



Dr Cheryl McCarthy, Associate Professor Jaquie Mitchell and Cathy McGowan at the 2023 AgriFutures Stakeholder Summit in Cairns Queensland.

Chicken welfare top of pecking order

AN innovative and groundbreaking animal growth and welfare monitoring, detection and notification system has been awarded the annual AgriFutures Research Award for 2023.

Developed by University of Southern Queensland's Centre for Agriculture Engineering mechatronics engineer Dr Cheryl McCarthy, the 'Novel detection of chicken welfare using machine vision' project will see the development of a proof-of-concept system for monitoring chickens and their behaviour in chicken sheds.

The system will seek to provide instant remote notifications to the shed supervisor to indicate when condi-

tions could be affecting flock welfare.

Dr McCarthy said the award recognised how important ongoing research is for improving efficiencies in the chicken meat industry.

"I am very excited to receive this award for research to develop new machine vision technologies for monitoring chicken flocks."

"Our innovative project aims to revolutionise the chicken meat industry.

"Improved and continual monitoring of housed chickens with real-time analysis and notifications will enable optimal and efficient animal management," Dr McCarthy said.

"Through using remote monitoring and image analysis, pro-

ducers will be able to monitor animal weight and quickly identify behaviours such as grouping, and implement management techniques to reduce the impact of those behaviours, resulting in healthier and more productive flocks.

"This automated system not only reduces any potential stress placed on the animal, but it would also save time and provide more frequent accurate data for the farmer."

As Dr McCarthy explained, the next step was developing the technology for commercial use.

"We now want to bolster this technology to offer an 'off the shelf' system that can be installed in sheds across Australia, and I

continued P2

UNE's Farming Futures Expo 2023

RECENTLY, the Poultry Hub Australia team joined Alison and Patrick from Pepe's Ducks Limited to participate in the University of New England's Farming Futures Expo.

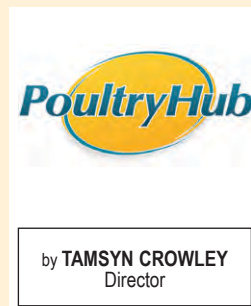
The event is run by students for students, and really delivers the message that Australian agriculture is an exciting career opportunity.

Farming Futures is a celebration of careers in agriculture.

The vision of the Farming Futures team was to create a networking event that would serve to:

- Provide an avenue for companies to promote employment opportunities within the agricultural sector
- Increase student awareness of job opportunities in the agricultural sector
- Create opportunities for industry to meet with upcoming graduates
- Provide encouragement and inspire students to complete their degrees
- Facilitate networking opportunities between students, academics and industry
- Encourage all aspects of the sector to work together to tackle the shortage of agricultural graduates.

The Farming Futures concept is helping to address some of the significant issues facing the agricultural sector, such



as low numbers of agricultural graduates, uncertainty about career paths in the sector and the low percentage of the agricultural workforce with a tertiary education.

Only 7 percent of the agricultural workforce have a tertiary education, compared to the Australian workforce average of 22 percent.

The Farming Futures event has been running since 2011 and has grown substantially over the years, with hundreds of students and a plethora of industry representatives attending the event this year.



Alison and Patrick from Pepe's Ducks facilitated a session at the 2023 Farming Futures Expo.

have more of these types of open and transparent interactions.

PHA has many tools and exercises that can help facilitate interactions with local schools, so if you are interested in bridging the gap, get in touch because we're always happy to help.

Internships play a crucial role in attracting young people to the poultry industry – by providing practical experience, industry exposure, networking opportunities, skill development, career exploration and adaptation to industry changes.

They bridge the gap between academic knowledge and real-world application, helping individuals develop the necessary understanding and insights into the poultry industry.

If you are interested in hosting a student or would like more information, contact us at poultryhub@une.edu.au



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**Poultry Industry
Calendar of Events**

2023

SEP 4-8 – World Veterinary Poultry Association, Verona Italy, www.wvpac2023.com

SEP 7-9 – Egg and Meat 2023, Krakow Poland, www.eggmeat2022.com

OCT 17-18 – Poultry Hub Australia Ideas Exchange, Adelaide South Australia, www.poultryhub.org

NOV 6-8 – Poultry Tech Summit 2023, Georgia USA, www.wattglobalmedia.com/poultrytechsummit/

NOV 6-8 – Avicola and Porcinos 2023, Buenos Aires Argentina, www.avicola.com.ar/en/

NOV 23-25 – Poultry India 2023, Hyderabad India, www.poultryindia.com.in

2024

JAN 31 - FEB 4 – International Production and Processing Expo (IPPE) 2024, Georgia USA, www.ippexpo.org

FEB 6-8 – Australian Poultry Science Symposium, Sydney Australia, www.apss2024.com.au

MAR 12-14 – World Agri-Tech Innovation Summit, San Francisco USA, www.worldagritechusa.com/

MAR 12-14 – Meat Pro Asia, Bangkok Thailand, www.meatpro-asia.com

NOV 12-15 – EuroTier 2024, Hanover Germany, www.eurotier.com

How to supply event details:
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All producers are encouraged to send in letters to be published in NPN, outlining any concerns or issues they may have with the industry.

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Please send your letters to: editorial@collins.media or PO Box 162, Wynnum Qld 4178

Chicken welfare top of pecking order at research awards

from P1
am working with the chicken meat industry through AgriFutures and a commercial partner to conduct extended field trials," she said.

"We believe it's feasible that this technology could be up and running on poultry farms within two years, which gives us a fantastic story to share, demonstrating that animal welfare is front and centre.

"The award also provides funding for me to participate in capacity-building activities, and I have selected to attend an entrepreneurial congress and creative leadership thinking workshop to enhance my skills in research and business collaboration."

DryRice research runner up

Associate Professor Jaquie Mitchell from the University of Queensland was awarded the 2023 AgriFutures Research Award runner-up for her project 'Traits of importance for aerobic 'DryRice' varieties for the Riverina region, which focused

on enhancing rice genotypes and ensuring sustainable development in the rice industry.

"In southern NSW, we need rice varieties adapted to aerobic growing conditions to conserve water and tackle rising irrigation costs," Dr Mitchell said.

"Our pre-breeding project developed screening methods and linked genetics to traits, maximising productivity of rice in a reduced water input system while ensuring cold tolerance in varieties.

"Our aim was to combine physiology with genomics to gain an understanding of the genetic basis for traits contributing to adaptation to aerobic conditions.

"Assuming an underlying cold tolerance in combination with appropriate agronomy, this will lead to opportunities for commercial aerobic production and improvement in water productivity at the farm level.

"To have our research recognised as part of the AgriFutures

Research Awards is validation for all the hard work we have put in to get to this point, but also for the importance of ongoing research in driving sustainable outcomes for the future of Australian agriculture."

Now in their second year, the annual AgriFutures Research Awards seek to acknowledge excellence in research and recognise the valuable contribution researchers have made towards the advancement of Australian agriculture.

AgriFutures Austral-

ia acting general manager levied and emerging industries Amanda Olthof said AgriFutures was proud to recognise the outstanding efforts of researchers such as Dr McCarthy and Associate Professor Mitchell.

"Their dedication and expertise will undoubtedly have a lasting impact on the industry, and we look forward to supporting them as they continue to drive positive change and innovation in Australian agriculture," Ms Olthof said.

"The winners were

invited to attend the prestigious AgriFutures Australia Summit event where they were presented with their award, and also have the opportunity to present their research at the AgriFutures evokeAG event in Perth early next year, providing a platform to connect and collaborate with mentors, farmers and investors from the agrifood innovation community."

To find more information on the winning projects, visit agrifutures.com.au/our-industries



Developed by Dr Cheryl McCarthy, the 'Novel detection of chicken welfare using machine vision' project will see the development of a proof-of-concept system for monitoring chickens and their behaviour in chicken sheds.



Brotzeit-Eier are colourful boiled eggs packaged for lunch and dinner that are eaten with bread and cold cuts. Photo: Rewe



Free range hens can interact with wild birds and wildlife when they spend time outdoors and can even share the same water resources accessed by egg farms.

Useful disease information

AUSTRALIA'S egg sector is conscious of the numerous disease risks posed to laying hens – particularly free range flocks – by wild birds and other animals.

This is because free range hens can interact with wild birds and wildlife when they spend time outdoors and can even share the same water resources accessed by egg farms.

I was interested to recently learn that there was an organisation devoted to the healthiness of wild animals at a national level.

Wildlife Health Australia is the coordinating body for wildlife health in this country.

Something of relevant interest to free range egg producers is that WHA publishes information in relation to avian influenza that can be found in wild birds in various states.

To discover more, go to wildlifehealthaustralia.com.au/DiseaseIncidents/OngoingIncidents.aspx#HPAI_Info

WHA builds a network of government and private stakehold-

by MELINDA HASHIMOTO
CEO

ers to help better manage wildlife health and its potential impact on Australia's biodiversity, other animals, human health and trade. According to WHA, when serious disease outbreaks occur in wild or native animals, their role is one of communication and coordination in the "provision of technical information to assist response agencies and stakeholders."

The free range egg industry has an interest in knowing of the risks of avian influenza in non-poultry animals surrounding their properties.

These German boiled eggs are not for Easter

As many were aware, I was recently on leave overseas and I wanted to share with you a

novel idea from Germany that I found very interesting.

It's no secret that I love hard-boiled eggs. Brotzeit-Eier are just that.

'Brotzeit' literally translates to 'bread time'.

These are colourful boiled eggs packaged for lunch and dinner that are eaten with bread and cold cuts.

At first glance, many foreigners think these eggs are the Easter variety.

But these brightly coloured hard-boiled eggs are consumed in Germany year-round.

The thick coloured outer-lining actually contains a natural resin that forms a protective coating around the hard-boiled egg – preserving it for up to three months.

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Umami scrambled eggs positively burst with flavour.



When feeling a little down, a brekky of bacon and eggs brings you back up again.



Home-cooked chicken and vegetable soup works wonders in winter.



Roast chicken and pumpkin at the very French La Lune restaurant in East Fremantle was très magnifique.

Priceless poultry saves in every way

VERSATILE, nutritious and affordable spring to mind when I ponder poultry and eggs.

With inflationary pressures putting the squeeze on eating in, and eating out for that matter, smart protein choices invariably now simply must embrace eggs and chicken.

By way of example, of late I've been buying 2kg packs of fresh mixed chicken pieces from my local Aldi for \$8.

At \$4/kg, it's remarkable value.

I understand Hazeldene's supply the Broad Oak Farms branded product to Aldi stores across Australia.

As an aside, I fess up that I have a \$4/kg price point limit for feeding my ravenous Blue Heeler, so she gets to share some of these cheap chicken pieces.

Djilba's favourites are the wings and drumsticks, raw of course.

As for mine... well, cooked in a curry, all pieces are perfect.

Duck, while never as cheap as chicken, is a genuine flavour step up when it comes to poultry.

At a friend's home recently, I drooled at the very sight of the roast duck pieces, leg and breast, before I'd even plated them up.

Check out the table photo and you'll see why.

Friend and very professional amateur chef, Rizza is quite the foodie.

Thank you Rizza and Jen for yet another great night out, spent 'in' at yours that is.

On a much less glamorous note, I recently enjoyed a blast from the past when I salvaged my dear departed mother's old egg beater from the bottom of a kitchen drawer to make a quick non-alcoholic egg flip for an unwell little one.

Though I didn't have the essential vanilla – nor did I add sugar – the

Cant Comment by BRENDON CANT



chef-like note, this winter I've been indulging in chicken and vegetable soups – all made easily and roughly with lots of chopping followed by slow simmering.

Hearty and healthy and just what the doctor ordered for a cold winter's day.

So far – touch wood – I've avoided any winter lurgies.

Though not wanting to count my chickens before they've hatched, I'll credit the soups for taking care of me... so far at least.

three-year-old managed to take a few sips, with me happily downing the balance.

I warmly recall enjoying egg flips when I was sick as a small child.

Seems like it still does the trick, particularly when followed by bacon and eggs.

What child doesn't enjoy bacon and fried eggs when struggling with an ugly winter cold?

Scrambled eggs accompanied by bacon are likewise synonymous with a hearty pick-me-up brekky.

Of course, when dining out, scrambled eggs can take on a somewhat exotic flavour.

Such was the case with a breakfast a while back at Two Dogs Laughing, a cafe near my home.

Their umami scrambled eggs called to mind the flavours I might expect when in Malaysia for 10 days later this year – along with bountiful beef rendang!

Umami is one of the core five tastes – joined by sweet, sour, bitter and salty.

Umami means 'essence of deliciousness' in Japanese, with its characteristics often described as the meaty savory tastiness that deepens flavour.

It works for me.

Chef and owner at Two Dogs Laughing, Elizabeth 'Libby' Peasley, is a passionate and creative chef who loves mingling and laughing with her regular diners, all of whom will have been greeted at the door by her much-loved rescue pooch 'Boncie'.

Libby has a vast knowledge of the culi-

nary world and is well known for her unique and crunchingly powerful flavour profiles.

"Every ingredient we use in life is never the same, the heat of a chilli, the sourness of citrus, the sweetness of honey, and this is why I spend precious time tasting and balancing all the flavours as they develop in a dish," she said.

A lover of all things local, sustainable, native and smoked, Libby is all about serving up deliciously wholesome tucker.

On a less professional



Egg flip 'fillip'.



Great value chicken at Aldi.



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Help shape application of biosec protection levy

■ Have your say on the levy before October 6

THE Department of Agriculture, Fisheries and Forestry has opened consultation to help shape the way the new biosecurity protection levy will be applied.

The 2023-24 Federal Budget delivered sustainable funding to Australia's critical biosecurity system.

This included \$1.03 billion over the next four years and an ongoing \$267 million per year after that, introducing a long-term funding commitment that removes the challenge created by a history of short-term terminating programs.

On July 1, the government also uplifted cost recovery fees and charges to address ris-

ing system costs and ensure that risk creators are paying their fair share.

As part of the next stages of the sustainable funding reforms, the government announced a new biosecurity protection levy as a mechanism for producers, as major beneficiaries of biosecurity controls, to contribute to this long-term commitment.

The proposed levy would start from July 1, 2024 and is intended to collect around \$50 million per year.

Deputy secretary of biosecurity and compliance Dr Chris Locke said the funding mechanism was to be designed in keeping with the shared responsibility approach of this

year's budget – ensuring both those who create risk and those who receive significant benefits make reasonable contributions.

“The amount producers are being asked to contribute is equivalent to 6 percent of Commonwealth biosecurity funding in 2024-25,” Dr Locke said.

“By comparison, importers will contribute around 48 percent and the taxpayer will contribute around 44 percent.

“We want to make sure that biosecurity protection levy arrangements are practical, and that implementation and administration costs are as low as possible for all parties.

“I encourage those with an interest in the biosecurity protection levy to get involved in the consultation.”

Visit the biosecurity protection levy consultation website for more information – haveyour say.agriculture.gov.au/biosecurity-funding – and to have your say by October 6, 2023.

Other cost recovery arrangements

“We’re asking those who benefit the most from strong biosecurity protection to make additional contributions,”

Dr Locke said.

“And by sharing cost recovery arrangements across several areas, we’re minimising its impact.

“From July 1 this year, the government increased cost recovery for delivering biosecurity activities for risk creators and importers, representing an average price increase of 28 percent across biosecurity fees and charges.

“Those services are now fully cost recovered for the first time since 2015.

“The government has also committed to introduce a new cost recovery arrangement to be applied to low-value goods imported into Australia by sea or air, because up until now, taxpayers have been paying for biosecurity clearance activity on imported goods below \$1000.

“It will also be increasing the international passenger movement charge from \$60 to \$70 to help fund the cost of screening passengers for biosecurity risk at the airports.”

More information is available on the DAFF website under ‘Sustainable funding to strengthen biosecurity’.



The funding mechanism was designed to ensure both those who create risk and those who receive significant benefits make reasonable contributions. Photo: AAP Julian Smith



Deputy secretary of biosecurity and compliance Dr Chris Locke.



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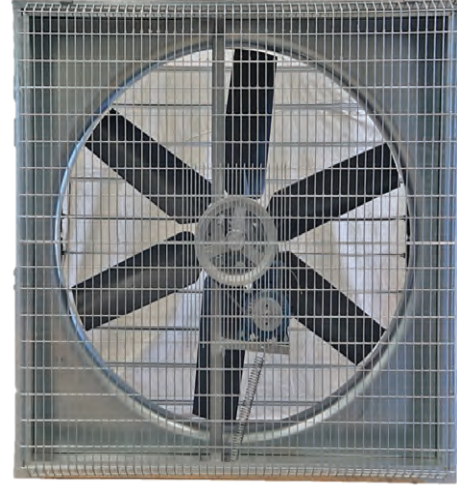


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Australian farm debt skyrockets

Loans increased by \$9.2b from 2022

THE latest agricultural lending statistics provided by the Australian Prudential Regulatory Authority show an increase in aggregate lending to the farm sector of 9 percent in 2021-22, according to a government-issued press release.

ABARES executive director Jared Greenville said the cumulative value of loans outstanding has increased from \$100.7 billion at June 30, 2021 to \$109.9 billion at June 30, 2022.

"The data also shows lending to the farm sector since 2016-17 has increased at an accelerating rate each year," Mr Greenville said.

Adding for broadacre and dairy farms – which collectively accounted for around 68 percent of the value of farm output in 2021-22 – the two main reasons for borrowing had been to fund land purchases and for working capital.

"Analysis of ABARES farm survey data shows that much of this increase in borrowing has been for on-farm investment, particularly land purchases," Mr Greenville said.

"Debt finance is of critical importance, both

to fund new investment and manage variability in revenue and profit."

Until recently, rising land prices and low interest rates have provided farmers with greater equity to support increased borrowings, while historically high farm incomes in most agricultural industries have substantially improved farmers' ability to service debt.

Up to the end of 2022, the average proportion of farm cash income consumed by interest payments had trended down in recent years, due to higher farm incomes and lower interest rates.

"In 2021-22, the average proportion of income consumed by interest payments was 8 percent for broadacre and dairy farms – an historical low," Mr Greenville said.

"However, this proportion is likely to have increased since, as a result of recent increases in interest rates.

"The impact of higher interest rates will be felt by some farms more than others.

"Those farms with relatively high-debt servicing burdens will be most susceptible to interest rate increases, if this were combined with a downturn in farm cash income, it would impact their ability to service debt."

This report draws together data collected by APRA on behalf of the Australian Government Department of Agriculture, Fisheries and Forestry.

Data are also drawn from the Reserve Bank of Australia, the Regional Investment Corporation and ABARES farm surveys.



Higher interest rates will be felt by some farms more than others.

Local producers excited as micro abattoir draws closer

EIGHT years after its inception and almost 12 months after construction began, the Murray Plains Meat Co-Operative's micro abattoir is reaching the final stages of licensing approval.

The project will enable producers to have full control of the supply chain to ensure the ethical treatment of their animals and to value add their produce.

The construction of the facility was overseen by Steve Tamplin

of Tablelands Meats, who has extensive experience in owning and operating a micro abattoir.

Construction of the build was delayed due to an administrative error that saw the land on which the abattoir was to be built classified as 'community land' instead of 'operational land'.

In having the land reclassified, a public hearing was held on February 3, 2022.

The meeting, run by Edward River Council director infrastructure

and independent chair Mark Dalzell, found in favour of the reclassification after addressing the concerns raised.

In recent weeks, Murray Plains Meat Co-Operative director and chair Lauren Mathers stood down from her positions on the board and discussions are underway to appoint an external chair moving forward.

The facility will process a wide variety of animals from poultry up to beasts with a maximum live weight of 500kg.



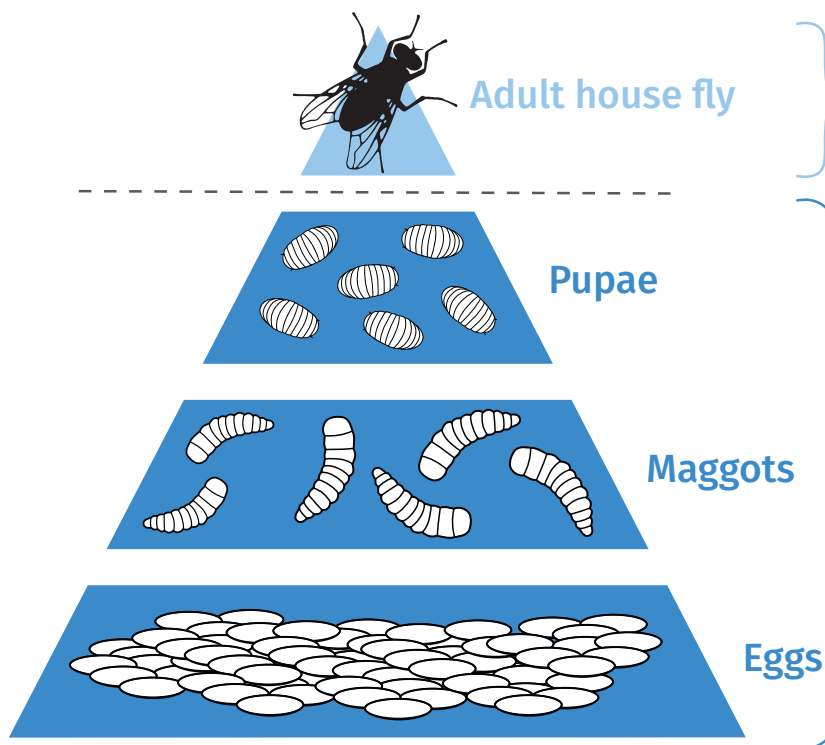
The Murray Plains Meat Co-Operative's micro abattoir reaches the final stages of licensing approval. Photo: The Koondrook and Barham Bridge Newspaper

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Higher greenhouse gas emissions for salmon are likely due to the large source from salmon waste. Photo: Barnabas Davoti



Reducing the pressure on the environment from chicken farming would require changes to feed ingredients, where feed is sourced or production areas. Photo: Sami Aksu

Environmental footprint research into farmed chicken and salmon can guide consumers

SWITCHING from meat to plant-based protein is one way to reduce greenhouse gas emissions and consume less of the planet's natural resources.

But while chicken and salmon are often considered better choices than red meat, how do we calculate their true impacts?

In our new research, we set out to quantify the environmental footprint of broiler chicken and farmed salmon production, considering greenhouse gas emissions, nutrient pollution, land or sea disturbance and freshwater use.

With a more comprehensive understanding of the pressures on the environment from these food production systems, we can confirm both are better than beef or pork, and chicken is slightly better than salmon, but neither is as responsible as plant-based foods.

Environmental pressures add up

Environmental pressures from broiler chicken and farmed salmon occur not only on the farm where the animals are raised but also at the source of the feed.

Both chicken and salmon are typically fed legumes and grains such as soybean and wheat, as well as fishmeal and oil from herrings, anchovies and sardines.

That's why their environmental footprints cover both land and sea.

While farmed salmon and chicken are among the most environmentally efficient fed animal products from their respective realms, their production nevertheless puts considerable pressure on the environment.

Major sources of greenhouse gas emissions include energy used in these intensive farming operations, and methane and nitrous oxide from animal excrement.

Farms can manage these emissions by choosing to use renewables, reducing energy use by being more efficient and better managing animal waste.

Disturbance considers the land and sea area taken up by farm infrastructure as well as the area used to produce feed.

On land, feed disturbance is more straightforward as land clearing displaces habitats and animals to grow crops.

For fisheries, it is more complex since different types of fishing gear cause different levels of disturbance to habitats and fish that are caught.

Freshwater is used to irrigate crops, provide drinking water for animals and service water for cleaning pens and cooling animals.

Nitrogen and phosphorus from animal excrement and synthetic fertilisers can pollute the surrounding environment.

Run-off or discharge into waterways is a major source of nutrient pollution, which can cause algal blooms.

We combined these four pressures into a single metric and mapped its distribution across the world.

This allowed us to understand where and how much environmental pressure chicken and salmon production exert on the environment to better inform food system sustainability.

Global environmental footprints – where Australia stands

We found farmed chicken and salmon have huge environmental footprints, but the vast majority of 95 percent were concentrated in only 5 percent of the world.

The countries with the largest 'chicken footprints' are the US, China and Brazil.

For salmon, Norway, Chile and the United Kingdom top the list.

These countries are also the largest producers.

Australia seems to have more environmentally friendly farms for both chicken and salmon, compared with other countries.

For chicken, Australia scrapes into the top 20 biggest producers out of 224 chicken-producing countries but is in the top tier for environmental efficiency at the farm site.

We define efficiency as the environmental pressure per tonne of food produced.

For salmon, Australia is the sixth-largest producer out of 11 commercially producing

countries and has the second-best efficiency.

Maintaining or improving this efficiency now and in the future will help make Australia a leader in sustainable food production.

Australia mostly produces crops for chicken and salmon feed, rather than marine ingredients.

Several countries produce similar levels of feed with better feed efficiency scores, so there is room for improvement.

Chicken or salmon

Compared with salmon, chicken has lower environmental efficiency across all categories except freshwater use.

This can partly be explained by the bird's life cycle – six or seven chickens can typically be produced in the same location in a given year, taking 6-8 weeks to reach slaughter weight, whereas salmon can take 12-24 months to reach harvestable size – excluding the land-based freshwater period.

Higher greenhouse gas emissions for salmon are likely due to the large source of greenhouse gas emissions from salmon waste in the form of nitrous oxide.

Higher disturbance in salmon can be traced back to the large footprint of fishmeal and fish oil production from capture fisheries used in feed.

We assumed no freshwater use in on-farm production of salmon, only crop feed production, explaining chicken's higher freshwater use.

On the question of whether it's better to eat one or the other, it's worth considering local conditions and effects on the environment.

High freshwater use in a drought prone area, for example, is likely to have more detrimental effects on habitats and species nearby.

In general, fed animals have higher environmental footprints than non-fed products such as crops and shellfish.

But, if you like to eat meat, then chicken and salmon are both good options compared with beef and pork.

Pathways to sustainability

Feed was a large source of environmental pressure in our study, accounting for 78 percent of broiler chicken and 67 percent of salmon pressures.

Some might be surprised that chicken has an environmental footprint in the sea.

That's because more than 520,000 tonnes of

fishmeal and fish oil is used to feed chickens.

Similarly, salmon has a footprint on land.

We found some 2.3 million tonnes of crops such as soybean and wheat were used in their feed.

Reducing the pressure on the environment from salmon and chicken farming would require changes to feed ingredients, where feed is sourced or production areas.

As an example, because we included ocean disturbance from fisheries in our metric, we found that crops are generally more environmentally efficient feed ingredients than fishmeal or fish oil.

However, this switch would likely increase the competition for resources such as land and water from these two production systems.

Novel feed ingredients such as microalgae, bacteria or insects have the potential to replace fish in feed, further reducing pressure on the environment from salmon and chicken farming but cost of feed and impacts on nutrition also need to be considered.

Manure management could also play a bigger role, as it contributes to both nutrient pollution and greenhouse gas emissions.

Blurring the lines between land and sea

Our study provides a fresh perspective to the debate around food system sustainability, with a big-picture view of the four main environmental pressures from chicken and salmon farming.

These production systems bridge the divide between land and the sea.

Raising chickens involves extracting resources from the marine environment as well as cropland.

Similarly, salmon are fed from both the ocean and the land.

This leads to questions over resource competition, production advancements in aquaculture relative to chicken production and how changes in feed choice or availability may alter the footprints of these food sectors in the future.

But for now, on the important question of what to eat for dinner, it's fair to say that both farmed salmon and chicken are environmentally friendly options, with chicken only slightly ahead on the sustainability stakes.

Dr Caitie Kuempel
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Check list of diseases that impact egg production

DURING the first half of this year, we saw outbreaks of various diseases in laying flocks in some parts of Australia that had unwanted consequences for egg producers.

Quite a few diseases lead to the destruction of entire flocks and can spread to neighbouring properties.

Dr Rod Jenner is a vet and poultry industry consultant who has helped to devise the following check list of diseases that are the main concern for the nation's egg industry.

Avian influenza

Avian influenza or bird flu is a type A influenza virus.

It is lethal to poultry and is potentially fatal in humans.

Bird flu spreads between both wild and domesticated birds.

It has also been passed from birds to humans who are in close contact with poultry or other birds.

Newcastle disease

Newcastle disease is caused by a para-myxo virus and is highly contagious.

Birds affected by this disease are chickens, turkeys, geese, ducks, pheasants, partridges, guinea fowl and other wild or captive birds,



Egg Farmers of Australia

including ratites such as ostriches and emus.

Australian egg producers are required to vaccinate their hens for Newcastle disease.

There is an additional risk in that strains of Newcastle disease could be introduced into Australia and then mutate.

Infectious laryngotracheitis

Infectious laryngotracheitis is a highly contagious respiratory disease of chickens.

It can cause significant problems in unvaccinated or poorly vaccinated flocks.

Salmonella enteritidis

Salmonella enteritidis is a bacterial disease of poultry and can cause foodborne illness in humans such as gastroenteritis – commonly known as gastro – when contaminated food is consumed.

The infection is almost impossible to eradicate from a flock, so birds must be euthanised.

The disease can even be carried inside eggs.

Salmonella typhimurium

Salmonella typhimurium is the most common cause of human gastroenteritis that can be attributed to the consumption of eggs.

Infection of hens is usually subclinical and difficult to detect.

Biosecurity measures to keep it out of farms, along with vaccination and in-feed preventatives, are the most effective control measures.

Salmonella pullorum

The Australian commercial chicken industry is free of salmonella pullorum.

Testing does occur in order that a certificate can be issued providing evidence of an SP-free flock.

This is important for export purposes.

Salmonella gallisepticum

Salmonella gallisepticum is commonly involved in a disease known as polymicrobi-

al chronic respiratory disease.

In layer hens and breeders, it is usually subclinical but causes a reduction in the number of eggs laid per hen over the production cycle.

Once infected, flocks can become carriers.

This virus is exotic to Australia.

Overseas strains

The egg industry must be vigilant to signs of any form of foreign disease.

The key issue is that overseas disease incursions could mutate and combine with local strains, leading to new variants.

This was the case for COVID-19 in humans.

Links

The following links provide further resources on poultry disease for egg farms.

Agriculture Victoria avian influenza – agriculture.vic.gov.au/biosecurity/animal-diseases/poultry-diseases/avian-influenza-bird-flu

Australian Eggs avi-

an influenza guidelines – australianeggs.org.au/for-farmers/resources/avian-influenza-guidelines

Australian Eggs salmonella-enteritidis response plan – australianeggs.org.au/what-we-do/leading-research/salmonella-enteritidis-response-plan

Agriculture Victoria salmonella enteritidis – agriculture.vic.gov.au/biosecurity/animal-diseases/poultry-diseases/salmonella-enteritidis

Dr Rod Jenner
Poultry Vet and Consultant



Poultry vet and consultant Dr Rod Jenner.



An Australian free range egg farm. Some diseases lead to the destruction of entire flocks and can spread to neighbouring properties.

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Learning from previous avian flu outbreaks



RESEARCHERS at ETH Zurich have analysed the bird flu epidemic caused by the H7N9 strain that affected China from 2013 to 2017.

New phylogenetic trees will help to improve monitoring of future bird flu epidemics. There are many different bird flu viruses.

Besides the subtype H5N1, which has been spreading in the European wild bird population for several years and poses a threat to local poultry farms, there is also, for instance, subtype H7N9.

This one caused poultry outbreaks in China from 2013 to 2017 and also infected humans who had close contact

with live poultry.

A total of 616 people in China were reported to have died from an infection with this subtype.

Experts are tracking how the different bird flu viruses are developing.

With both H7N9 and other subtypes, there is a risk that mutations in their genome could allow for human-to-human transmission, raising the threat of a pandemic.

That's why Claire Guinat, a former post-doctoral fellow in ETH Professor Tanja Stadler's group, studied the waves of the H7N9 epidemic in China between 2013 and 2017.

This involved the researchers analysing pub-

lished gene sequences of H7N9 viruses isolated from infected humans and poultry to build phylogenetic trees.

The researchers from the Department of Biosystems Science and Engineering at ETH Zurich in Basel aimed to understand how the disease spread at poultry markets, and to draw conclusions that would help improve future efforts to monitor and control bird flu outbreaks.

Live poultry markets play a key role

In China, chickens and other poultry are often sold alive at markets.

It has long been known that these markets play a key role in bird flu transmission – both from animal to animal and from animals to humans.

With their phylogenetic analyses, the researchers at ETH Zurich have confirmed that the H7N9 virus was likely circulating in poultry for several months before being discovered in both poultry markets and humans.

Their results also suggest that more poultry markets may have been affected than previously believed.

Especially between 2013 and 2016, when the virus caused few symptoms in poultry, making it challenging to detect outbreaks.

As the virus mutated and caused more severe symptoms in poultry from 2016, it became easier to recognise affected poultry.

ETH Zurich professor Dr Tanja Stadler said, "Our findings highlight the importance of not waiting until bird flu cases are discovered, because then the virus has probably already been circulating for quite some time."

"Instead, it would be wise to continuously monitor the health of the animals in their stalls and at the live poultry markets."

Still on alert

The researchers primarily focused on analysing viruses from the metropolitan regions of Shanghai and Guangdong.

Their findings suggest that the virus had widely circulated in poultry markets in these areas.

While there is a theoretical possibility that the virus was introduced repeatedly between regions due to transporting infected birds, the phylogenetic trees indicated no clear pattern of such a regular virus introduction between regions.

This indicates that the live poultry markets in urban regions played a key role in the disease's incidence.

Lead author of the study, Ms Guinat, who now works at the Institut national de recherche pour l'agriculture, l'alimentation et l'environnement in Toulouse said, "Given the severity of epidemics like this, it is crucial for every affected region to take immediate action to halt the virus spread."

The H7N9 epidemic was restricted to China – the country began to vaccinate poultry against this pathogen in 2017.

Together with improved hygiene measures in poultry markets, the authorities were able to mitigate the epidemic in animals and greatly reduce cases of transmission to humans.

But isolated outbreaks of the disease do still occur.

The last human death resulting from complications of an H7N9 infection was in 2019.

Because virus genomes mutate constantly, there remains a risk of the H7N9 virus becoming a threat to humans again.

Public health experts thus remain on alert.

To summarise:

- The bird flu epidemic in China from 2013 to 2017 showed that pathogens can circulate in poultry farms for several months before being detected

- Viruses spread quickly at live poultry markets

- The study authors suggest to continuously monitor the animals' health.

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Dr Tanja Stadler from ETH Zurich.

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Understanding ranging behaviour could help improve management and design to ensure optimal opportunities. Photo: Mark Stebnicki

Ranging behaviour of commercial free range broiler chickens

RESEARCHERS from the universities of Melbourne, Sydney and Bern authored a study on the factors relating to flock-ranging behaviour of commercially produced free range broiler chickens, the following are excerpts from that research.

Free-range chicken meat consumption has increased.

However, little is known about how meat chickens use the outdoor range.

Understanding ranging behaviour could help improve management and shed and range design to ensure optimal ranging opportunities.

We tracked 1200 in-

dividual broiler chickens in four mixed-sex flocks on one commercial farm across two seasons.

More chickens accessed the range in summer than winter.

Chickens that accessed the range in winter did so less frequently and for a shorter period of time daily than chickens ranging in summer.

The number of chickens ranging and the frequency and duration of range visits increased over the first two weeks of range access and stabilised thereafter.

More chickens entered and exited the range through particular doors in the shed.

More chickens ranged in the morning and

evening compared to the middle of the day.

Ranging behaviour decreased with increased rainfall and shed dew point.

This study provides knowledge regarding ranging behaviour in commercial conditions that may guide improvements on farm to provide chickens with optimal ranging opportunities.

This study is the first to monitor individual ranging behaviour of free range broiler chickens on a commercial farm without altering flock size or shed environment.

Tracking chickens through radio-frequency identification revealed higher estimates of ranging behaviour

than previous studies using scan-sampling methods.

Ranging behaviour increased from the first day of range access for two weeks and stabilised thereafter in summer flocks.

Fewer chickens accessed the range in winter flocks than summer flocks.

Chickens that did range in winter flocks did so less frequently and for a shorter period of time compared to ranging chickens in summer flocks.

However, ranging behaviour was relatively consistent within each season.

We found little evidence that seasonal differences in ranging behaviour were solely or directly related to variation in weather.

Differences in ranging behaviour between seasons may also be due to reduced ranging opportunities in winter – number of days the range was available and length of time – and the time of day the range was available, though these factors are often inherently linked to weather conditions permitting ranging.

The study highlights the importance of obtaining a detailed understanding of the influence of range and shed design and environmental and management factors to provide commercial broiler chickens with optimal conditions to range.

This research tracked individual broiler chickens on a commercial farm without segregating part of the shed, flock or range.

Our results show that not all chickens accessed the outdoor range when given the opportunity.

Chickens accessed the range on average three to four times for 1.5-2 hours every two to three days for eight to 26 minutes per visit.

Chickens did not immediately access the range when first given the opportunity, waiting an average of four days before accessing the range.

The number of chickens on the range at one point in time was low, particularly in winter flocks, 7.8-10.6 percent in winter and 32.8-36.7 percent in summer, similar to previous studies using scan sampling methods.

However, the actual number of chickens that accessed the range over the course of the study was much higher – 31.2-32.8 percent in winter and 75.4-87.3 percent in summer, highlighting limitations in the scan-sampling method.

Clearly, our under-

standing of commercial free-range broiler chicken ranging behaviour and implications for welfare will improve with advancement of technology.

Currently, there is little technology that is affordable, reliable and feasible for tracking an individual chicken's precise location indoor and outdoor on commercial farms.

We found lower flock percentages of range use compared to previously reported RFID studies in Australia and internationally, which may reflect differences in management, flock size, range design, strain – growth rate and length of time the range is available – or geographical differences including climate.

Segregating part of the flock may also have increased ranging behaviour in the previous RFID studies, given that the provision of vertical panels – as an example, fences – increases ranging behaviour in free-range laying hens.

Furthermore, the present study was conducted on larger flock sizes than previous studies.

We provide evidence of factors that alter ranging behaviour, including time and length of range exposure, shed design and shed environment.

The number of range visits and duration of range visits increased over time.

Whether this is an effect of range exposure and familiarisation and or a reflection of age and development remains to be determined.

The increased frequency of range visits with age we observed, in agreement with other studies, does not reflect broiler chicken age-related inactivity that has been previously reported in indoor and free range housed broiler chickens.

However, we could not identify activity levels, and ranging visits may include time spent resting and lying down.

More than 90 percent of chickens that accessed the range in summer flocks did so prior to partial depopulation for slaughter.

Furthermore, ranging behaviour – visits and duration – and the number of chickens on the range increased over the first two weeks until partial depopulation but stabilised between partial depopulation and complete depopulation in summer flocks.

Hence, we found no evidence that additional ranging opportunities provided beyond two

continued P13

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Broiler flock ranging behaviours and variability factors

from P12 weeks further increased ranging behaviour.

In Australia, the typical length of time a fast-growing broiler chicken has to access an outdoor range is four weeks – given that range access is typically provided from 21 days of age – but it can be as little as 15 days if the individual is transported for slaughter at partial depopulation.

We provide evidence that ranging opportunities prior to partial depopulation for slaughter are sufficient to establish ranging behaviour, relative to chickens that are permitted to range until complete depopulation.

Fewer chickens accessed the range in winter than summer, in agreement with previous studies.

Furthermore, they made fewer visits and spent less time on the range in winter, compared to summer.

Ranging behaviour between flocks in the same season was relatively consistent, despite slight differences in flock size and range designs.

Weather variables did not explain much of the variance in the number of chickens on the range in either season – rainfall in winter and shed dew point in summer

had the greatest effect on ranging behaviour, each explaining less than 12 percent of the variance.

Wind speed, rainfall and indoor temperature each accounted for less than 5 percent of the variance in summer flocks.

This may reflect the relatively few days of data collection and or minimal variation within seasons, or that environmental conditions alone do not directly account for most of the variation observed between seasons.

Increased opportunities to range for summer flocks compared to winter flocks may explain differences in ranging behaviour between seasons.

The provision of more ranging opportunities – both number of days and hours per day – was linked to a greater number of chickens on the range, visits to the range and time spent on the range.

Relationships between increased opportunities and increased ranging behaviour – number of chickens and time spent on the range – have also been reported in laying hens.

As a consequence of shorter periods of ranging opportunities in winter flocks, the time of day when the range

was available also differed between seasons and may partly explain variation in ranging behaviour.

Summer flocks showed evidence of time-of-day effects on ranging behaviour, displaying a diurnal ranging pattern in agreement with previous scan sampling studies.

Peak ranging times, including the number of chickens on the range and the number of range visits, occurred between 9-10am and 6-7pm.

Diurnal ranging patterns observed in summer flocks likely reflect diurnal rhythms.

Broiler chicken foraging behaviour is typically displayed in diurnal peaks in the morning and evening and can be altered with changes in light intensity.

The range offers an ideal environment for foraging behaviours – indeed foraging and ground pecking behaviours have been shown to be greater on the range compared to inside the shed.

Range access was rarely provided during these preferred times throughout winter.

The typical pop-hole opening time in winter was between 11am-12pm, closing between 4-5pm, compared to

summer opening time 9-10am, closing between 9-10pm.

As such, it may be that broilers do not compensate by ranging at alternative times of the day when range access is not provided at favoured ranging times.

Evidence of range use to avoid negative stimuli was anecdotally observed in the current study, as the number of chickens on the range and the number of first-time range users increased on the day the

continued P14

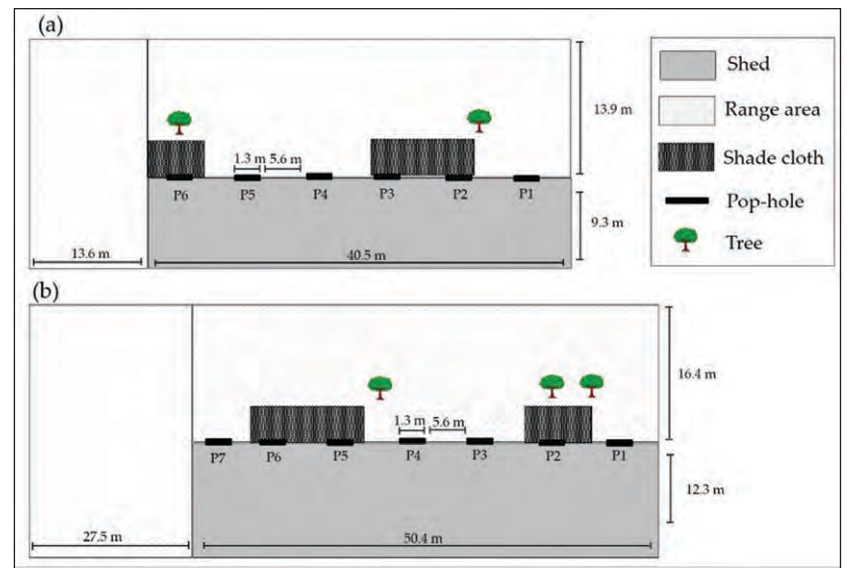


Figure 1: Diagram of study sheds and range areas (a) shed one, flocks A and C and (b) shed two, flocks B and D. Pop-holes are numbered P1-P7 sequentially from the front of the shed (shed access point).

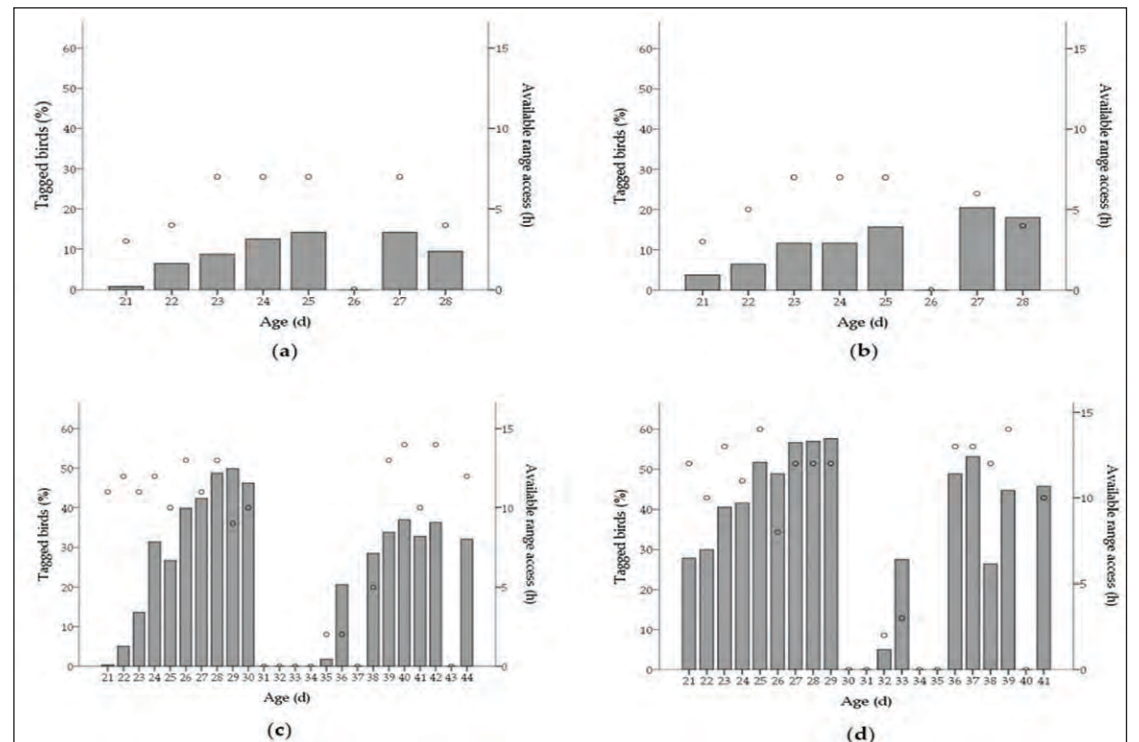


Figure 2: Bars indicate the proportion of chickens that accessed the range (% successfully tracked chickens left y-axis) daily in winter (a) flock A (b) flock B and summer (c) flock C (d) flock D. Circles indicate time (hours right y-axis) the range was available each day.

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Broiler flock ranging behaviours and variability factors

from P13
litter was turned in winter flocks.

Turning the litter is often a critical management practice in commercial broiler sheds to maintain good litter quality and prevent associated effects on chicken welfare.

However, turning the litter may cause fear and stress, though controlled studies are lacking.

The range area could offer an escape from this negative experience, though this was merely an observation on one day in two sheds.

Unfortunately, we did not track broiler chickens after this event and therefore do not know if chickens that accessed the range for the first time during litter turning would continue ranging on subsequent days.

Higher dew point and temperature inside the shed was predictive of fewer chickens on the range in summer flocks, whether this relationship was similar in winter remains unknown as we did not take these measures.

This may be additional evidence that range use may be associated with avoiding negative stimuli such as sub-optimal shed conditions.

However, causation cannot be inferred in this study, and it is possible that these findings indicate the effect of chickens on the shed environment through less chickens ranging, hence higher shed stocking density and consequently higher metabolic heat production raising indoor shed temperature and dew point, rather than environmental conditions in the shed encouraging chickens to range.

These results do highlight the importance of monitoring the shed environment in relation to ranging behaviour and considering that range access may be related to negative stimuli rather than associated with a positive aspect of the range environment.

The influence of the indoor environment is an aspect often overlooked in ranging studies.

We observed a flock preference for specific pop-holes in both sheds – P2 and P3 in shed one, and P1 and P2 in shed two, see Figure 1.

We could not identify the characteristics of preferred pop-hole location and design, this could be related to areas with human disturbance, brooding areas, location of noisy fans at the rear

of the shed or protection from weather extremes – wind or ultraviolet light.

The preferred pop-holes did not appear related to resources on the range such as trees or shade cloths, despite range resources often being the focus of studies of ranging preferences.

Two of the favoured pop-holes were directly under shade cloths in shed one, but not in shed two, and not all pop-holes with adjacent shade cloth on the range were favoured in either shed.

Characteristics of favoured pop-holes may consequently affect range use and should be investigated further to optimise transition from the shed environment to the range area.

This study provides knowledge regarding ranging behaviour in commercial free range broiler chickens in relation to age and management and environment variability.

While obtaining data on commercial farms have numerous benefits, there are limitations.

We make the assumption that the tracked chickens in each flock are representative of ranging behaviour in the whole flock, as careful sampling methods when choosing focal

chickens to tag should theoretically provide a representative subsample of the population.

Of greater importance, the results were obtained from one farm in one region of Australia, therefore means of ranging behaviour may not be representative of the most extensive rangiers in the flock.

Furthermore, our study could not assess how far chickens ranged, what range locations are favoured or activity levels in the shed and range areas.

This study was conducted on one strain of broiler chicken that is typically housed in Australian commercial free range production systems – Ross 308.

Results may differ with slower growing strains used in other countries for free range production – Ross 708 or other strains, as an example.

As there are few scientific investigations regarding ranging behaviour in broiler chickens, this study provides important knowledge to direct further investigations into the factors affecting ranging behaviour.

The full article can be viewed at ncbi.nlm.nih.gov/pmc/articles/PMC5532569/



Want to know how individual broilers experience their environment? Researchers at Queen's University Belfast turned to developments in indoor tracking technology for help.

Backpack-wearing chickens help animal welfare studies

THE chicken sheds I conduct research in are enormous – over three-quarters the length of a football field and 20m wide.

In each house, around 28,000 near-identical broiler chickens – which are the type we use for meat – are reared in six-week production cycles.

My research helps farms find ways to improve the welfare of these birds.

This might involve adjusting their lighting, improving the design of perches or seeing how different breeds compare.

With so many animals per house, it makes sense to consider how any change affects the flock as a whole.

Thinking about broilers as a group also makes sense because they are considered to be a fairly homogeneous bunch.

One effect of selectively breeding these animals to maximise

how much meat they produce is that they all reach slaughter weight at the same time and all look very similar.

So, short of dispatching a student with very good eyesight to follow a single chicken around for weeks, monitoring an individual broiler under commercial conditions is impossible.

Researchers get around this by either monitoring 100 birds and assuming they represent the 28,000 or keeping 100 broilers in a pen, applying a change to them and hoping it is similar enough to commercial conditions to get valid results.

But what if we want to know how individual broilers experience their environment?

My colleagues and I in the Animal Welfare Unit at Queen's University Belfast turned to developments in indoor tracking technology for help.

Together with Icelandic software company Locatify, we have been working to adapt a commercial system that can show where individual chickens are in the house in real-time.

By attaching backpacks to chickens, we discovered just how different each bird is – and it could help us learn to meet their needs better.

Chicken backpacks

The ultra-wideband tags we used to monitor the movements of the chickens are usually found tracking forklifts in warehouses or attached to lanyards to track people as they move around offices or museums.

Ultra-wideband is a radio technology that works by recording how long it takes for a signal to move from the transmitter or tag to a receiver.

This data can be used to identify the object's position to within 30cm.

continued P15



A chicken with the tracking tag in a small square backpack.

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Backpack-wearing chickens help animal welfare studies

from P14

Crucially, the tags were small enough that they could be placed inside specially designed backpacks for chickens to carry over several weeks.

The system recorded their location and movement during this time, giving a clear view of how they used the house.

When I explained this concept to one of the farmers, he waved an arm towards one corner of the house and told me he was certain he saw the same chicken in that corner every morning.

Another farmer was convinced they roamed around as they pleased, using the whole house.

It turns out they were both right.

We were surprised to find that, despite how homogeneous the chickens and their environments are, there were still significant differences between their movement patterns.

We followed 17 chickens in our first trial with the new tracking system and, while one spent the majority of its time within 10m of the area I originally tagged it in, another visited over 97 percent of the house across a week.

We had another chance to see whether chickens preferred one bit of the house to another when we penned and then released the tagged birds after the initial observation week.

We wanted to see whether the chickens would return to the area we had collected them from, and a few did.

Three out of nine chickens collected from the back of the house made their way back there within 24 hours.

But five didn't return to those original spots for the rest of the production cycle.

Variety is the spice of life

So, why was there so much variation?

There were a few obvious influences on broiler movement that we looked at first.

Using one of the two methods outlined above, many studies have found that heavier birds, older birds and those with leg issues are significantly less active.

We struggled to match any of these issues conclusively with our tagged broilers.

The two heaviest broilers did roam around the house the least, but a number of lighter birds used less space than heavier ones.

Our one lame tagged broiler was recorded in 69 percent of the house, while a lighter broiler with a better gait occupied 43 percent.

We did see less activity as birds aged, though even this was not predictable and depended on the individual.

We couldn't even nail down a link between space use and activity, meaning that broilers exploring less of the house were moving around in their area as much as broilers using a larger amount of space.

Though all of this didn't produce the neat graphs I was hoping for, it did suggest that perhaps broilers aren't as homogeneous as we thought.

Like most animals, it makes sense that chicken behaviour is influenced by each individual's personality traits.

Perhaps broilers that are bolder are more likely to explore the house in detail.

Are more fearful

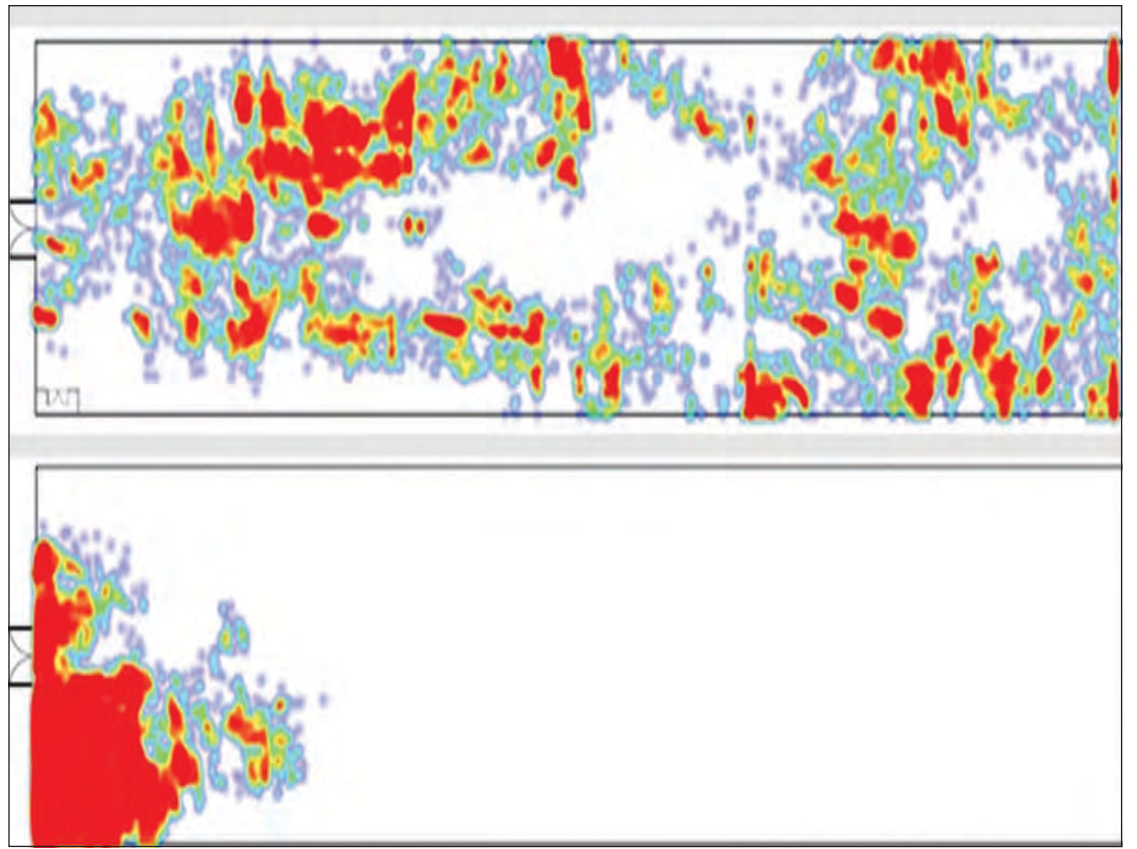
chickens more likely to be startled by farm staff or other birds and so keep moving around?

Do some chickens have better spatial awareness than others?

Are some more likely to form social bonds than others?

We hope to continue using this tracking technology to delve deeper into why particular broilers use space the way they do – and what changes can be made to create the best possible environment for the group and for the individual.

Mary Baxter
Queen's University Belfast



How two tagged broilers moved around the house during one week.

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Researchers were surprised to find that, despite how homogeneous the chickens and their environments are, there were still significant differences between their movement patterns. Photo: RSPCA

Dietary changes due to cost of living expenses

NEW research has revealed cost of living pressures are forcing diet-conscious Australians to pick cheaper sources of protein.

The research, commissioned by nutrition and food tracking app MyFitnessPal, showed 36 percent of respondents were now less likely to pick up red meat in their weekly shop, while 33 percent were shying away from protein bars and shakes.

MyFitnessPal fitness

coach and ambassador Luke Hines said rising prices are causing many Australians to rethink their dietary choices.

“With prices of beef surging 14 percent in a year between 2021 and 2022, it is no surprise to see Australians opting to eat less red meat,” Mr Hines said.

“Thankfully there are lower-cost alternatives to red meat, such as legumes, eggs and tofu.”

But he warns that

some of these alternative foods can be full of carbohydrates, so it’s important to keep track.

Popular protein-rich foods such as chicken (28 percent) and dairy (22 percent) have been found to be the top two food groups Aussies would look to increase for additional protein.

The research covered more than 1000 Australians nationwide, with data gathered between June 25-29, 2023.



MyFitnessPal commissioned research showing Australians are swapping red meat for chicken to maintain their protein intake. Photos: NCA NewsWire / Andrew Henshaw



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Lenard's celebrates 36 years selling poultry

LENARD'S is celebrating 36 years of family tradition as an Australian poultry retailer.

Founded by Lenard Poulter in 1987, the company has grown from a single store in Queensland to a nationwide franchise.

Lenard's daughter Kelly Beach and her husband Joel are now playing a pivotal role in the poultry business, so it still remains in the family.

Kelly's passion for the business and commitment to upholding her father's legacy are evident in every decision she makes.

“Lenard's is more than just a business to us – it's our family legacy,” she said.

“We are committed to continuing my father's vision of providing Australians with fresh high-quality

poultry products.”

The company operates on two fronts – franchising and manufacturing.

The franchising arm continues to thrive with many longstanding shops, such as Willows Townsville marking its thirtieth year of operation this year and the Caringbah Sydney store currently undergoing refurbishment after 11 years of successful operation.

The manufacturing team boasts employees who have been with the company for nearly two decades.

Mathew Turner and Natasha Wells both started their careers at Lenard's shops as teenagers and have been part of the manufacturing team for 19 and 14 years respectively.

Vicky, a longstanding employee with about 10 years experi-

ence in manufacturing, now works in the sales team.

Product manager Cameron Lee has 15 years of service at Lenard's under his belt and leads a product team that continually innovates to meet customer needs.

The team has recently launched new economical products such as Pockets, Lenny Pops, bulk packs and new sausage flavours that

are more accessible through independent retailers.

A new ready-to-heat cooked range is also set to launch soon.

In addition to these exciting developments, Lenard's is set to open a factory outlet in Capalaba.

This move marks an exciting new chapter for the company and opens up opportunities for more factory outlets across Australia.



A factory outlet is set to open soon in Capalaba Queensland, with new economical products such as pockets even more accessible.

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Aussie's red hot Sizzler is a winner

A GREAT Australian innovation, the Sizzler Hot Wash from Aussie Pumps is a real winner.

Running off a 240V 10-amp plug electric motor, the machine produces 1800PSI of pressure, matched with a 10LPM flow.

It has an impressive variable temperature range of up to 85C for sterilising, sanitising and cleaning at the same time.

Aussie Pumps chief engineer John Hales said, “That 85C matched with the pressure and flow of the pump is ideal for cleaning and sanitising poultry sheds, yards, vehicles and all livestock applications.”

“It's also ideal for cleaning grease in mechanic workshops and for machinery maintenance.”

The Sizzler comes mounted on a heavy duty steel chassis with four wheels and flat-free tyres.

A stainless-steel cover over the machine encloses a heavy duty 4-pole motor, driving a slow speed triplex pump.

“The pump and motor combo is a real winner,” Mr Hales said.

“The hardware store specials you see at low prices are normally 2-pole running at twice the speed of the Sizzler.

“We all know that means half the life and is really about the cost to manufacture, not the advantage to the user.”

Aussie Pumps is

known for product attention to detail and perfecting the application of its products to customer requirements. “Customers tell us their problems,” Mr Hales said.

“We work out how to solve those problems with a product that is what we'd want if we were doing the job.”

The Sizzler has an

optional stainless-steel frame with integrated lift bar – this attachment is normally specified by Australian rental companies, who are finding the Sizzler from Aussie Pumps an absolute winner when it comes to hot-wash applications.

Further information is available from aussie pumps.com.au



The Aussie Pumps Sizzler Hot Wash is the ideal machine for cleaning and sanitising poultry sheds, yards, vehicles and all livestock applications.

Tyson Foods to close four US poultry plants

Impacts employees and local producers

TYSON Foods is shutting four more chicken plants to cut costs – in Arkansas, Indiana and Missouri – a blow to small communities in the US heartland that depend on the meatpacker for nearly 3000 jobs.

The company, which reaped big profits as meat prices soared during the COVID-19 pandemic, is now adjusting to a decline and to slowing demand for some products.

Tyson closed two other chicken plants in Arkansas and Virginia with almost 1700 employees earlier this year, and has also laid off corporate employees.

The decision by Tyson – the largest US meat producer by sales – to close facilities surprised and saddened local officials, who said the four plants had been fixtures for more than 50 years.

Tyson said it will move the work done at the closing plants to newer facilities closer

to its customers.

The plants are slated to close in late 2023 or early 2024, according to Tyson.

On a call with analysts, the company's chief financial officer John R Tyson said the four facilities account for about 10 percent of Tyson's chicken-slaughter capacity.

The company declined to say how many plant employees would be affected.

It said it will help relocate workers and encouraged them to

apply for other positions at Tyson.

"These moves are difficult certainly," Mr Tyson said in an interview.

"For the long term of Tyson, this is a move that should allow us to be better, more efficient and serve our customers better."

Tyson chief executive officer Donnie King said on the call with analysts that the plants were typically smaller and "in need of major capital to make them viable."



Employees, local chicken farmers and grain growers are all impacted by the closure of the four chicken plants.



Japan lifted its ban on eggs, chicken meat and other by-products.

Japan to resume Brazil chicken imports

JAPAN will resume chicken imports from Brazil following a ban that was triggered by an outbreak of highly pathogenic avian influenza in backyard flocks in its Santa Catarina state, according to Japan's Ministry of Agriculture, Forestry and Fisheries.

The ministry stated recently that the ban, imposed on July 17, was lifted after it confirmed that poultry from Santa Catarina state was free from the disease.

Earlier, a statement from Santa Catarina citing Governor Jorginho Mello had

said the embargo had been lifted.

Santa Catarina's government mentioned a bilateral agreement between Brazil and Japan that allowed for chicken sales to resume should no irregularities be found 28 days after the outbreak-related ban was imposed.

"Santa Catarina is free of avian flu," Mr Mello said.

"We are a reference for animal health ... and the outbreak is already overcome."

The Brazilian agriculture ministry said the state of Santa Catarina is Brazil's second largest producer and

exporter of chicken.

It confirmed Japan lifted its ban on eggs, chicken meat and other by-products effective August 18.

The news is a boon to local meat processors as, according to the state government, Japan is Santa Catarina's top poultry export destination.

Nationwide, only China imported more Brazilian chicken than Japan in the first seven months of 2023, according to trade data compiled by pork and poultry lobby Brazilian Association of Animal Protein.

Japan had temporarily banned chicken

products coming from Espirito Santo state in late June and from Santa Catarina in mid-July.

In May, Brazil reported its first-ever case of highly pathogenic avian influenza in wild birds.

But the country remains technically free of the disease as there have been no detections on commercial flocks.

Japan bought 257,446 tons of chicken products from Brazil in the year through July, an 8.2 percent annual rise, ABPA data shows.

It was also Brazil's biggest egg importer in the period.



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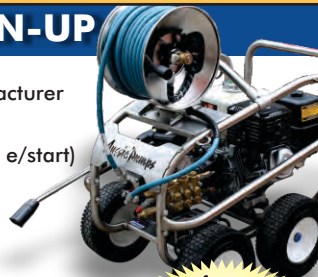
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