

# POUL FINANCIA DE RIVER DE RIVE

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# Uncertainty continues for Aussie egg farmers

ANGRY Australian egg farmers are dissatisfied the animal welfare guidelines, released on Thursday August 18, fail to allow the option for conventional cage-egg production to continue for a further 24 years.

The standards and guidelines are an important issue for egg farmers, impacting their livelihood and profitability.

Egg Farmers of Australia and state farming organisations will carefully consider the document to progress a favourable outcome for industry.

'Animal Welfare Standards and Guidelines for Poultry' include the care of layer hens.

Industry leaders called for the federal and state governments to consider restructure and exit packages to help assist farmers should they be required to transition from conventional cage-egg farming before 2046.

Conventional cages contribute 50 percent of the nation's egg production.

Egg Farmers of Australia have not had any consultation on structural adjustment or exit packages and nor was this discussed with industry by those engaged to write the Regulatory Impact Statement.

Egg Farmers of Australia chief executive officer Melinda Hashimoto said the guidelines had taken over seven long years to process and, given industry had not been listened to, they are a slap in the face for the nation's hardworking cage egg farmers.

"Unfortunately, the review totally ignored evidence on why conventional cages should continue until 2046," Mrs Hashimoto said

From the original submission, it was explained that you can't close down part of a business due to the time cages were built and then come back to shut more sheds erected at a different time in later years.

"The document states that conventional cage farming must cease, with a timeline suggested as early as 2031 and at the latest by 2036," Mrs Hashimoto said.

"It's 10 years too early and could drive many family egg farmers to the wall.

"This is because bank loans can spread over 30 years for existing cages and equipment.

"Farmers now don't have time to pay off that debt before they must



With the release of the poultry industry standards and guidelines, the future of Australia's egg supply could be under threat

dump their cages."

In agriculture, the lifecycle for assets to be written off is 20 years and it is unprecedented that government would consider closing farmers' businesses in a short timeframe that could possibly be only nine years.

Egg Farmers of Australia chair Bede Burke said, "A long lead-in time to phase out cages was required to ensure farmers could exit without debt."

"Given our submission has been ignored by current agriculture ministers across the nation, state agriculture ministers need to work through how an industry crossing borders can deal with changes to state legislation on the standards and guidelines.

"We could end up with different standards in different states, which is not ideal and could have been avoided through the Agriculture Ministers' Forum advising a timeline for implementation.

"Given that farmers borrow millions of dollars from banks to invest in cage eggs, the new Animal Welfare Standards and Guidelines for poultry fail to allow them time to pay off current debt and reinvest in alternate farming

methods," Mr Burke said.

Mrs Hashimoto warned the move would contribute to a shortage of eggs in Australia in the future.

"According to the CSIRO, 40 percent of egg sales in Australian supermarkets were caged eggs." "Without them, Australian families would face less choice, a shortage of eggs and higher egg prices.

"In comparison to barn or free range – cage eggs are cheaper and have the lowest carbon footprint of any egg farming method," Mrs Hashimoto said.



Dr Tamsyn Murray from Josh's Rainbow Eggs with the Poultry Grad event attendees.

# **Poultry Grad and Ideas Exchange**

IN late July, Poultry Hub Australia had the pleasure of hosting 15 eager PhD students at Poultry Grad, which was held in Geelong, Victoria.

We started day one with talks from Mark Dunlop from the Queensland Department of Agriculture and Fisheries Queensland, Kat Matthews and Megan Craven from Deakin University and Matt Hilliar from Turosi.

The speakers gave great advice on life after the completion of their PhDs – the opportunities and the challenges.

We then put the students to the test with an activity called 'poultry bucks'.

This activity comprised of the students being given the challenge of completing a 40-second elevator pitch on their PhD projects.

They were all given some poultry bucks and had to decide whose research was worthy of investment.

Shiva Greenhalgh from the University of Sydney received the most investment and was declared the winner.

Congratulations Shiva!



by **TAMSYN CROWLEY**Director

We then discussed the importance of being concise and clear when discussing research with stakeholders.

On day two, we headed on-farm to Josh's Rainbow Eggs, where Tamsyn Murray gave a fantastic tour and explanation about the business, the challenges and the future.

The students took the opportunity to ask some excellent questions and it was wonderful to see the farm in operation.

We received fantastic feedback following the event, with the students commenting that speaking to people in the industry directly was 'invaluable' and that it was a 'great experience'.

We hope the networks the students have built



with each other will help them through the completion of their PhDs and into their careers.

A massive thank you to the speakers and Tamsyn Murray for contributing to the event.

The Ideas Exchange – a fantastic opportunity

for industry personnel and researchers to come together to develop relationships and collaborations that benefit the entire poultry industry – will be held on October 11-12 in Melbourne.

We are looking forward to catching up with you in person finally – sharing our achievements and exchanging new ideas for the future of the industry.

Registration for the conference is by invitation only, so if you are interested in attending or want to find out more, contact us at poultryhub@une.edu. au \$\frac{1}{2}\$



Dr Tamsyn Murray from Josh's Rainbow Eggs explained the farm's operations to the 15 students who took part in the Poultry Grad event.



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# NEWSPAPER

# **Poultry Industry Calendar of Events**

#### 2022

OCT 19 - Poultry Industry Golf Day, Sydney, Australia, info@ew-nutrition.

OCT 30- NOV 1 - Poultry Tech Summit, Altanta, US, www.wpsa.com

NOV 6-10 - SIMA Paris, France, en.simaonline.com

**NOV 8-10** – European Symposium on Poultry Genetics, Hannover Germany, www.espg2022.org

#### 2023

FEB 6-8 – Australian Poultry Science Symposium, Sydney Australia, www.apss2023.com.au

JUN 21-24 - European Symposium on Poultry Nutrition, Rimini Italy, www.wpsa.com

**SEP 4-8** – Congress of the World Veterinary Poultry Association, Verona Italy, www.wvpac2021.com

How to supply event details: Send all details to National Poultry Newspaper, PO Box 162, Wynnum Old 4178, call 07 3286 1833 or email: design@collins.media

poultrynews.com.au

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# Green poultry farming heats up

A NEW hybrid geothermal and solar energy system is set to dramatically reduce emissions and energy costs for many Australian poultry farms.

The University of Melbourne has teamed up with geothermal companies Ground Source Systems and Fourth Element Energy to create a hybrid geothermal and solar heating, ventilation and air conditioning system specifically for the poultry industry.

The project is funded through a \$318,000 grant from the Federal Government's Australian Renewable Energy Agency, which supports the global transition to net zero emissions by accelerating pre-commercial innovation.

The project will demonstrate how the energy demands of sheds can be coordinated with on-site renewable energy production, showing both economic and environmental benefits to farmers to further support the uptake of the technology across the industry.

The system includes a ground-source geothermal heat pump system and full-scale solar photovoltaic system with gas back-up, which can sup-ply the HVAC needs of poultry farms.

The first stage of the project will see a demonstration full-scale hybrid system installed and optimised for efficiency at the commercial poultry farm Bargo in Yanderra, NSW this year.

University of Melbourne Professor Guillermo Narsilio said the collaborators identified 827 poultry farms across Australia that meet the conditions needed to transition to hybrid geothermal and solar energy.

"Australia is in an ideal position to lead the development of this technology and reap the benefits in several intensive farming sectors," Professor Narsilio said.

"We have world-class engineering expertise, ideal solar conditions and the space to install geothermal systems.

"If we can achieve 15 to 20 percent market uptake in the Australian poultry industry, it would reduce at least one tenth, or 160,000 tonnes, of the industry's greenhouse gas emissions.



Professor Guillermo Narsilio in a geothermal plant. Image: Peter Casamento

ARENA chief executive officer Darren Miller said the project is expected to provide an important case study to drive uptake across the sector.

'Heat pumps represent a viable alternative to traditional heating systems in helping to reduce emissions from Australia's meat and poultry industry," Mr Miller said.

"Ground Source Systems is showing what's possible with the demonstration-scale project, and we're hoping that the valuable knowledge gained will encourage even the larger poultry companies to jump onboard and look to heat pumps as a viable solution to their energy needs and net zero goals."

Ground Source Systems director Brad Donovan said the team will produce a public report on how the Yanderra system operates, that sets out a clear cost benefit analysis for poultry farmers.

"We are also exploring ways that farmers can be assisted with the upfront costs of retrofitting hybrid systems," Mr Donovan said.

The team estimates the new system could reduce the sector's total greenhouse gas emissions by around one million tonnes - from 1.8 million tonnes to 0.8 million tonnes - per annum, with 100 percent uptake.

The hybrid energy costs for farmers would be between 75-90 percent less than existing systems, subject to the farm operation method, with installation costs likely to be fully recovered within three to six years.

Poultry broiler industry sheds require both heating and cooling - traditionally provided by a combination of LPGpowered heaters and evaporative coolers – at a combined annual energy cost of around \$80-100 million for chicken farms across Australia.

Bargo farm manager Simon Zerafa said, "We are excited about leading the way with this new technology and potentially expanding its use across more of our sheds."

"Another benefit of the system is that it will reduce chick mortality by removing the humidity associated with gas heating in existing systems."



Egg Farmers of Australia chief executive officer Melinda Hashimoto, Days Eggs managing director Dion Andary, Egg Farmers of Australia Queensland Board director John Coward, Egg Farmers of Australia chair and NSW Board director Bede Burke, Days Eggs technical director Anne Andary, Egg Farmers of Australia administration and engagement officer Kylie Jackson, and Egg Farmers of Australia South Australia and Tasmania Board director Ruth Drinkwater.

# **Industry representatives** gather at CEFASAT event

EGG Farmers of Australia Board and staff members, in conjunction with the Commercial Egg Farmers Association of South Australia and Tasmania and Australian Eggs were thrilled to host the CEFASAT meeting and dinner event on August 17, 2022 in South Australia's Barossa Valley.

Carolyn De Koning was the guest speaker at the meeting.

The event was attended by more than 40 people, with guest speakers from Thomas Elders Market presenting at the dinner.

Re-invigorating the group couldn't have come at a more important time, when states are now tasked with working with their agriculture



by **MELINDA HASHIMOTO** 



minister and departments on the Australian Animal Welfare Standards and Guidelines for Poultry process.

While in South Australia, Egg Farmer of Australia directors and staff, as well as Australian Eggs staff member Kelly Seagrave, had the opportunity to visit Days

Our travel group were

very appreciative of the time provided by Dion and Anne Andary and Jessica Spencer in showing us their facility.

EFA staff will be travelling to Canberra for Animal Health Australia meetings, then to Melbourne for a farm visit as well as Animal Health Australia and Ideas Exchange events in September and October. 🦫

# 34th Annual **Australian Poultry Science Symposium**

# APSS 2023 now open

THE Australian Poultry Science Symposium is the premier avian science conference in Australia and attracts delegates from across the country and around the world.

APSS 2023 will be held in Sydney from February 6-8 and will be returning to a face-to-face format.

Over 60 peer-reviewed papers and posters will be presented across the three-day event.

The online paper submission portal is open for a total of three months from July 8, 2022.

Anyone wanting to be included in next year's symposium, don't delay get your papers submitted as soon as possible.

Remember also that once your paper has been accepted, you must make the commitment to attend and present your paper at the conference. Authors who fail to register by the author registration deadline will have their paper removed from the program and will not be published the APSS proceedings.

**Key dates for authors** July 8, 2022 - paper submission portal opened.

Full paper submissions can be submitted by visiting our website, creating an account and uploading your paper to our online platform apss2023.com.au/papersubmission

October 7, 2022 - paper submission portal closes at 11.59pm Australia eastern daylight savings time.

This is the full paper submission deadline.

Acceptance of submissions made after this date will be at the discretion of the organising committee.

October 10, 2022 - online registration portal opens.

Credit card payment will be required when registering online.

If you are unable to register online or need to register prior to October for visa purposes, contact Benjamin or Jo-Ann Geist for a manual registration form.

December 12, 2022 - author and early bird registration deadline.

Registration to be completed by authors with accepted papers for presentation, otherwise they will be withdrawn from the program.

Note that pre-registration is encouraged and can be done via apss2023.com.au/preregistration prior to September 30.

For all enquiries, Benjamin contact or Jo-Ann Geist on 02 9351 1656, benja min.geist@sydney.edu. au or jo-ann.geist@ sydney.edu.au 🦃



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Our grandchildren should be able to eat and enjoy their scrambled eggs knowing they've come from laying hens living in high-welfare environments. We should expect and demand nothing less for them.



Shockingly cruel scenes such as this, in a very hot Bali, would not and should not ever be tolerated in Australia.

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## **Contact Brendon Cant**





Chickens destined for the table should lead a good life and we should read all about it.

# Animal welfare making headlines

HEADLINES can be odd things.

They can be informative.

They can be provoca-

They can be misleading. They can be clever. They can be stupid.

I've written plenty over my 40-plus year communications career, so believe me, I get it.

But I must say that occasionally some story headlines can still make me wonder why, or even how, they came to pass.

Such was the case when I recently read this headline on the RSPCA Approved Farming website, 'Ingham's committed to meat chicken welfare'.

My instant and perhaps inappropriate reaction was along the lines of 'What the pluck?'.

By this exclamation I questioned how Australia's biggest chicken meat producer, which has been in business for 100 years with a sharp chicken-processing focus for more than 50 years, could not be committed to the welfare of the animals it grows and then kills and sells for human consumption?

Please stay with me, if you're beginning to wonder what I'm banging on

Let me preface the next few paragraphs by stating, as regular readers of this publication's commentaries would know, I support almost all of the work the RSPCA does, especially on animal welfare and its production certification fronts

Similarly, I must concede that my hasty desk website research informed me Ingham's are quite impressive when it comes to how much emphasis they dedicate to chicken welfare.

For example, I've discovered that Ingham's publish an annual animal welfare report - well, they did in 2021 on their website - and they have 2022 versions of animal welfare and animal stewardship policies also uploaded





Go see for yourself at inghams.com.au/ourcompany/farming/

So, what I'm intimating is that in this day and age, when high quality animal welfare standards are a 'no-brainer' and their advocacy and transparent implementation are simply a necessary part of doing business for all involved in the meat protein production sector, surely headlines stating the obvious are no longer necessary?

Surely consumers must have reached the point where they can confidently expect all meat protein producers to not only endorse good animal welfare practices but actively practice them.

Is that too much to expect in 2022?

I think not.

Therefore, let's see what Ingham's has to say on the animal welfare front...

"To us, animal welfare means more than nurturing our chickens with good food, clean water

and safe shelter," the company's website article states.

"Animal welfare also means providing them with the freedom to comfortably move, perch, exercise and mingle with other chickens.

"We take the health and nutrition of our animals seriously."

I'm impressed so far and also somewhat reassured that they put things into practice, under the auspices and watchful eye of the RSPCA, via their RSPCA Approved Farming Accreditation.

As RSPCA Approved manager Talulah Gaunt said, "Here at the RSP-CA Approved Farming Scheme, we've worked with Ingham's for nearly a decade on improving meat chicken welfare."

"In that time, we've always been impressed with the company's professionalism to animal welfare and dedication of their team to evolving the busi-

"Excitingly, all Ingham's meat chicken sheds are certified to our indoor requirements, and we're continuing to work with their free range farms to get them certified to our outdoor requirements.

"It's not an easy job, so well done Ingham's."

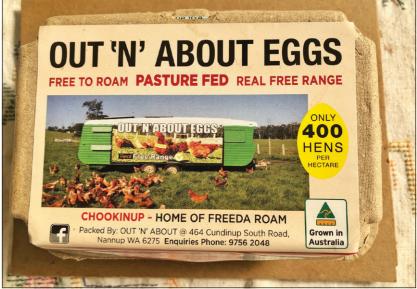
Ingham's general manager of veterinary health and welfare Dr Andrew Walsh said, "It's been great to partner with the RSPCA Approved Farming Scheme team in improving animal welfare outcomes on 100 percent of our meat chicken farms across Australia for almost 10 years."

"As a veterinarian, I am a passionate advocate for ensuring our birds are cared for to a higher standard of welfare, and I believe that the RSP-CA Approved Farming Scheme has helped our business to drive continuous improvement of the welfare of our birds."

I believe we have surely reached a point where we can, in good faith, expect that the animal proteins we consume have been produced under the highest possible welfare conditions.

Future headlines featuring animal welfare would then only reflect the always disturbing outliers of animal welfare neglect.

And let's hope such events always make head-



If not gold standard, maybe at least minimum standard, for egg production.



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1. Rodriguez-Gonzal E et al. Anthelmintic Benzimidazoles in Eggs. Chapter 44 in Egg Innovations and Strategies for Improvements (ed. P. Hester). Elsevier. 2017. 2. Lacey E. et al. The role of the cytoskeletal protein, tubulin, in the mode of action and mechanism of drug resistance to benzimidazoles. Int J Parasit. 18 (7):885-936. 1988. 3. Chassaing C. et al. Highly Water-Soluble Prodrugs of Anthelmintic Benzimidazole Carbamates: Synthesis, Pharmacodynamics, and Pharmacokinetics. J Med Chem. 52:1111-1114. 2008. 4. Committee for Medicinal Products for Veterinary Use. Flubendazole (extrapolation to poultry). Summary Report (4). European Medicines Agency. July 2006. 5. Froyman R. & De Keyser H. Flubendazole: safety regarding egg production and reproductive performance of breeder chickens. Av Dis 27:1 (43-48). 1983.

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# Alltech meta-analysis shows positive results

# ■ Data on performance, livability and environmental sustainability of broiler production

ALLTECH has released data from a new metaanalysis - published in Poultry Science - that demonstrates the impacts of mycotoxins on broiler productivity and the positive effect of yeast cell wall extract supplementation during a mycotoxin challenge on the performance, livability and environmental sustainability of broiler production.

The first study of its kind in boiler produc-

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consists of 25 studies carried out across 11 countries with a total of 10,307 birds.

The meta-analysis measured the impact of mycotoxins on the performance and efficiency of birds in regard to body weight gain, feed intake, feed conversion ratio, European poultry efficiency

tion, the meta-analysis factor and the impact of mycotoxins on bird mortality, and the effect of feeding Mycosorb on these parameters when provided during a mycotoxin challenge.

> The carbon footprint of mycotoxins on broiler production with and without Mycosorb inclusion was also estimated. Alltech

mycotoxin

management team global technical support Dr Alexandra Weaver said, "Consumption of mycotoxin-contaminated feed by animals can result in reduced farm productivity and profitability due to decreased animal performance and efficiency, increased mortality and greater carbon emissions."

"However, this metaanalysis confirms that Mycosorb is an effective solution for minimising mycotoxin effects on broiler performance and health, as well as contributing to lowering the carbon emissions of production," Dr Weaver

The significant (p <0.05) impact of mycotoxins on bird performance and efficiency included:

- Lower total BWG in birds consuming mycotoxins compared to the control (-217.20g, average finishing period of 35.5 days)
- Higher FCR in birds consuming mycotoxins compared to the control (+0.12)
- Lower total FI in birds consuming mycotoxins compared to the control (-264.44g)
- Reduced EPEF compared to the control (-59.36)
- Higher mortality in birds consuming mycotoxins compared to the control (+2.07 percent).

When included during a mycotoxin challenge, Mycosorb significantly (p <0.05):

- Increased total BWG compared to the mycotoxin diet (+65.48g, average finishing period of 35.5 days)
- Lowered FCR compared to the mycotoxin
- Increased total FI compared to the myco-

toxin diet (+99.39g) • Increased EPEF compared to the mycotoxin diet (+16.81)

 Lowered mortality rates compared to birds consuming a mycotoxin diet (-1.74 percent), Mycosorb-fed birds had mortality rates that did not differ from the unchallenged control birds.

#### Comparing environmental metrics with and without Mycosorb

A simulated lifecycle assessment applied to a 100,000-bird broiler operation highlighted how Mycosorb can ameliorate the increases in carbon footprint caused by mycotoxins.

Compared to the mycotoxin diet, the inclusion of Mycosorb during a mycotoxin challenge resulted in:

- More saleable birds (+1740)
- Increase in liveweight produced (+11.1 metric
- Decreased emissions per bird (-0.12kg CO2eg/bird)
- Decreased emissions per kg liveweight (LW) (-0.10kg CO2-eq/kg LW)
- Decreased emissions per kg carcass (-0.14kg CO2-eq/kg carcass).

Across 100,000 birds, this is a total decrease of 25.41 metric tons CO2-eq, which equates

to 30 fewer transatlantic round-trip flights or the annual usage of 17 cars in the UK.

Alltech mycotoxin management program global director Nick Adams said, "Testing of grains and feeds continues to highlight the ever-present threat of mycotoxins in animal diets globally, and as this study demonstrates, it is not only impacting animal health and performance but the environmental sustainability of animal production also."

"As the agricultural industry seeks to make advances in reducing its carbon footprint, it is evident that feed additives that improve the productivity of livestock operations are one of the tools that can contribute to achieving these targets," Mr Adams said.

This meta-analysis reaffirms that Mycosorb contributes to an increase in total protein output, improvement of profitability and reduction of the carbon footprint of broiler production under mycotoxin challenged conditions.

For more information on Mycosorb and the meta-analysis data, visit knowmycotoxins.com/ mycotoxin-mitigation/ mycosorb-a/ 🦫



Mycosorb is an effective solution for minimising mycotoxin effects on broiler performance and health.





Photo: Australian Eggs

# Animal Welfare Standards and Guidelines for Poultry in Australia

THE Independent Poultry Welfare Panel commissioned by all Agriculture Ministers in 2019 has completed its work on developing new Australian Animal Welfare Standards and Guidelines for Poultry – the poultry standards.

This follows an extensive process of stakeholder consultation, and the consideration of contemporary animal welfare science and community expectations.

The Commonwealth, states and territories have worked together to agree to release the poultry standards, with each state and territory considering implementation options during 2022, with further discussions by all ministers in early 2023.

The poultry standards are one of a suite of Australian Animal Welfare Standards and Guidelines that aim to harmonise national animal welfare legislation, providing clarity and consistency to industry, consumers and trading partners.

Standards are the animal welfare requirements that will be put into effect in state and territory legislation and must be met under law for farm animal welfare purposes.

Guidelines are voluntary and are recommended practices to achieve desirable animal welfare outcomes.

The Australian Animal Welfare Standards and Guidelines for Poultry should be read alongside the Decision Regulation Impact Statement.

The DRIS considers the impacts of the poultry standards on businesses, individuals, governments and the public.

The DRIS can also be found on the Office of Best Practice Regulation website – obpr.pmc.gov.au/

#### Improvements to poul-

try welfare in Australia
The most significant improvements to poultry welfare in the standards and guidelines made by the independent panel include:

- A phase-out of conventional layer hen 'cages' over 10 to 15 years at the latest by 2036 depending on the age of current infrastructure
- A requirement to provide environmental enrichment for meat chicken breeders
- Changes to the minimum light intensity and required periods of darkness, ventilation and temperature parameters for all species
- A requirement to pro-

vide breeder ducks with access to bathing and dunking water.

nationally consistent and

effectively enforced regu-

The Agriculture Minis-

ters' Forum agreed to the

panel's terms of reference

For more information,

contact poultry.panel@ag

in October 2019.

riculture.gov.au 9

lation.

The Australian Animal Welfare Standards and Guidelines for Poultry replaces the now outdated Model Codes of Practice, which were voluntary:

• Model Code of Practice for the Welfare of Animals: Domestic Poultry

• Model Code of Practice for the Welfare of Animals: Farming of Ostriches

• Model Code of Practice for the Welfare of Animals: Husbandry of Captive-Bred Emus

#### The Regulation Impact Statement and adden-

In accordance with Council of Australian Governments guidelines, a formal Decision Regulation Impact Statement was produced by an economic consultant.

The DRIS considers the financial and regulatory impacts of four policy options, centred around adoption of the standards.

These options represent a refinement to those originally presented in the 2017 Consultation Regulation Impact Statement and reflect the decisions of the panel.

A supporting addendum was also developed to address feedback provided back to the economic consultant.

## Independent panel

The poultry standards were developed by the Independent Poultry Welfare Panel – commissioned by agriculture ministers from all jurisdictions in October 2019.

The panel completed its work in late 2021, which followed an extensive stakeholder engagement process that attracted significant public interest, and included input from a stakeholder advisory group.

The terms of reference for the independent panel set out that the standards will:

- Improve animal welfare outcomes within Australia's poultry industries
- Reflect contemporary animal welfare science
- Consider current industry practices, cost and benefits, new technologies and practicalities of implementation
- Align with the values and expectations shared by the Australian community
- Meet the expectations of trading partners
- Consider possible domestic and international trade impacts
- Provide the basis for

# Chicken prices set to spiral

ONE of the country's top poultry processors warned that Australian consumers face further price hikes for chicken, as the world's most consumed meat gets pricier around the globe.

Inghams Group Ltd flagged further price increases as it faces ongoing inflation and supply chain disruptions that have hit profits.

It warned that the challenging trade environment would persist, with rising feed costs in particular pressuring operations.

The Sydney-based company reported full-year profit of \$35.1 million in the 12 months to June 30, missing the average analyst estimate of \$43.4 million.

Its shares plunged as much as 9.4 percent in early Sydney trading

recently, the most sinc March 2020.

The company raised prices earlier this year, due to the lingering effects of a national outbreak of the omicron variant of the coronavirus that snarled supply chains and caused severe labour shortages.

As at the end of August, it cited challenges from COVID-19 disruptions, the war in Ukraine and floods in parts of Australia as continuing pressures into 2023.

Despite the results, Inghams chief executive officer Andrew Reeves said, "I am very proud of the resilience and commitment shown by our people and the way they have responded to the numerous challenges we have faced during the year."

"We are greatly en-

couraged by the ongoing recovery taking place across the business, with our farming and plant operations continuing their recovery to normal operating levels, shifts and

product range.
"Our core business is in good shape.

"Our diverse network and market leading integrated operating model provides a strong platform that has helped us navigate the significant disruptions over the past two years and positions us well for the future."

Looking ahead, Inghams said its core business was "well-positioned, with its geographically diverse network and integrated operating model underpinning its track record of strong cash generation."

The company expects

ongoing price pressures to throw up some headwinds in the 2023 financial year, but said it was making significant progress on securing price increases to offset the inflationary pressures.

Globally, poultry is scarce as the industry is squeezed by higher input costs and labour short-

Earlier this year, Australian consumers bemoaned a fried chicken shortage after fast-food chain KFC said suppliers had been hit by COVID-19-driven staff shortages.

Japan experienced similar problems late last year at popular convenience stores, while Singapore was hit hard when neighbouring Malaysia curbed poultry exports in June to safeguard domestic supplies.



# Poultry pump package

POULTRY producers have a major challenge every day in the management of liquids.

They need to clean, sterilise, collect and pump away waste and often provide fertiliser and nutrients to grow feed.

Aussie Pumps has come up with a package that covers everything, from growing through to final production of the end product.

Aussie Pumps chief engineer John Hales said, "We have managed to go all the way from initial birth and production through the growing cycle to product on the supermarket shelves."

#### A clean environment is essential

Keeping the sheds clean to grow healthy chicks is mandatory.

It's not only a legal obligation but is also a matter of good business.

Aussie Pumps produces a range of Australian conceived, designed and built pressure cleaners, all the way up to 5000psi machines.

They can be electric or engine drive, and all feature stainless-steel frames, heavy duty Bertolini triplex pumps fitted with solid ceramic pistons and 'cool-fin' crank cases.

The range includes flows of up to 40LPM, making them suitable for both wash and flush activities.

Best of all, the machines are designed in line with Aussies registered 'scud' concept, where the stainless-steel frames are designed to have virtually zero sharps.

They are claimed to be the most occupational health and safety friendly pressure cleaners in the world.

"We even have some sheds operating their own high-pressure water jetters, which not only wash and flush and clean but also clear blocked drains using our Aussie 'cobra jetter concept," Mr Hales said.

"The jetter concept features the use of 4000 and 5000psi pressures to clear blocked drains fast, without the use of mechanical or electric drive drain cleaners - it's fast, cheap and clean."

#### Steamy activities

Some poultry farmers have graduated to hot wash and steam-clean machines - to not only clean but disinfect at the same time

The World Health Organisation states that using hot water at over 60C will kill almost all germs, including coronavirus.

Aussie Pumps range starts with electric-drive machines going from 1800 to 4000psi, with flows up

the market.

The Aussie Pumps hotwater range also includes a 4000psi Honda enginepowered steam cleaner

make it portable anywhere

in the shed for cleaning.

#### **Pumping effluent**

The Aussie Pumps range includes super heavy duty cast-iron semi-trash pumps capable of moving up to 2300LPM.

introduced Recently models include a high-head capability that can pump small compressible solids in suspension.

The new machines feature flows and high heads, with the ability to handle up to 1200LPM and pump to a vertical lift of up to 80m.

They all self-prime and are built in a mono-block style execution, with the quick-open front port for

cal seals and stainless-steel wear plate are standard.

"As an ISO9001 certified company, Aussie Pumps believes in delivering products that work" Mr Hales

"Our products are sourced as components from developed countries.

## Trash pumps are a

to processors.

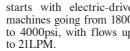
Driven by either petrol or diesel-engine drives, these machines are part of the Aussie Pumps quick prime

They all feature excellent priming capabilities - with some models capable of vertical lift of up to 7.6m – and are designed to handle solids in suspension up to 3" in diameter.

com.au &



Aussie Pumps package covers everything from growing through to final production of the end product.



Prices are low too, with the Aussie Sizzler a new stainless-steel entrant to

with a temperature range up to 130C. The machine comes in a stainless-steel frame and is mounted on four wheels to

on the farm. Best of all, using steam means the elimination of caustic or harmful carcinogenic chemicals being used

It's all part of the job.

easy cleaning.

Silicon carbide mechani-

## farming essential

Aussie Pumps makes a range of trash pumps also, which are suitable for use in anything from farming

These are engine-driven machines with flows of up to 6000LPM and the ability to pump to heads of 47m.

For more information, including Aussie Pumps free agricultural solutions brochure, visit aussiepumps.



Preventing disease introduction on a farm should be the centre of focus for all egg producers.

# **Egg producers need structural and procedural biosecurity**

PREVENTING disease introduction on to a farm from all angles should be the centre of focus for egg produc-

The importance of implementing structural and procedural biosecurity measures to prevent disease introduction from all possible directions was discussed by Assistant Professor Geoffrey Lossie of Purdue University College of Veterinary Medicine during the 2022 Virtual Shell Egg Academy on August 15, 2022.

Structural biosecurity involves the physical construction and maintenance of the poultry premises that strengthen biosecurity, while operational or procedural biosecurity is the practices, procedures and policies that are consistently followed by personnel, according to Prof Lossie

Structural biosecurity Concerning structural biosecurity measures, Prof Lossie gave examples including the perimeter buffer, line of separation, farm traffic poultry house entry, foot baths, mortality disposal, water sources and fences.

"One of the best examples for structural biosecurity are fences," Prof Lossie said.

"They keep unwanted guests off the poultry

"If you're using well water, there is potential for that water to become contaminated, changing the water sanitation program may be needed."

Danish entry systems were noted as an effective and simple biosecurity measure, in which street clothes are removed before entering a poultry house.

Biosecurity doesn't always have to be technologically advanced, so this is a good example of a simple entry system," Prof Lossie said.

**Procedural biosecurity** 

Regarding procedural biosecurity measures. Prof Lossie gave examples, including standard operating procedures for personnel and contract labour, personal protective equipment usage standardisation, and maintenance of structural biosecurity measures such as footbaths or hand sanitiser stations.

Bird moving crews or vaccination crews that work with other companies were described as high risk due to their travel between different farms after potential exposures to other poultry.

Poultry non-contact times of 48-72 hours are a common addition to contractor or visitor SOPs to ensure no contact with other poultry - including backyard or small flocks - has been had for anyone entering the farm's premises.

"Making sure that contract labourers and the companies that rep-

resent them have fully understood and signed a visitation policy or agreement and read through your SOPs is very important," Prof Lossie said.

Visitor logs were noted as one of the most crucial yet frequently ignored aspects of procedural biosecurity.

"Visitor logs are one of the most neglected aspects that I find when evaluating a site's biosecurity," Prof Lossie said.

"Knowing which individuals outside of the company have been on a premise is extremely important for tracing the source of a potential disease outbreak.

#### Some commonly forgotten biosecurity aspects

The order of operations when evaluating multiple flocks is important to remember also.

Young flocks should be evaluated first and sick flocks should be evaluated last.

Evaluating sick flocks first will increase the risk of spreading disease to other flocks.

Younger birds have had less time to be exposed to disease compared to older flocks, so the chances that they could be infected are lower.

Additionally, hats and mobile phones are likely to cause biosecurity breaches, Prof Lossie noted.

"If you want to wear hats in a poultry barn, you need to have sitespecific hats, just like you do everything else." he said.

"I have seen people rip holes in their bio suits to access phones while in a barn.

"Phones are by far one of the biggest personal biosecurity errors I see." Prof Lossie recommended that phones be placed in Ziploc bags while in the barn and

wiped down with disin-

fectant after leaving.

# Deadline set to end battery cages for layer hens

A NEW national animal welfare standard for poultry was announced recently - following an independent review and seven long years of deliberations, frustrated by industry lobbying.

The new standard finally sets a deadline to end the use of barren battery cages, but not until 2036.

The review of the poultry standard began in 2015 and a public inquiry in 2018 attracted strong public interest with almost 170,000 public submissions, the vast majority of which called for a cage ban.

After the process stalled, an independent panel - aptralian Poultry Standards and Guidelines - recommended a phase out between 2032 and 2036, and the standard announced sets that as the agreed national deadline.

The confinement of laver hens to battery cages is cruel and out of step with community expectations, the animal welfare organisation Humane Society International stated.

Battery cages are no larger than an A4 piece of paper and prevent a host of natural behaviours such as roosting, nesting, foraging, and dustbathing.

Considering egg industry lobbying threatened to derail the process, Humane Society International was pleased a deadline had been agreed but said it should be treated as a final back stop on cruelty.

State governments should do the right thing and legislate more rapid phase outs of battery cages.

More than 300 companies around the world have already pledged their move to cage-free eggs, and 30 of 36 nations of the Organisation for Economic Cooperation and Development have already outlawed or are winding up convention-

al battery cages. Countries such as Switzerland, Austria, the United pean Union all completely phased out battery cages before the seven-year review had started.

Humane Society International Australia animal welfare campaigner Georgie Dolphin said, "The science is clear and public sentiment is clear - that's why so many corporations and countries have banned cruel cages already."

"Industry has had plenty of warning that a deadline was coming, the market has been heading that way for years," Mr Dolphin said.

"Up to 55 million more hens could suffer in battery cages over the next 14

"Humane Society International is calling on state governments to put in place faster phase-out deadlines so that Australia catches up with the global movement away from cruel cages.

"We are also calling for an overhaul of the animal welfare standard setting process.

"That this review took seven years is indicative of a system that is dysfunctional and in dire need of reform."

Among the recommendations of an independent panel was the phase out of battery cages between 2032 and 2036, as shown on page 30 of the new standards and guidelines.

Humane Society International is a member of the Australian Alliance for Animals that is working to tackle the underlying inequalities in Australia's animal welfare system.

HSI - together with the Alliance – is calling for:

• The establishment of truly independent authorities for animal welfare

• The creation of ministerial portfolios for animal welfare separate to agriculture

• An independent, consistent and transparent legislated process for the development of animal welfare standards, which determine how millions of Australian animals spend their lives.

The Albanese Government has made the following commitments:

• It pledged to invest \$1 million each year to fund the inspector-general for animal welfare to oversee national animal welfare strategy, with the aim of increasing accountability and transparency in animal welfare policy

• It committed to investing \$5 million over four years to renew the Australian Animal Welfare Strategy, an impornational initiative that was defunded by the coalition government almost a decade ago.

Battery cage bans around the world by battery cage phase-out date and country:

- 1992 Switzerland
- 2010 Austria

• 2012 Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of Cyprus, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

- 2021 Iceland
- 2022 New Zealand
- 2024 Mexico • 2027 Czech Republic,
- 2029 Israel



Humane Society International is calling on state governments to put in place faster phase-out deadlines so that Australia catches up with the global movement away from cruel cages.

# **Spotty liver disease in poultry**

SPOTTY liver disease is an emerging disease in extensively housed poultry.

It's most commonly seen in free range layer hens but has also been reported in broiler breeders.

The signs of disease are variable, ranging from low bird mortality with minimal impact on production to a sudden onset of significant mortality with a reduction in egg production.

Such impacts on bird health and productivity have serious economic consequences for egg producers in the expanding free range layer sector in Australia.

Additional to these productivity losses is the costs associated with treatment during outbreaks of SLD and current attempts at implementing non-antibiotic in-feed preventative programs.

Though the disease has

been recognised for over 60 years, it is only in the past decade that the disease has become a significant issue for the layer industry, with the change away from cages to extensive production systems.

Commonly, the disease becomes clinically evident when flocks are approaching peak lay.

SLD can occur at any age but particularly when layer production flocks are experiencing husbandry or environmental stressors.

When mortalities are investigated the birds are found to have lesions in the liver – usually the surfaces of all lobes are covered in 1-2mm pale spots, as per Figure 1.

It is assumed that the pathogenesis of SLD, which results in damage to the liver, is causally associated with the depressed egg production and increased mortalities.

Flocks can recover from low level incidences of SLD spontaneously or in more significant outbreaks after therapeutic intervention following treatment with chlortetracycline.

A feature of SLD is that disease outbreaks can reoccur multiple times, requiring repeat treatment.

Despite decades of looking for the aetio-logical cause of SLD, it was only in 2015 that the bacterial cause of the disease was identified – first by an English research group and then confirmed and characterised more extensively here in Australia.

Collaborative research carried out by RMIT University and Scolexia Pty Ltd led to the isolation and characterisation of the bacterial pathogen responsible for causing SLD in Australian flocks

The pathogen has been identified as a new bacte-

rial species that we have named campylobacter hepaticus – see Figure 2.

We have developed PCR-based methods for the specific detection of c hepaticus in complex biological samples, for example intestinal contents

The collaborative partners have established an experimental disease-induction model that produces typical clinical SLD in layers and this is now being used to study the mechanisms of disease pathogenesis.

Recognising the negative impact to the layer industry, Australian Eggs is supporting the collaborating partners to use their disease model to evaluate potential ways to control the disease or lessen its impact.

Vaccine formulations are being developed by ACE Laboratories and tested in the disease model and various nonantibiotic feed additives – such as short and medium chain fatty acids, probiotics and plant extracts – are being evaluated for their efficacy in preventing or ameliorating the impact of SLD.

With a continued dedicated research effort and support from Australian Eggs, industry and other funding bodies, we aim to understand more about the disease and develop control methods that poultry farmers can implement to improve the health, welfare and productivity of their egg production flocks.



Figure 1. Liver lesions seen in a typical field case of spotty liver disease.



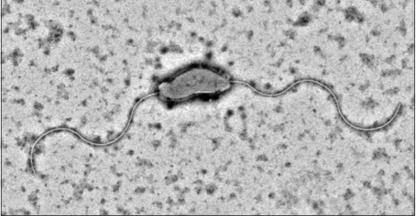


Figure 2: Transmission electron micrograph of campylobacter hepaticus. Note the typical s-shaped cell and bipolar flagella.





Black soldier fly larvae. Photo: Leah - Gourmet Grub



Professor Louw Hoffman from the Centre for Nutrition and Food Sciences at the Queensland Alliance for Agriculture and Food Innovation.

# **Black soldier flies advance food security**

A SUPPLY chain that uses insects to upcycle food waste into high-grade protein, animal feed and fertiliser is being built in Australia with the help of University of Queensland researchers.

Key to this innovation is the black soldier fly hermetia illucens and the 95 percent of food waste that ends up in landfill.

Professor Louw Hoffman from the Centre for Nutrition and Food Sciences at the Queensland Alliance for Agriculture and Food Innovation said solving the challenge of diminishing global food security required new thinking.

"Solving the challenge of diminishing global food security required new thinking," Prof Hoffman said. "In the past, when food security became an issue, we could bring more land under cultivation and intensify production systems.

"We no longer have those options given finite soil, water and fertiliser resources.

"Now, we are faced with the challenge of producing and consuming food more efficiently, using essentially the same resource base."

Prof Hoffman is working with industry and food safety regulators to create a sustainable protein supply chain.

The Fight for Food Waste Cooperative Research Centre, the world's largest dedicated food waste research and development programme, is co-funding collaborative work between Australian waste management innovators Goterra and the University of Queensland.

The larvae of the black soldier fly are already used to upcycle food waste into nitrogen-rich fertiliser.

Canberra-based project partner Goterra uses modular shipping containers to generate tonnes of upcycled compost soil amendment.

"We have an opportunity to create a novel and sustainable supply chain of high-value proteins that sits well with a contemporary appetite for responsibly sourced food, especially proteins," Prof Hoffman

This project takes it one step further, bringing the larvae into animal feed "It can also help divert grain currently used to feed animals back to humans through the use of balanced livestock feed formulations that include insect proteins," Prof Hoffman said.

However, while the black soldier larvae are edible, they are only approved for fish and poultry consumption in some jurisdictions and not for pigs or ruminants.

Discussion with Food Standards Australia New Zealand will ensure the research team conducts industry-relevant testing to provide the necessary food safety data.

"Using food waste to grow the larvae raises three key safety issues," Prof Hoffman said.

"These issues relate to

the larvae potentially accumulating microbial, heavy metal and allergen contaminants."

The first findings have recently been published and the results are promising, with rinsing and blanching to process the insects proving particularly effective at reducing microbial load.

Drying had so far proved the best storage method to avoid microbial spoilage in both refrigerated and room temperature conditions.

The strategy was first to roll out larvae production as feed for fish and chickens

The QAAFI team was now working its way up the food chain, clearing safety issues as they arose, Prof Hoffman said.

# Peanut skins in poultry diets leave no trace of allegens

RESEARCH chemist Ondulla Toomer is looking at alternative uses for peanut skins that would usually be discarded as waste.

According to a recent press release, Ms Toomer's studies at the Agricultural Research Service, Food Science and Market Quality and Handling Research Unit in Raleigh, North Caroline suggest a range of food and livestock feed uses that could potentially open the door to new value-added markets for peanut skins.

Instead of landfill waste, Ms Toomer sees untapped nutritional potential in the paper-thin skins, which are chock full of protein, carbohydrates, fats, fibre and minerals and vitamins.

Peanut skins also contain bioactive compounds, including antioxidants that help neutralise cell-damaging molecules in the body, called free radicals.

In fact, some have antioxidant activity levels equal to those of green tea, grape skins and other sources.

On the livestock feed front, Ms Toomer and collaborators are exploring the benefits of adding peanut skins to the diets of poultry.

However, peanut skins contain tannins, which can reduce the digestion of protein from feed.

The researchers have begun evaluating low inclusion levels of 4 percent of peanut skins,

with a view to determining the optimal amount that can be added.

Aware of peanut sensitivities in some consumers, the researchers also checked for the presence of allergenic peanut proteins in egg and meat samples produced from birds fed peanut-containing diets.

However, no traces of peanut allergens were detected.

Also of interest is determining whether birds fed peanut skins shed fewer salmonella bacteria, which can pose a human food safety concern with the consumption of poultry meat or eggs.

On the functional food front, the researchers are comparing concentrations of bioactive compounds in different coloured peanut skins, which range from red, tan and brown to white, black and variegated.

Ms Toomer said profiling the nutritional chemistry and properties of peanut skins is a key step towards figuring out how best to use them, with potential benefits to producers and consumers.

More broadly, Ms Toomer's efforts dovetail with the Agricultural Research Service lab's overarching mission to improve the productivity, processing, end-user quality and nutritional value of not only peanut, but also cucumber, sweet potato, capsicum and cabbage crops.



Scientists are investigating new value-added markets for peanut skins, exploring the benefits of adding peanut skins to the diets of poultry. Photo: Arisa Chattasa

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An end date for use of barren battery cages in Australia. Photo: Jo-Anne McArthur We Animals

# RSPCA celebrates battery cage phase out

THE RSPCA has welcomed an announcement recently that Australia will finally phase out barren battery cages – a historic move that will improve the lives of millions of layer hens.

The news comes as national Poultry Standards and Guidelines – which have been under review for nearly seven years – have finally been completed and include a phase out of battery cages for layer hens no later than 2036.

RSPCA Australia chief executive officer Richard Mussell said it was a significant win for animal welfare.

"This is a win for animal advocates and for the community who have been calling for an end to these barren wire cages for over 40 years," Mr Mussell said.

"But most importantly, it will eventually be a win for the millions of layer hens confined to battery cages.

"While this move can't come soon enough, once implemented, it will bring Australia into line with over 75 percent of the Organisation for Economic Co-operation and Development countries that have already moved to phase out

battery cages.

"While 2036 may seem a long way away – and it is – putting an end date in place is vitally important, so that producers can transition to cage-free systems as soon as possible and to make it clear to retailers and the food service industry that battery cages are on their way out.

"But there's no reason we need to wait until 2036 – states and territories can implement a phase out ahead of schedule.

"The ACT did this in 2014 and we urge all state and territory governments to do the right thing and implement a phase out as soon as possible."

RSPCA Australia chief

science officer Dr Suzie Fowler said animal welfare science was clear that hens suffer in barren battery cages.

"This is one of the worst animal welfare issues in Australia right now," Dr Fowler said.

"Good welfare simply can't be achieved in a battery cage because the animal welfare issues are inherent to the system itself – restricted movement, constantly standing on a wire floor and no ability for a hen to perform natural behaviours such as perching, nesting, stretching and flapping her wings.

"So, to finally see a phase-out date put in place is very significant and we welcome the news."

Mr Mussell said that this process has shone a light on the flaws in Australia's current approach to the development and implementation of animal welfare standards.

"These poultry standards

and guidelines were under review for nearly seven years," Mr Mussell said.

"The phase out is the right result and it should have been put in place six years ago.

"Millions more layer hens have had to endure barren battery cages as a result of these delays.

"We look forward to working with the new Federal Government to deliver much-needed reform, to improve Australia's approach to animal welfare standards and achieve better harmonisation of animal welfare practices across the country."

According to Australian Bureau of Statistics data, in 2020-21 there were approximately 5.36 million layer hens confined to cages, which represents approximately 32 percent of the national flock – 19 percent were in barn-laid indoor systems and 49 percent in free-range systems.

# Live-vaccine program for cage-free e coli challenge

A HIGHER risk of bacterial challenges in cage-free egg production means a live-vaccine program against escherichia coli is a 'must-have' minimum for flocks reared in alternative systems.

Indiana-based Wilson Veterinary Company poultry health expert Dan Wilson said the shift to cage-free production has seen e coli surge to the top of the bacterial-challenge list, thanks to birds in those systems being exposed to greater levels of bacteria

As a result, he said producers should plan a program of live vaccination and carry out regular diagnostics to understand their farm's disease status and reduce the risk of bacterial causes of mortality.

mortality.

"In the past in cage production, there was a little bit less pressure on the birds as far as a need for e coli vaccination – even though we've stressed how important even a basic live program can be to minimising e coli challenges and in lay." Dr Wilson said.

"But now, in alternative styles of production, it's almost a must-have minimum to have a live program — typically multiple doses of a live program.

"In some cases, that

would include reboosting thee. coli live vaccine in lay."

As more producers adopt alternative production systems, Dr Wilson said live vaccines are also being paired with autogenous vaccination with killed products to gain multiple directions of prevention in lay.

#### Vaccination timing

When it comes to administering vaccinations, Dr Wilson said managers should select a time when it's convenient or most reliable to get the vaccine to the birds.

"In floor production or aviary production, the earlier we vaccinate them in pullet states, the more access we have to the birds to get a good spray or water vaccination," he said.

"So that plays a major factor in when we actually choose the timing of the live vaccinations."

Timing is also dependent on whether the pullet farm has e coli challenges or whether vaccination is purely for prevention on the layer side.

"If it's mostly for prevention on the layer side, we try to do the live vaccinations as close to lay as possible," Dr Wilson said.

Gaining protection through the early parts of lay is critical because birds are navigating stressful events such as a new environment, nutritional changes and coming into egg production, "so definitely try to target live vaccinations later in the pullet program for layer farms," Dr Wilson said.

#### Regular diagnostics

To understand the best course of management, Dr Wilson said regular necropsies are also helpful to know what serotypes a flock is dealing with.

"With more modern diagnostics outside of basic culture, we're doing a lot more with actually sequencing isolates and comparing them within and to other farms, and finding vaccine programs that match well with that," he said.

In alternative production, it's also important to remember that not all bacterial causes are e coli alone.

Discovery and verification are vital to ensure it is e coli and not something else.

Beyond that, Dr Wilson said that comparing isolates within and between farms can help determine vaccine decisions, or at least inform the producer that a vaccine change or addition would have a good return on investment in terms of profitability and welfare of the flock.





Industry supports ongoing improvement in animal

# NFF's view on phase-out of conventional cages

THE National Farmers' Federation released a statement stating that it was disappointed by the new Poultry Standards and Guidelines released by the Federal Government on Thursday August 18, 2022.

NFF chief executive officer Tony Mahar said, "Industry supports ongoing improvement in animal welfare outcomes, but these processes must be led by science and consider the impacts on farmers and consumers."



NFF CEO Tony Mahar.

"The rushed phaseout of conventional cages over just 10 years, with no plans announced for compensation or support, could spell the end for many family-owned egg pro-

"Eggs are an affordable source of protein and a much-loved staple in the weekly shop.

"Both affordability and supply will suffer if this rushed phase-out goes ahead.

"The egg industry is already struggling with spiralling costs.

'We're seeing these challenges manifest in egg shortages on supermarket shelves.

"Now the plan is to worsen this, by forcing farmers to discard cages that in many cases they're still paying off," Mr Mahar said.

From the NFF's perspective, significant consultation and jurisdictional harmonisation efforts with producers must now occur.

**Insights into poultry waste composting systems** ished in about six weeks THE following outlines - if the compost is to be

the distinguishing characteristics of the main types of composting systems that could be suitable for poultry waste compost-

Because all systems aim to control the composting process by manipulating temperature, oxygen and moisture, they are variations of a common theme.

The most prevailing type of system is the turned windrow or pile - see Figure 5.

It is adequate for processing many types of organic wastes, including mortali-

To maintain optimum composting conditions, windrows are managed by turning the mass with either a front-end loader or a specialised windrow turner.

The windrow system is particularly suitable for onfarm composting for several reasons.

It is simple and relatively cheap to set up and operate. Windrows need more space than other systems, and in rural areas, likely suitable sites are easier to find for space and buffer

distances. On-farm composting operations often have another advantage over commercial operations in urban areas - more time.

In windrowing, composting for extended periods helps the process perfor-

Features and areas to note with a windrow system:

· Low capital and processing costs

• Flexible for a range of wastes - suitable for mortalities, subject to appropriate controls

 Aeration by specialised turner or front-end loader

• Compost can be fin-

empty one. on-sold to another user, a longer composting period of at least 12 weeks is rec-

ommended · Windrows can be outdoors or under a roof

• Care needed for effective control of odour and leachate.

Though mortalities can be composted in open windrows or piles, most poultry operations find that a bin system is ideal for regularly disposing of small quantities of carcasses – see Figure 6.

Features and areas to note with a composting bin

• Most widely used system for mortalities where the bins are progressively filled over 1-2 weeks as carcasses are collected

• Significant capital cost because a roof is usually needed to protect from heavy rainfall

• Low processing costs simple to operate

 Aeration by moving compost from one bin to the next in succession

• Compost can be moved out and stored after about six weeks composting.

Forced aeration systems - with fans for aeration improve process control.

They do not necessarily produce compost of higher quality than mechanically turned windrows, but they usually do it faster.

Specialised mortality composting services are also available in some areas.

These typically involve a period of composting at the poultry facility, then the process is completed at a commercial facility.

The most common example of this approach is offered with the BiobiN – see Figure 7, left.

It is delivered for the poultry farm to fill over an agreed period, after which the bin is exchanged for an

The BiobiN is fully containerised and aeration is controlled by fan.

An odour control system is fitted.

Many variations of fully controlled and scalable containerised composting systems are available commercially.

For instance, the Ecodrum system has also been used for poultry mortality composting in Australia.

It is an example of a rotating drum system that is designed to improve mixing and aeration during composting - see Figure 7, right.

Features and areas to note with a forced aeration system:

· Often called 'in-vessel' composting, these are scalable systems typically with aeration and odour control

• Significant capital cost to buy outright unless the container is leased under a service agreement, as for the BiobiN

· Medium to high operating costs

· Aeration by fans and,

for the Ecodrum, by rotation of the drum.

Highly sophisticated forced aeration systems are commercially available.

Though these can be used in on-farm composting operations, the expense can be difficult to justify for all but the largest farm operations.

Two examples of such systems are shown in Figures 8 and 9.

Features and areas to note with an aerated static pile system:

 Medium capital and operating costs

• Forced aeration by fan

• Less flexibility - careful preparation of starting materials is essential

• Some control of temperature and aeration speeds up composting - further curing usually needed.

Features and areas to note with an agitated bay or channel system:

• Medium-high capital and operating costs

· Automated, space-effi-

• Flexible system - both forced aeration and mechanical mixing are used · Beds are covered in a building or roof

• Odour and leachate

control • Retention time in bed or channel, 2-4 weeks - fur-

ther curing usually needed. The choice of composting system or technology is generally governed by the

following key factors: • Types of material processed

· Location of the proposed operation and proximity to neighbours - distance, topography, prevailing winds

 Potential problems from dust, odour or bioaerosol emissions

• Size of available land and desired processing ca-

• Investment and operating costs.

Though on-farm poultry operations most commonly use a windrow pile system or bin systems - particularly in North America farms and agribusinesses near small towns or periurban areas may need to consider other options with better biosecurity and odour controls.

**AgriFutures Chicken** Meat





Figure 5. Two different types of turned windrows or piles. Photos: J. Biala, University of Queensland





Figure 6. Examples of mortality composting bin designs Photo: blancharddemofarms. org/practices/animal-mortality-composting





Figure 7. Examples of containerised composting systems, with the BiobiN and the Ecodrum.



Figure 8. Aerated static pile. Photo: Washington State University



Figure 9. Agitated bay or channel. Example shown composting chicken manure in a glasshouse. Photo: Washington State University





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# Myth of hormones in Australia's chickens busted

THE following is extracted from a podcast featuring Bruce Reynolds of the NSW Department of Primary Industries and Byron Stein, the department's development officer for poultry meat, looking at the myth of hormones in chicken and why it lingers.

Bruce asked, are hormones used in the poultry meat industry?

Byron's answer was no.

"I get that question a bit when I tell people I work with the poultry meat industry," Byron said.

"And one of the questions I get is, 'Well, how come they keep putting hormones into chicken to make them grow so big and so fast?"

"The fact that the question begins with 'why' and not 'do', shows me that people still think that hormones are used in poultry meat farming.

"But the truth is that hormones haven't been used in chicken meat since the 1960s in Australia.

"It was banned in the 1960s, so it's illegal.

"America banned hormones in their chicken in the 1950s.

"That's over half a century ago, but people don't have to take my word for it, anyone can check out the National Residue Survey, which was published by the Federal Government Department of Agriculture and is on their website – if people want to have a look at what residues are in meat, including chicken, to test my statement about no hormones."

Bruce asked, why is that

perception still there, why are people convinced that hormones are still being used in the poultry industry?

Byron responded that it's interesting – it's a myth the industry's been trying to dispel for a very long time but it has had limited success

"In fact, in a recent survey by one of the large chicken meat processing companies, 76 percent of consumers still think there are hormones in chicken," he said.

"There are a number of reasons why this myth

"One reason is that people can't believe that birds can go from chicks just out of the shell to being ready for the dinner table in only 6-7 weeks.

"They believe that farmers must be putting something special in their feed to give them a boost.

"So that's probably the main reason people can't get their heads around how chickens can grow so big without a bit of help."

So, if chickens aren't getting a shot of anything special, how are they growing so quickly?

According to Byron, essentially there are three key reasons why the birds are growing so quickly and so big – it is because of genetics, nutrition and the environment that they're grown in.

"So, the industry has essentially grown tremendously in the past 30-40 years, it's been a star performer – mainly through very good science and

intensive animal breeding programs, intensive animal nutrition programs and very good housing for birds." he said.

Let's look at genetics and how have genetics changed.

"It's not so much a change, but chickens are excellent breeders and have very short generation intervals, so this has helped breeding companies select for fast growth and bigger muscling," Byron said.

"Much in the same way breeding and selection has been done for other animals such as cattle and sheep, the difference of course is that chickens breed much quicker and produce offspring in a relatively short amount of time.

"So this means that you can see the results of your breeding program in 12 months or less.

"Compare this to cattle or sheep, for example, for which breeding programs take several years.

"Obviously, it also is the case of numbers, so each breeding hen can produce 300 chicks in a lifetime.

"There aren't too many cattle or sheep or even pigs that can produce anywhere near that number of offspring.

"So selection pressure is massive for the chickens and that is probably the key reason why it's had such massive genetic gains in the past 30-40 years."

Bruce asked, "You also mention nutrition, how have we changed the nutritional balance to get that performance in that 6-7 weeks?"

"Good question," Byron said.

"Well, the science of feeding chickens is quite intense and complex, and the industry continues to spend billions of dollars globally on getting the diet of chickens perfectly formulated.

"A well-formulated chicken diet helps the chickens reach their genetic potential and that provides fast and efficient growth rates using the best feed available.

"The research into nutrition continues all the time, with the industry and the feed companies investing bucket loads of money in an effort to keep one step ahead of each other, so it's very competitive.

"And also, to try to keep in step with the genetic gains the breeding companies are achieving.

"Nutrition is a continuing feast, excuse the pun."

The third area was the environmental factors and the way we've changed these to grow out the chickens.

According to Byron, genetics and breeding are two reasons for this fast growth, the third is the environment.

"Hundreds of millions of dollars have been invested in finding out and then providing the optimal growing conditions for the birds," he said.

"So things such as temperature, humidity, air quality, lighting, water quality and ventilation are all painstakingly monitored and adjusted to provide the birds the very best conditions to grow in.

"There's no point in investing hundreds of millions of dollars in breeding and nutrition only to waste

it by giving the birds poor housing conditions.

"The industry's invested a lot of money in that space – to give the birds the absolute optimal conditions to grow out in, so that they can achieve the genetic gains that they've been breeding the birds for.

"I guess to summarise, it's the combination of genetics, nutrition and environment that have all come together – perfectly almost – which has resulted in the birds growing much bigger and much faster than they have ever before."

Bruce asked, "We've looked at a couple of the reasons why the myth still exists, but I assume there are other rationales why the myth about using hormones in chickens hasn't died — what are some of the other explanations?"

"This is very much my opinion, but one of the main reasons why the myth about hormones in chickens is still alive and well unfortunately – because it's not true – is due to the marketing strategies of some of the other meat industries, some of the retailers and by some of the chicken meat industry itself," Byron said.

"For example, one of the large retailers promoted their beef products as being hormone free a few years back and one of the consequences of that marketing ploy was to bring the issue of hormones back to the spotlight, back into the public domain.

"And once that happened, chicken got brought into the mix and so people think hormones are across the board.

"That's one of the reasons, and I think the chicken meat industry and some of the retailers are also occasionally to blame.

"I still see 'hormone free' chicken being sold in my local supermarket sometimes and I've got to say, I laugh when I see those labels on the chicken because the truth is that I couldn't buy chicken with added hormones, even if I wanted to.

"Not that I would, but it's impossible to do because it just doesn't exist – it's been illegal for 50 years."

So, why does the chicken industry do this, why do they continue to put 'hormone free' on their packaging – implying that if it doesn't read 'hormone free', then the other chicken that doesn't say it might have hormones?

"Look I'm only guessing here but in essence, I think it's because despite the ban on hormones in the 1960s, they just haven't been able to convince consumers that there aren't hormones in chicken," Byron said.

"That this myth has perpetuated.

"I suppose the industry has shrugged its shoulders and said, if you can't change people's minds, we might as well market our products as 'hormone free' because that's what some of the other meat products have done.

"Maybe it's an attempt to compete with beef for example, which interestingly is still allowed to use hormones, and as I've said in the past, one of the retailers has marketed their product as being 'hormone free'.

To summarise, does chicken have hormones?

"No, the answer is categorically no, and not only is it illegal, it is logistically impossible to provide hormones to chickens because of the way they have to be administered," Byron said.

"Growth hormones are injected not consumed, so it couldn't be added to the feed, it would have to be injected.

"In a farm with multiple sheds and 250,000 birds, it's impossible to inject 250,000 birds.

"So, it's not only illegal, it's logistically impossible."



Growth hormones are injected not consumed, it's impossible to inject 250,000 birds.



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# **Philippines intensifies** measures against Al

## ■ 198 cases recorded since January

TO counter the spread of the highly pathogenic avian influenza virus in the country, the Philippines Department of Agriculture-Bureau of Animal Industry vowed to continue prioritisation of immediate information dissemination, thorough disease investigation, immediate culling and proper disposal of all remaining birds in affected farms, together with intensive surveillance in the 1km quarantine zone around the infected farms and heightened transport requirements for poultry commodities, requiring negative AI tests and other documents.

DA-BAI officer in charge Reildrin Morales said, "The BAI

is steadfast in mitigating the spread of AI, protecting the poultry industry of our country and ensuring the safety of our consumers."

Private laboratories have also been granted permission to conduct AI testing through the DA Memorandum Circular No 28 series of 2022 to help alleviate the burden of government laboratories due to the influx of samples, the ministry said in a press release.

Aside from regular consultation and coordination with the poultry industry stakeholders and coordination with the DA Regional Field Offices, local government units and other related agencies

and offices, the DA-BAI also reports to the Department of Health Epidemiology Bureau and the World Organisation for Animal Health on the current status of AI in the Philippines.

In a memorandum dated August 1, the DA-BAI confirmed the presence of Asian avian influenza subtype H5N1 in 17 provinces throughout the country.

The AI outbreak was confirmed to have entered the Philippines in January 2022.

Since then, a total of 198 cases were recorded nationwide, resulting in the mortality of 182,968 heads and the culling of 1,267,055 poultries.

# Carbon neutral eggs from insect-fed hens debut in UK

THE United Kingdom's fourth largest supermarket chain Morrisons has launched its own brand of carbon neutral

While carbon neutral eggs have been available in the UK for some time, the Morrisons offering branded Planet Friendly Eggs - is thought to be the first instance that carbon neutral eggs have been launched as an own brand in the country.

What's more, the eggs come from hens fed on on-farm produced insects.

#### **Committed to zero**

As part of the supermarket chain's commitment to be directly supplied by zero-emissions UK farms by 2030, Morrisons has been looking at net-zero carbon farm models, and Planet Friendly Eggs are the first product to come out of these models.

The insects that feed the hens are produced in a what is called a mini farm, supplied by insect farm company Better Origin.

Each container can help to feed 32,000 free range hens and receives three metric tons of waste from the company's fruit and vegetable site each week. More than chicken feed

However, the egg farm is not simply endowed with an insect farm.

It also has a large wind turbine, solar panels and a carbon sequestration program to offset any remaining emissions on the farm, which has 20 percent of its area planted with trees.

According to Morrisons head of agriculture Sophie Throup, the supermarket's customers consider the environmental impact of the food they eat and want affordable

zero emission produce. She continued that the

company was thrilled that after 18 months of hard work, the eggs were finally hitting shelves.

And in another first, the eggs will carry the British Lion Egg quality mark but printed in green

rather the usual red.

A pack of six Planet Friendly Eggs retails for \$A2.57.

The cheapest pack of six eggs advertised on Morrisons' website at the time of writing was six free range eggs, retailing for \$A1.80.



First announced last year, Morrisons' own brand supermarket carbon neutral eggs are now available in the United Kingdom. Photo: Lucy Ray PA Wire

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