclosure Project (CDP) – a UK-based organisation which aims to make publishing carbon emissions a business norm for companies around the world – for a number of years. They scored the highest in South Africa's food, beverage and tobacco sector in the CDP's 2018 climate change survey, achieving an A- score for the second year running despite a stricter scoring system being implemented.

"Sustainable production is no longer a nice-to-have, but a business imperative, which is why RCL Foods is working tirelessly to come up with creative solutions to reduce waste, consume less water and fossil-fuel-based energy and do more with what they have," Etienne Thiebaut, group sustainability executive at RCL Foods, told Poultry Digital Magazine.

Measurements and behavioural changes

Country Bird Holdings (CBH) is showing what can be done with small interventions and behavioural changes. Since launching its sustainability programme five years ago, the company has managed to increase slaughter volumes by about 10 percent without electricity or water consumption increasing linearly at its processing plants.

Marthinus Stander, CEO of CBH, says the company's efforts

“Water usage has been reduced from 20 to 15 litres per processed bird, thanks to awareness campaigns”

measurements are taken daily at our operations and reported monthly to the company at large.”

While it’s still early days for the programme, the company has managed to reduce its energy usage through the installation of power correction factors and phase balancing equipment, with a reduction in diesel usage achieved through the replacement of old generators with diesel rail engines that are more fuel efficient.

Water usage has been reduced from 20 to 15 litres per processed bird, thanks to awareness campaigns whereby

started with the installation of meters to monitor water, electricity and fuel consumption, followed by staff and supplier education:

“Measurements are extremely important, as you need to create a baseline against which company progress can be measured. To allow quick reaction to deviations,

visual materials were placed in all the company’s processing operations to educate employees about the importance of water conservation. The company also invested in equipment that is more water efficient.

The company is currently installing LED lights in all its facilities to further reduce its energy footprint and is evaluating the viability of establishing another biogas facility. “We have established a biogas facility at one of our processing plants, which has slightly reduced our dependence on the national grid and resulted in water savings by purifying run-off, which now can be used as grey water,” says Stander.

Stander points out that the idea was not to merely to “tick boxes”, but to create interventions with lasting results: “The achieved successes should then set the standards for what should be achieved tomorrow.”

While the company’s suppliers have to adhere to strict production protocols in terms of animal welfare and waste management, systems have not yet been introduced to motivate more sustainable practices in the supply chain – though that’s next on Stander’s agenda.

“We would need to find a way to monitor on-farm environmental practices if we want to expand our efforts to suppliers,” he says. “So far, we have run awareness campaigns to motivate producers to reduce their environmental footprint. This not only makes sense from a conservation point of view, but also a business point of view, since efforts to reduce carbon emissions and water usage usually translate into business savings.” **PD**

EggTester.com

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Measures the height of egg albumen and allows you to manually determine the Haugh unit



Egg Force Reader

Measures eggshell destruction strength



Egg OR Candler

Portable LED battery/ mains operated Egg Candling Lamp

www.eggtester.com



Are organic farms more sustainable?

There are conflicting opinions over which farming system delivers the most sustainable method of poultry farming – and much of this is due to the many different definitions of “sustainable”

Words Dr Lauren Edwards

When comparing the sustainability of conventional and organic poultry farming systems, most people will have an opinion on which approach they think is better. Some may view the impressive efficiency of conventional indoor systems as more sustainable in terms of optimised output and business practice, while some may view the “naturalness” of organic systems as best for the environment and thus more sustainable from the point of view of ecology and resource management. However, the findings of a recent study suggest that neither is clearly better than the other, and the solution may lie in combining the best aspects of both systems (Animal (2017), 11:10, pp 1839–1851).

Determining the sustainability of a farming system is a complex procedure. Not only must the researchers consider the impacts of each system on the environment and animal welfare, but also the impacts on economic indicators, productivity and public health throughout the entire production chain.

According to the researchers who conducted the study, a system can be considered sustainable if “the current generation can have its needs met without compromising the ability of future generations to have their needs met.” The definition of what organic poultry farming means in practice varies between different countries, but it will generally require the birds to have outdoor access, low stocking densities, an organic diet and alternative treatment methods for disease that do not use chemicals. Laying hens are also not permitted to be beak trimmed. A brief comparison between the sustainability of organic and conventional poultry production systems, as determined by the study, is presented in Table 1.

It’s clear that rating a system as sustainable or not is no simple matter, and really depends on which aspects of sustainability are considered to be most important. Other studies have investigated the sustainability of organic farming and



have concluded that organic farming can be somewhat sustainable, particularly in relation to the reduction in chemical use. However, there are very few studies that investigate all aspects of sustainability together and, as there are so many different ways of measuring sustainability, it can be difficult to compare these studies to get a consistent answer.

Many of the negative environmental impacts of organic farming stem from the reduced efficiency that occurs when slower-growing breeds are used for meat production, and when the birds are allowed to range outdoors. The additional energy required to explore, forage and thermoregulate reduces their feed conversion efficiency, meaning that more feed is required to achieve optimal live weights. However, these behaviours are beneficial for bird welfare, and the additional exercise is associated with better leg health in broilers.

Aspect of sustainability	Organic vs conventional poultry farms
Environment	<p>Both systems had an equal environmental impact in terms of:</p> <ul style="list-style-type: none"> • Global warming potential (based on greenhouse gas emissions) • Culling male chicks in the egg industry (waste) <p>Organic systems had a greater environmental impact in terms of:</p> <ul style="list-style-type: none"> • Consistently lower productivity • Higher potential for acidification and eutrophication (due to lower productivity) • Higher land use • Higher energy use (related to diet) • Slower-growing broiler breeds are less feed efficient <p>Organic systems had a lower environmental impact in terms of:</p> <ul style="list-style-type: none"> • Lower use of fertilisers and absence of synthetic fertilisers
Animal welfare	<p>Organic systems had better animal welfare in terms of:</p> <ul style="list-style-type: none"> • Better leg health in broilers (due to slower-growing breeds) • Improved stress resistance in broilers <p>Organic systems had poorer animal welfare in terms of:</p> <ul style="list-style-type: none"> • High rates of worm infections • High rates of feather pecking (birds are not beak trimmed)
Productivity	Organic systems had consistently lower productivity
Economy	<p>Organic systems had better economic outcomes in terms of:</p> <ul style="list-style-type: none"> • Higher farm gate prices • Higher farm income
Public health	<p>Organic systems were safer in terms of:</p> <ul style="list-style-type: none"> • Fewer multidrug-resistant bacteria are found on organic farms <p>Organic systems were less safe in terms of:</p> <ul style="list-style-type: none"> • Higher microbial contamination of broiler meat • No difference in microbial contamination of eggs

TABLE 1 | Some of the main differences in sustainability between organic and conventional systems

While the reduced stocking densities and the ability to range outdoors are beneficial for bird welfare, this does not mean that organic systems are performing optimally in this regard. In general, the same welfare problems that exist in conventional free-range systems are present in organic systems. The rate of internal parasite infection is higher in organic systems, and there are fewer medical treatments available for producers to combat this issue. Much of the health management on

organic farms tends to be preventive in nature, focusing on good hygiene and biosecurity rather than administering treatments.

A further welfare concern found on organic farms relates to feather pecking. Organic systems protect laying hens from the acute pain and mutilation of beak trimming by banning this practice. However, this can have long-term repercussions for hen welfare due to the increase in feather pecking that occurs for loose-housed flocks with intact beaks.

The authors of one study suggest that combining the best parts of organic and conventional systems may be a feasible means of improving sustainability. A hypothetical example in the poultry industry might involve compromising on the percentage of poultry feed that is required to be organic. Sourcing organic feedstuffs locally requires less transport, but also limits the variety of feed ingredients that are available to producers. This creates the potential for suboptimal nutrition and poor feed conversion in commercial organic poultry if not managed properly. By compromising and allowing a small percentage of the feed to be sourced from non-organic and/or non-local sources, the nutritional content of the feed can be optimised while still maintaining the majority of the benefits of organic feed production.

An alternative method of improving the sustainability of organic farms would be to introduce mixed farming to these systems; this would involve adding another type of farming to the organic poultry operation, such as planting an orchard. This would increase the amount of produce that could be grown on the same area of land, and the poultry could graze on the pasture, remove insects and provide fertiliser for the trees through their manure. While mixed-farming systems do not address all of the concerns associated with organic farming, a recent study did find that allowing broilers to range in an olive orchard created a more sustainable system than conventional free-range or an intensive indoor system (Rocchi et al, 2019).

Decisions by members of the public to support organic farming are made for a variety of reasons. Most consumers who purchase organic products do so for health considerations, led by the perception that organic eggs and poultry meat are healthier due to the lack of added chemicals or genetically modified feed ingredients. There are mixed views on whether organic poultry meat and eggs actually taste better, but the meat produced from organic broiler systems is usually of better quality. There is also the feel-good factor that people get from supporting local farmers and buying ethically sourced produce.

In conclusion, the topic of sustainability is a complex one and there is no simple answer regarding which production system is more sustainable for poultry. There are advantages and disadvantages to both, and any expression of preference for one over the other will depend on who is doing the assessment and where their priorities lie. However, the increasing popularity of organic poultry meat and eggs demonstrates that these farming systems are here to stay, and future research should investigate how to further improve their operation to ensure optimal bird welfare, sustainability and farm productivity. **PD**

Focus on Nigeria

How Nigeria's young poultry farmers are turning the problem of waste on its head

Words Efua Konyim

With an expanding poultry sector comes an increasing problem – bird waste. But with a wave of young, innovative farmers joining the industry, Nigeria is turning this issue to its advantage.

The populous city of Ibadan in Oyo State, Nigeria, could rightly claim to be the country's poultry capital, because a good number of large- and medium-sized poultry enterprises are clustered around it. Indeed, according to some of the city's poultry farmers, at least 60 percent of all the poultry production in Nigeria is done in and around Ibadan.

As in most parts of Nigeria, the majority of recent entrants into the industry are young graduates, and that can be seen as an indication of poultry's great potential in this part of the world. Nevertheless, Nigeria's poultry industry faces quite a few challenges, the most widely discussed being the high cost of feed – poultry farmers spend over 70 percent of their budgets on feed. But another issue that has become increasingly prominent in recent years is the problem of waste disposal.

A recent study showed that only 46 percent of poultry manure was managed in a sound environmentally conscious manner. Fortunately, however, there

are signs that safe disposal methods are gaining currency, especially among young farmers.

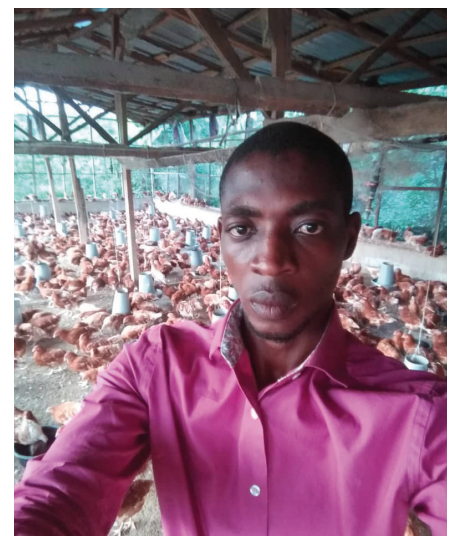
According to the World Bank, Nigeria produced 201,493 tonnes of poultry meat in 2017 out of a total meat production of 1.4 million tonnes, and 510 tonnes of eggs. As is the case in Ghana, egg production comprises a substantial portion of the industry as a result of many poultry farmers deciding to weather the storm of a massive influx of cheap frozen poultry meat by "specialising" in egg production.

Local production, meanwhile, falls far short of demand. Economists and policymakers agree that poultry farming has the potential to solve the problem of meat supply. Beef currently comprises 80 percent of meat consumed by Nigerians. But due to the scarcity of grazing lands, there has been increasingly high levels of violence between herdsmen and local communities, resulting in hundreds of deaths within the last year alone. In spite of the challenges it faces, poultry production is seen as a less contentious supply of protein and is set to increase substantially over the next few years.

The average age of a Nigerian poultry farmer is just over 40. In the last few years, a large number of even younger

Nigerians with tertiary qualifications have entered the industry, who see poultry farming as a profitable venture, and who appreciate the importance of modern technology and the acquisition of skills. They are not only showing a greater appreciation of better waste management practices but are also managing their waste profitably.

Although many poultry farmers are deploying modern technology in their operations, a good number have fallen behind in the sound disposal of waste.



OPPORTUNITY | Emmanuel Akintola, CEO of Y2F Farms says that poultry waste can increase profits





NOTHING WASTED | In Nigeria, Ogochukwu Maduako sees discarded egg shells as a valuable resource

Most of the waste material – including droppings, dead birds from mortalities, hatchery waste, litter, offal, water from processing waste and bio-solids – are burned, dumped in pits and wastelands or flushed into streams and other bodies of water. A 2016 study, *Livestock management practices in Oyo State* by Abiola and Olaogun, found that the “larger percentage of the farms do not have and environmentally friendly animal waste management system, and the implication is widespread air, water and land pollution”. Walter Abiola, an environmental impact consultant, says that “it is unacceptable that the farms here are modern operations, run by graduates, yet do not manage their wastes properly.”

There are clear signs that this situation is changing. Many young farmers appreciate the link between sound environmental management and good-quality products. Emmanuel Akintola, CEO of Y2F Farms, a sizeable enterprise, says that poultry waste presents an opportunity to increase profits. It is possible, he says, to earn good money by processing waste for sale. Many young farmers are taking advantage of this, he says.

Ogochukwu Maduako has recent-

“Many young farmers appreciate the link between sound environmental management and good quality products”

ly gained popularity as a prominent recycler in Nigeria. She holds a degree in agricultural economics and extension from Abia State University and an MSc in international economics from Rivers State University, and in 2017 she formed a company, Ingenious Farm (iFarm), to buy eggshells from poultry hatcheries, and other commercial users of eggs, for processing. Since then, she has processed hundreds of tonnes of eggshells into fertiliser and calcium supplement for layers, which she has sold to 50 agricultural enterprises. She is also producing scouring powder and has a few other products on the way. She describes the eggshell as a “multipurpose goldmine,” and is committed to creating many jobs across Nigeria.

Her main challenge is trying to change people’s attitudes and habits in a traditional society. “It’s not easy trying to sell a new idea to a market that is used to an old, existing idea.” She sees a bright future for her company. “iFarm is certainly going global. The recycling of eggshells is not just a challenge we face here in Nigeria but rather it is a challenge faced by other countries. We are open to discussions from potential partners in neighbouring countries and elsewhere.”

Benedicta Aigiomawu CEO of Westlands Agro Farms, believes that although poultry waste has posed an environmental problem in the past, it now presents good opportunities. “Quite a number of farmers are processing their waste for sale to crop farmers,” she says. “A significant number of farmers also sell waste products to fish farmers.”

Benedicta, who also runs Profitable Poultry Farming Nigeria, an online platform for poultry farmers and industry professionals, says: “These days, poultry waste presents an opportunity for making money.” Some poultry farmers, she says, use their waste to breed feed supplements like maggots for sale to fish farmers. A 2011 study by S. O. Ayoola found that “poultry hatchery waste can best be utilised when formulated with compounded feed at a ratio of 25 percent to 75percent.” In *livestock Wastes: Fish-Wealth Creation* (Conference: Water Resources Management 2011), A. A. Adeumi, I. K. Adewumi and V.F. Olaleye propose that poultry and other livestock wastes can support aquaculture.

Yemi Adesina, a prominent livestock



IFARM | Ogochukwu Maduako developed a scouring scrub solution from hatchery egg shells



EGG SHELLS | Ingenious Farms produces calcium to supplement feed and for use as a fertiliser

farmer based in Ibadan who runs training courses in West Africa, says that sound waste-management practices have arrived in Ibadan at just the right time. “Many large livestock farms were located on the outskirts of Ibadan, where they did not pose much of a threat,” he explains. “Today, due to increased building activity, these areas are closing up, and poultry waste products could have polluted rivers and lakes and water supply systems. Thankfully, good waste management practices are becoming the norm. We even have a few enterprises that are processing poultry manure into pelletised feed for fish.”

Poultry farming in Ibadan and its environs, which accounted for a substantial part of national poultry output, was historically done without much regard for sound waste management. Fortunately, in the last few years poultry farmers have been seeking to make extra income from their waste, and innovative entrepreneurs like Ogochukwu Maduako are making sure that waste is put to the best possible uses, both for the environment and the economy. **PD**

Poultry companies vow to reduce plastic use

Plastic pollution is one of the planet's most pressing problems – and several big-name poultry players are taking steps to reduce their contribution

Words Melanie Epp

In 1907 the Belgian chemist Leo Baekeland created one of the first polymeric mouldable materials, which he soon marketed as Bakelite – the product that initiated the plastic revolution. In just over a century since then, global production of plastic products has increased exponentially, with some 381 million tonnes produced in 2015. Plastics, though, have a damaging impact on the health of the world's oceans and wildlife, a fact that we're all increasingly conscious of thanks to widespread media coverage of the issue in recent years. In response, many companies around the world have vowed to reduce their use of plastics, and in some cases, switch to bio-based and biodegradable plastics. Poultry companies are following suit.

“Global production of plastic products has increased exponentially, with some 381 million tonnes produced in 2015”

Moy Park launches initiative to reduce plastic use

Moy Park, Europe's eighth-largest poultry company, recently pledged to reduce its overall use of packaging. The move is part of the company's wider business sustainability and environmental commitments, explained Matt Harris, head of packaging for the firm.

“Through Moy Park's 'Remove, Reduce, Recycle and Research' strategy, we wanted our targets to be ambitious and industry leading,” he said. “To give one example, we plan to reduce the overall use of packaging by 5 percent year-on-year while also increasing the percentage of recyclable packaging by 5 percent.”

The company expects its commitment will not only support its customers, but will also increase plastic and recycling awareness. Its first step will be to remove unnecessary plastics, including avoidable single-use plastics, which are currently used in their offices and restaurants. It has committed to discontinuing their use by 2020. Currently Moy Park uses a variety of packaging formats in a combination of materials.

“We are also focusing on innovative new packaging, R&D and delivering accurate, clear recycling messages, collaborating with academics and supply-chain partners to develop sustainable packaging across our product portfolio,” Harris added. “So, while plastic will still have a significant part to play in the containment, protection and preservation of chicken in the future, we want to simplify the types of plastic we use, and ensure they are able to be easily recycled.”





“The big challenge will be to develop flexible film formats that deliver the functional requirements expected by customers and consumers, balanced with ease of recycling at end-of-use,” he added.

Moy Park isn't the only poultry business focusing on reducing plastic. In Thailand, food-processing company **Charoen Pokphand Foods (CPF)** has made a similar pledge, announcing a sustainable-packaging policy to reduce its global footprint. The company has not only promised to reduce its overall use, but has also said that all plastic packaging will be reusable, recyclable, upcycled or compostable by 2025 in its Thai operations, and by 2030 globally. In a recent press release the company explained how it plans to achieve this goal, stating that it has developed eco-friendly packages, including plant-based bioplastic trays made from natural resources. According to CPF, in

2015 the company became the first in Thailand to use polylactic acid (PLA) trays for chilled raw chicken and pork products.

In the fast-food sector Kentucky Fried Chicken (KFC) has also taken up the challenge, announcing that all plastic-based, consumer-facing packaging will be recoverable or reusable by 2025. This promise was made across its global brand.

Retailer Waitrose removes black plastic from products, including poultry

British retailer Waitrose & Partners recently hit its target to eliminate the use of black plastic in its own-label products. In 2018 alone, the company removed 1,300 tonnes of the difficult-to-recycle black plastic, used to package fresh meat, fish, poultry, fruit and vegetable products.

“In the fast-food sector Kentucky Fried Chicken (KFC) has also taken up the challenge, announcing that all plastic-based, consumer-facing packaging will be recoverable or reusable by 2025”

The retailer is now halfway to achieving its goal of removing black plastic from all of its branded products by the end of 2019, said Hannah Chance from the Waitrose & Partners communications team.



“The difficulty with black plastic in particular is that it’s coloured using carbon black pigments, resulting in a by-product that is not easily sorted at recycling plants”

porate social responsibility (CSR) in health and agriculture for Waitrose & Partners. “While removing it we have also taken the opportunity to reduce the amount of plastic of any colour by removing trays from fruit and veg like apples, broccoli and pak choi.”

In 2019, the company plans to work further to determine which plastic packaging can be removed without decreasing product quality or reducing overall shelf life, to make sure it doesn’t increase food waste. Waitrose chicken, meanwhile, is now packaged in a clear tray, said Chance.

Plastics company develops plant-based solution

It’s not just end-users who are making big promises. Plastics companies are also taking up the challenge. In the US, [Sealed Air](#) has partnered with [Kuraray America](#) to develop a

The difficulty with black plastic in particular is that it’s coloured using carbon black pigments, resulting in a by-product that is not easily sorted at recycling plants. As a result, the packaging often ends up in landfills.

“Eliminating black plastic is a priority for us,” said Tor Harris, head of cor-

porate social responsibility (CSR) in health and agriculture for Waitrose & Partners. “While removing it we have also taken the opportunity to reduce the amount of plastic of any colour by removing trays from fruit and veg like apples, broccoli and pak choi.”

In 2019, the company plans to work further to determine which plastic packaging can be removed without decreasing product quality or reducing overall shelf life, to make sure it doesn’t increase food waste. Waitrose chicken, meanwhile, is now packaged in a clear tray, said Chance.

plastic-based food packaging called [Plantic](#). Plantic materials are currently being used to package perishable foods such as poultry, beef and seafood in the US, Canada and Mexico.

Sealed Air isn’t just looking at new plastics, though. Ron Cotterman, vice president of sustainability and innovation at the company said it is also looking at alternatives for recycling and recovery technologies.

While the new plastic is not being widely used at the moment, Cotterman said the company is working closely with Kuraray to scale up and meet wider needs, including replacing thermoform trays and multi-layer laminate used to package fresh and processed products.

Cotterman said the new plastic is functional, cost-competitive with the products it replaces and comparable in terms of performance. These are barrier products that prevent gases and oxygen from moving into the package, he explained.

Plantic is a starch-based solution that is sourced from high-amylase corn, a type of maize not used for human consumption.

“We’re working with different organisations to get the material accepted for recycling,” he said. “We’re in the middle of that process right now.”

In order to meet US demand for Plantic products, Sealed Air plans to spend \$24 million to upgrade its Simpsonville, South Carolina facility. The expansion is underway and production is scheduled to begin in the second quarter of 2020. Kuraray is also investing in expansion to support the project, putting approximately \$15 million into installing plant-based high-barrier resin production and supporting capabilities in Houston, Texas. The resin plant is scheduled to be completed at the end of September 2019 and will begin operating in early 2020. **PD**

Introducing...

The helmeted guinea fowl

Words Ryan Johnson

The guinea fowl is a breed of poultry originating in the arid region south of the Sahara in Africa. The helmeted guinea fowl is the best known and most widely domesticated type of guinea fowl and gets its name from the large, bony crest on its head.

Not to be confused with a wild turkey, which originated in North America, this guinea fowl is a medium-to-large sized bird, weighing between one to three kilograms. They do not fly well, due to their short wings, but make up for their relative inability for flight with an endurance that can see them travelling on foot up to 6 miles in a day.

They also have surprising agility and a boldness not suggested by their short stature. In particular, they have a loud, piercing cry that they will repeat for extended periods if alarmed, which should give curious poultry keepers pause before purchasing keets (guinea fowl chicks).

In fact, it is the piercing cry and boldness of the guinea fowl which encourages some to incorporate these birds into their backyard flocks, since “guineas” will sound the alarm when intruders are near so as to scare off predators and protect the flock.

Many poultry keepers, however, have reported that guineas will not only attack intruders, but will at times try to pester fellow birds by “playing chicken” with birds bigger than they are, such as turkeys, which become easily annoyed.

In addition to their usefulness as watchdogs, guinea fowl will also eat large quantities of insects – ticks in particular – making them excellent for pest control. Some keepers have even reported that guineas will eat snakes and small mammals. **PD**



YOUR QUESTIONS

Poultry professional Mike Colley answers the best questions from The Poultry Site community



Got a question? Email newsdesk@5mpublishing.com | Twitter [@thepoultrysite](https://twitter.com/thepoultrysite) | Facebook [/ThePoultrySite](https://www.facebook.com/ThePoultrySite) | Forum forum.thepoultrysite.com | Post Unit 10, Southill Business Park, Cornbury Park, Charlbury, Oxford, OX7 3EW

Q: What are your top tips for improving the sustainability of keeping backyard chickens??

A: This is a surprisingly complex question and it's easy to be misguided into thinking what you are doing is sustainable and helping the environment. The most sustainable and environmentally friendly option as far as eating eggs and poultry is concerned is to reduce your consumption and find plant-based and preferably raw alternatives. If you have your heart set on backyard poultry, consider why and how you can make your enterprise contribute to the environment rather than detract from it. Firstly, consider housing: chickens will live happily in any draught free "box" with a perch, so rather than buying a purpose-built enclosure consider a second hand shed or converting part of an already existing outbuilding; maintain and reuse rather than buying new.

Feed is going to be your second costly input, so consider growing as much of it yourself as possible. Peas, cabbages and salad leaves will help offset the amount of specific poultry feed you'll need. Buy all your supplies in bulk to reduce packaging; feed is usually good for three months. Commercially bred White Leghorns are the most efficient layers, rearing birds for meat, unless it's

your surplus cockerels, is very difficult to make sustainable as the inputs are so high compared to other sources of good protein. Lastly don't waste anything and when your layers reach the end of their productive life, replace them and compost the carcasses. Also, the more chickens you have the more efficient everything becomes – use your birds to clear ground and control insect pests, rather than using pesticides.

Q: I'm thinking about getting some Japanese quail. Are they difficult to raise compared to chickens?

A: Quails are a whole different ball game to chickens. They are literally tiny and their chicks are miniscule. They have different feeding requirements and can fly within a few days of hatching. Quails cannot tolerate cold like chickens, are very difficult to catch and their explosive take off to flight can often result in them banging their heads on the top of the cage and killing themselves. What I would recommend is doing a lot of research and visiting some experienced quail keepers. Apart from all the drawbacks they are great little birds,

prolific egg layers and a worthwhile addition to any menagerie.

Many commercial quails are kept in battery cages and I imagine most of you would want to avoid that, so either a shed or an aviary with a soft netted ceiling. To avoid smothering, where birds pile on top of each other and suffocate, keep them in small groups. Being able to walk among them from day one will keep them calm and providing hiding places like pipes and boxes will help. Have you ever seen a wild quail? No, neither have I. They are a rare, secretive summer visitor to the UK and will live amongst tall grass and cereals, the best enclosures mirror the animal's preferred wild habitat, as large-scale farmers are now discovering with chickens. Inevitably you will make mistakes and suffer losses, but every loss is a lesson learned, so get the basics right and persevere. **PD**

Mike Colley

Mike has had an interest in all things chicken since he first asked his mum on the school bus "what colour eggs do different coloured chickens lay?" aged five. Over the next 45 years Mike developed his knowledge of poultry: in his backyard, breeding, hatching, showing and selling chickens, as well as in the commercial poultry industry as an Area Manager and, latterly, a Research Manager.



EVENTS

Poultry events from around the globe

MAY

South West Chicken Association (SWCA)

Date: 14 May 2019

Location: Congresbury, UK

The SWCA will bring in experienced speakers to discuss what it takes to produce high quality poultry in the current economic and political climate. It is a free conference open to all who are associated with the industry, as well as their guests.

www.poultryconference.com/SWCA/

Panafrican Poultry Conference (PPC)

Date: 13-17 May 2019

Location: Lome, Togo

Several poultry experts, researchers, scientists and industry from different parts of the world are attend this conference, which aims to address the challenges of the poultry industry in Africa.

www.wpsa.com/index.php/47-news-latest/news-wpsa/318-pan-african-poultry-congress-ppc

IFFA

Date: 4-9 May 2019

Location: Messe Frankfurt, Germany

The internationally renowned IFFA in Frankfurt am Main aims to provide networking opportunities for professionals in the industry, retail trade and butcher's trade sectors of meat production.

iffa.messefrankfurt.com/frankfurt/en.html

JUNE

VIV Turkey

Date: 13-15 June 2019

Location: Istanbul, Turkey

VIV Turkey represents every part of the



GDANSK, POLAND | The European Symposium on Poultry Nutrition will be held in Gdansk, Poland from June 10-13, 2019

meat production process and aims to facilitate the transfer of knowledge and technology between Turkish poultry sector professionals by creating an international platform that will foster development for all.

www.vivturkey.com

European Symposium on Poultry Nutrition

Date: 10-13 June 2019

Location: Gdansk, Poland

These highly regarded symposiums are known for their role in facilitating the exchange of knowledge and information on poultry nutrition challenges in Europe. This year's ESPN provides attendees with the opportunity to present scientific and technical achievements in poultry nutrition how to put them into practice.

www.wpsa.com/index.php/calendar-home/calendar/25-20th-european-symposium-on-poultry-nutrition

VICTAM International

Date: 12-14 June 2019

Location: KoelnMesse, Cologne

The exhibition is a "one stop" show for the decision-makers in the livestock industry. The event also focuses on a series of high quality industry conferences and business matchmaking events with colleagues and clients.

victaminternational.com

European Symposium on the Quality of Poultry Meat

Date: 23-26 June 2019

Location: Izmir, Turkey

This symposium will provide a platform for the exchange of new ideas, information on the subject of poultry meat quality and for building and strengthening professional relationships.

www.eggmeat2019.com

PAG Asia

Date: 6-8 June 2019

Location: Futian shangri-la, Shenzhen, China

PAG ASIA 2019 in Shenzhen, China features some of the best minds in the ag-genomics industry to share the latest information and scientific breakthroughs.

www.intlpagasia.org/2019/index.php/en

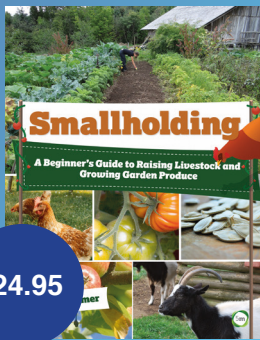
Livestock Philippines Expo

Date: 26-28 June 2019

Location: World Trade Centre Metro, Manila, Pasay City, Philippines

The Livestock Philippines Expo is the Philippines premier event for the livestock, feed milling and meat industries.

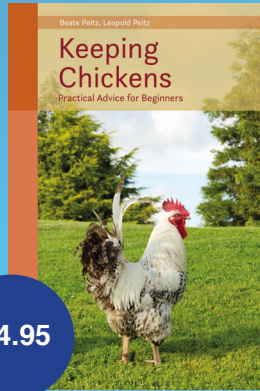
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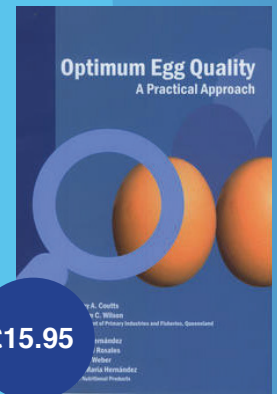
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