NATIONAL Poultry NEWSPAPER

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AI risk after high rainfall

NEW research has found that the risk of an avian influenza outbreak in Australia would peak two years after a high-rainfall period.

Outbreaks of the avian influenza virus in the Australian poultry industry predominantly, if not exclusively, originate from wild waterfowl.

In Australia, where large parts of the country experience erratic rainfall patterns, above average high rainfall followed by extensive dry periods drive AIV dynamics in wild birds.

Intense rainfalls lead to mass wild waterfowl breeding events.

When next the landscape starts to dry out and waterfowl start to flock, AIV prevalence in these wild bird groups increases.

Not only because of increasing contact rates but also because there is an increase in the number of young birds that have not been exposed to AIVs circulating in wild birds in Australia before and are thus more susceptible to infection.

During these dry periods, wild waterbirds aggregate on permanent natural wetlands or man-made waterbodies such as dams, which increases the risk of direct and indirect contact between waterfowl and commercial poultry.

These dynamics occur over a long period of time and new research from Professor Marcel Klaassen's laboratory at Deakin University has found that the risk of AIV outbreaks in commercial poultry peaks two years after the onset of a high-rainfall period.

This research used weather and AIV detection data from the Murray-Darling Basin and the region immediately surrounding it in southeast Australia.

Having identified this key environmental risk factor for AIV outbreaks in Australian commercial poultry, Prof Klaassen and his team are currently working on generating a risk assessment model that will allow identification of AIV out-

☛ continued P2

Professor Marcel Klaassen's laboratory at Deakin University has found that the risk of avian influenza virus outbreaks in commercial poultry peaks two years after the onset of a high-rainfall period.

The damage caused by the tornado that hit the University of New England campus in Armidale on the evening of October 14.

Blown away by PHA Ideas Exchange 2021

PoultryHub

by **TAMSYN CROWLEY**
Director

WELL, it has definitely been a turbulent month here at the Poultry Hub Australia offices.

We have been in and out of the office due to COVID and also a tornado!

Unfortunately, the University of New England campus on which PHA sits has been substantially damaged as a result of a tornado that swept through on the evening of October 14.

I am happy to report that luckily no people were injured and none of our PHA facilities have been damaged, which is a great relief.

This month the PHA team successfully ran Ideas Exchange 2021.

Despite being a virtual conference, the engagement level was great.

Participants were able to engage with the speakers through live question time and discussion during the conference.

The conference comprised of eleven presentations spread over two afternoons – October 25 and 26 – and provided a mix of scientific presentations focussed on nutrition, improving hatchability, euthanasia and disease detection.

This meeting also provided the PHA team an opportunity to give an update on our current and future plans for our programs of education, research and training.

Following the conference, we received a number of emails complimenting us on the conference and also to reach out and engage with some of our programs.

☛ continued P2

The UNE campus substantially damaged after the tornado swept through Armidale.

Thankfully, no one was injured and the PHA facilities were unscathed.

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Poultry Industry Calendar of Events

2021

NOV 21-23 – AVAMS21, Gold Coast www.avams2020.com.au

NOV 22-24 – VIV MEA 2021, Abu Dhabi UAE, vivmea.nl

NOV 24-25 – Advancing Poultry Science in a Virtual World, www.wpsa.com

2022

JAN 25-27 – International Production & Processing Expo, Atlanta US, www.ippexpo.org

MAR 30 - APR 1 – 7th International Conference on Poultry Intestinal Health, Columbia, www.ihsig.com

MAY 10-11 – British Pig & Poultry Fair, Stoneleigh UK, pigandpoultry.org.uk

MAY 15-17 – Poultry Information Exchange and Australasian Milling Conference (PIX/AMC), www.pixamc.com.au

MAY 31 - JUN 2 – VIV Europe 2022, Netherlands, viveurope.nl

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

poultrynews.com.au

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HAVE YOUR SAY!

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

This is an open forum where you can cover any topic, whether for or against an issue.

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

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The finalists of the 2021 Young Achieve Award are Jess Spencer from South Australia, Rachel Wilson from Western Australia, Jodi Courtice from Queensland, and Danyel Cucinotta and Josh Murray both from Victoria.

EFA announce awards at AGM

Egg Farmers of Australia

by **MELINDA HASHIMOTO**
CEO

TEN Australians who make an important contribution to egg production have been listed as finalists in the inaugural Egg Farmers of Australia industry recognition awards.

The winners of the two awards will be announced at the organisation's annual general meeting on November 9.

The finalists of the 2021 Young Egg Industry Achiever of the Year are:

• Jess Spencer of Days Eggs in South Australia

• Josh Murray of Josh's Rainbow Eggs in Victoria

• Rachel Wilson of Freemantle Egg Company in Western Australia

• Danyel Cucinotta of LT's Eggs in Victoria

• Jodi Courtice of McLean Farms in Queensland.

The finalists of the 2021 Egg Industry Leader Excellence Award are:

• Dr Rod Jenner of Rosetta Consulting in Queensland

• Tony Nesci of Diamond Valley Eggs in Victoria

• Peter Bell of AAA Egg Company in Western Australia

• Franko Pirovic of Pirovic Family Farms in NSW

• Brett Langfield of LPC Trading in NSW.

Our egg commercial farmers – and those who work with them such as farm staff, hatchery staff and vets – work very hard to maintain a consistent and clean supply of fresh eggs for Australians to eat every day.

The awards were open to any worthy candidate involved in egg production – farmers, egg production teams, farm staff, researchers, poultry vets, hen nutritionists and hatchery employees.

The finalists were nominated by EFA members.

The judges for the awards will be Peter Bedwell of *Poultry Digest* and Rowan McMonnies of Australian Eggs.

The finalists of the 2021 Egg Industry Leader Excellence Award are Franko Pirovic from NSW, Peter Bell from Western Australia, Rod Jenner from Queensland, Brett Langfield from NSW and Tony Nesci from Victoria.

PHA Ideas Exchange 2021

☛ from P1

I would like to take this opportunity to thank all the speakers for their participation and look forward to their involvement next year in Melbourne – hopefully in person.

We have recently released a new web-based app that is aimed at secondary school students – meet the 'Chicken Simulator'.

The app is designed to give students an insight into the important metrics of raising a broiler across its commercial lifecycle.

The app allows students to select a specific week of production and then set the lighting intensity, temperature and crude protein level to achieve the best performance.

Based on their selection students are prompted to try again if they have not been able to select the correct metrics and given the green light if they do get it right.

The app is populated with supporting information and graphs to aid the students in their learning journey.

In addition, a teacher's pack is being developed to support teachers to utilise this tool in their classrooms.

The Chicken Simulator app is supported by Australian Chicken Meat Federation and can be accessed through our PoultryHub website under the 'Education' and 'Resources' tabs.

I hope you are all safe and well and encourage you to reach out – we're always looking for ways to support industry and farmers and welcome any suggestions on how we can be of assistance.

Have an idea or would like to chat about all things poultry, contact our office at poultryhub@une.edu.au

Students using the app can select the age of broiler that they would like to optimise conditions including lighting, temperature and crude protein percentage.

The Chicken Simulator app developed by PHA for secondary students and supported by ACMF.

AI risk after rainfall

☛ from P1

break risks in real time.

While further work is required to investigate these dynamics and develop tools to support industry, the findings are useful in informing biosecurity considerations on farms.

Australian Chicken Meat Federation executive director Dr Viv Kite said, "It is an interesting piece of research that confirms the industry's understanding that avian influenza spill-over events from wild birds to commercial poultry have tended to be associated with weather, in particular rainfall events in current and preceding years."

"It highlights that poultry producers should include weather and wild bird monitoring as part of their biosecurity strategies to identify weather cycles likely to contribute to an increased risk of avian influenza on their farms.

"During periods of elevated risk, producers need to be particularly vigilant in terms of monitoring for wild bird activity in the vicinity of their farms and in adhering to existing industry biosecurity standards targeted at minimising contact between wild birds and farmed poultry."

For more information, contact Prof Marcel Klaassen on 03 5227 2464 or marcel.klaassen@deakin.edu.au

AI outbreaks originate from wild waterfowl.

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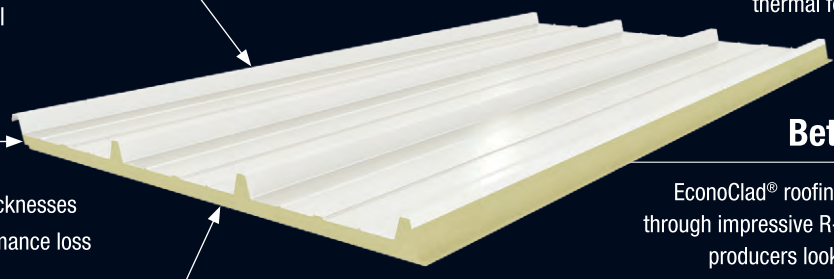

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Talk to your local butcher about sourcing pasture raised chickens, if willing to pay a premium. This Ross Cobb was pasture raised. I can personally vouch for its meatiness and taste.

Look for slow-raised free range chickens to avoid white striping.

White striping a black mark on bulky broiler breeding

Cant Comment by BRENDON CANT

A NEW report from animal welfare non-profit the Humane League, which examined supermarkets in 29 states in the US, found chicken breasts demonstrating 'white striping' in nearly every one.

White striping is a muscle disease reportedly impacting 50-96 percent of fast growing chickens.

In the US more than nine billion broiler chickens are processed every year.

With breast meat being so popular, birds have long been selectively bred for bigger breast muscle.

Due to this selective breeding, chickens now reach market weight in 60 percent less time than broilers did 50 years ago.

Their growth rate means they are slaughtered at only 47 days.

Two breeds – Cobb 500 and Ross 308 – make up 90 percent of broilers eaten in the US today.

Studies have shown a correlation between the presence of white striping and increased growth rate, slaughter weight and high breast meat yield.

The disease is a consequence of fat cells taking the place of protein cells.

The fat cells are visible as white striations running parallel to the muscle fibres, predominantly seen on the surface of breast fillets.

White striping can also appear on tenders and some thigh muscles.

Breeding for fast growth and increased breast size has profoundly altered muscle architecture and metabolism.

According to the Humane League, white striping can appear in varying degrees and is not only a visual representation of the welfare issues the chicken suffered as a consequence of fast growth, but it also impacts the quality of the products.

The nutritional value of the chicken meat reduces when white striping is present, with higher intramuscular fat content and increased collagen to total protein ratio.

Studies reportedly found a 224 percent fat content increase, a 9 percent protein decrease, and a 10 percent collagen increase when comparing normal breast muscle with those severely affected by white striping.

The increase in collagen levels means that the protein in the chicken is less digestible and there is a deficiency in some essential amino acids.

Fat calories are also impacted, increasing from 7 percent to 21 percent.

White-striped meat has a softer texture and lower water holding and binding capacity.

During cooking it influences how the meat picks up a marinade.

The meat retains less moisture.

Overall, white striping means lower quality meat.

For the most part, I avoid buying chicken breasts at the supermarket, generally finding them bland.

Similarly, I have long avoided chicken breast when on offer in restaurant dishes.

Again, too often bland and too often dry.

So, what to do?

I guess, subject to what you have in your wallet, purse, credit or debit account, try to select chicken meat from slower growing chickens.

Personally, I favour pasture raised.

Chances are that also means they'll have led a better life in a better environment.

You then have a greater chance of enjoying the taste experience you want and indeed deserve.

Makes sense if you can afford it.

Ag minister support for sector at UN

NATIONAL Farmers' Federation chief executive Tony Mahar has welcomed remarks by Minister David Littleproud at the United Nations Food Systems Summit in a session devoted to leader's statements.

"We are pleased the Australian Agriculture Minister was able to participate in this international event."

"Making sure Australia's voice is heard at these forums is critical.

"Agriculture is leading the world in emissions reduction and landscape management and is doing seminal work on agricultural stewardship."

In a pre-recorded presentation, Minister Littleproud covered the following important areas:

- Investment in research and development and new technologies will help make Australian farm production more sustainable
- The Australian Government is introducing a biodiversity stewardship program to improve and measure biodiversity, this will be a world-leading program
- Australia is investing $200 million to improve soil science, which will increase production and enable Australian farmers to measure carbon abatement and assist in meeting carbon commitments
- Australia is sharing science to foster a healthier environment and more sustainable food production systems
- Australia will continue to partner with other nations, by sharing technology and research.

The NFF has been critical of the structure and engagement process of the UNFSS.

"Our priority is to ensure the false notion that the solution to climate change is destocking and adopting a completely plant-based diet, does not gain traction." Mr Mahar said.

"To take this discussion beyond the UNFSS, we welcome an agreement by Minister Littleproud for Australia to join the Global Sustainable Livestock Coalition."

The effects of severe heat stress in meat chickens

■ Using electrolyte supplementation to minimise impacts

UNIVERSITY of Sydney principal investigator Jeff Downing provides a final report summary on the electrolyte supplementation of meat chickens to alleviate the adverse effects of severe heat stress.

The objectives of the research project were aimed to determine whether supplementing meat chickens with electrolytes in the final few days of the production period during high temperatures would improve carcass quality and performance and reduce the effects of dehydration and physiological stress during transport and lairage.

Meat chickens may be raised in regions with high temperatures

Meat chickens can suffer from heat stress during periods of high temperatures or humidity, which can reduce their feed intake and increase mortality.

Heat-stressed meat chickens are also less productive and produce lower quality meat.

Meat chickens can produce a considerable amount of heat themselves but will experience heat stress due to a variety of other factors, particularly body weight, and the air temperature and relative humidity in the shed.

Meat chickens can suffer from heat stress during periods of high temperatures or humidity, which can reduce their feed intake and increase mortality.

Good shed insulation and evaporative cooling can reduce shed temperatures by 8-10C.

However, when outdoor summer temperatures exceed 28-32C, it is difficult to keep the indoor temperature within the ideal thermal comfort zone of 18-22C.

Meat chickens can be particularly susceptible to heat stress in the days before pick-up for transport to the processing plant, when their weight is at its highest.

To manage heat stress, meat chickens rely on panting to dissipate heat, but this raises the concentration of carbon dioxide in their blood, which increases blood pH.

To mitigate these effects, meat chickens will excrete higher amounts of salts in their urine.

However, this can reduce their ability to retain water and can cause dehydration, which may worsen potential stressors associated with pick-up and transport.

The efficacy of electrolytes to minimise heat stress was assessed

A common strategy for minimising heat stress in meat chickens is supplementation of their water supply with salts, called 'electrolytes', for a short time before pick-up.

Previous research funded by AgriFutures Australia found that electrolyte supplementation two days before transport, and at air temperatures of 26-28C, improved animal outcomes and meat quality.

However, supplementation for five days before transport improved growth performance but had limited effects on meat quality.

In those experiments, chickens started to show signs of severe heat stress at 28C.

The aim of this research project was to determine whether electrolytes could minimise heat stress at air temperatures above 28C, at one day and at three days before pick-up and processing.

For both experiments, the birds were exposed to a temperature pattern that could be expected in a commercial shed during hot weather.

Standard husbandry and nutrition were provided until the birds were 39 days old.

At this point, the temperature was gradually increased to 32C during the day, and then reduced to 20-22C, to replicate the normal summer temperature cycle.

Birds were given one of two electrolyte formulations, for either one or three days before processing.

After the carcasses were collected at the processing plant, random samples were assessed for meat quality.

Electrolytes are most effective when supplied for three days before hot weather

When chickens were exposed to temperatures above 28C before pick-up, unsurprisingly, there were increases in the mortality rate and number of birds needing to be humanely euthanised.

While there were no differences in weight loss during transport or meat quality, between treatments, females responded less than males to the treatments.

This could be related to differences in body weight, because males are usually heavier than females of the same age.

Giving electrolyte supplements one day before expected high temperatures (and heat stress) did not significantly affect mortality or improve performance and meat quality.

The combined results of this study and the previous study suggest that electrolytes are most effective under conditions of moderate heat stress when given for at least 2-3 days before the expected hot weather.

A key finding of this study was the difference in temperature between the air at the level of the birds' backs and the temperature under birds sitting on the floor.

While it was not possible to determine how long the birds had been sitting before the temperatures were taken, the average temperature under the seated birds was 4.4C higher than the temperature at the level of the birds' backs when standing.

In one instance, the maximum temperature difference was 10.9C.

This suggests that heat stress could be more severe than previously thought because the heat under seated birds could have a greater effect than the ambient temperature in a shed alone.

This finding has implications for older birds that are larger and much more likely to spend time sitting.

Several strategies are needed to minimise the impact of heat stress on bird welfare and productivity

Heat stress continues to be a concern for the welfare and productivity of meat chickens in regions of high summer ambient temperatures.

When determining the potential for birds to experience heat stress, ambient temperature and humidity should be considered together.

Electrolytes given immediately before hot weather appear to have some benefit in mitigating heat stress.

However, several strategies are needed to minimise the potential for heat stress and to limit production losses, welfare issues and mortality.

The most effective way to improve performance in hot weather is through good housing design.

Farmers should have sound understanding of the temperature and humidity predictions for their region, and use strategies to reduce the risk of heat stress when high predicted outside temperatures (> 32C) make it difficult to keep shed temperatures below 26-28C.

For the final report see agrifutures.com.au/product/electrolyte-supplementation-to-alleviate-the-adverse-effects-of-severe-heat-stress-in-meat-chickens

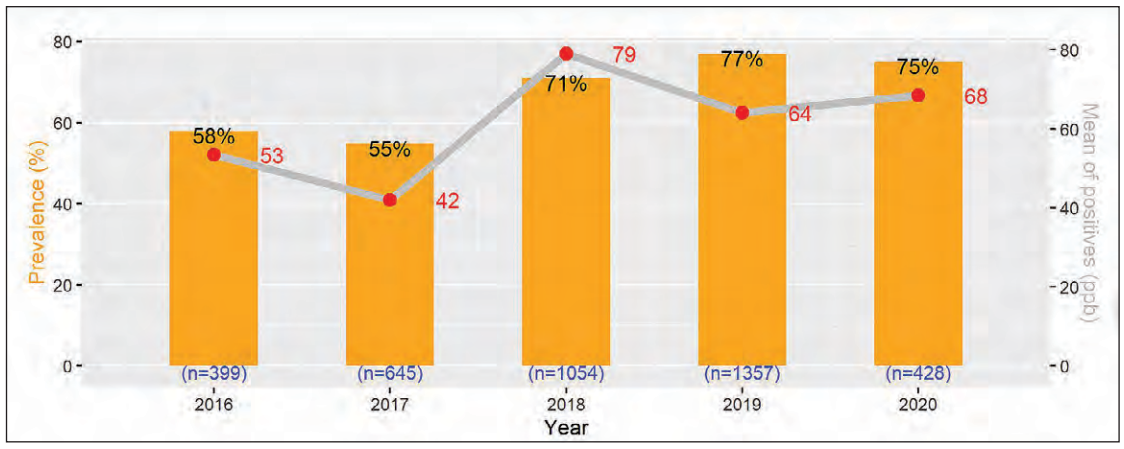

Figure 1. Increasing zearalenone prevalence (%) and concentrations (red numbers in ppb) in poultry feed in 2016-2020. Photo: Biomin world mycotoxin survey 2020

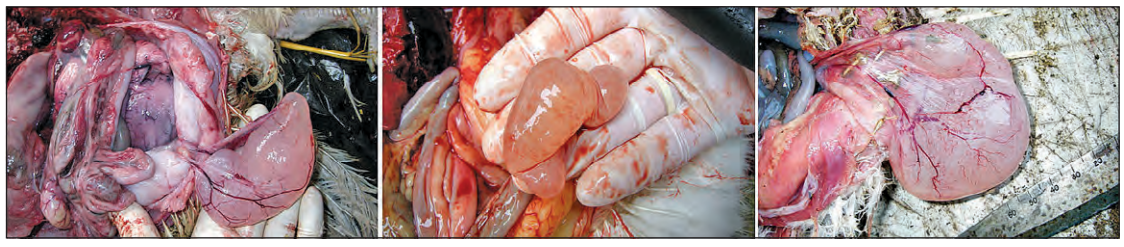

Figure 2. Formation of cysts in the oviduct of breeders that received a diet contaminated with a high concentration of zearalenone in the field. Photo: Dr Pavel Shkarlat DVM PhD

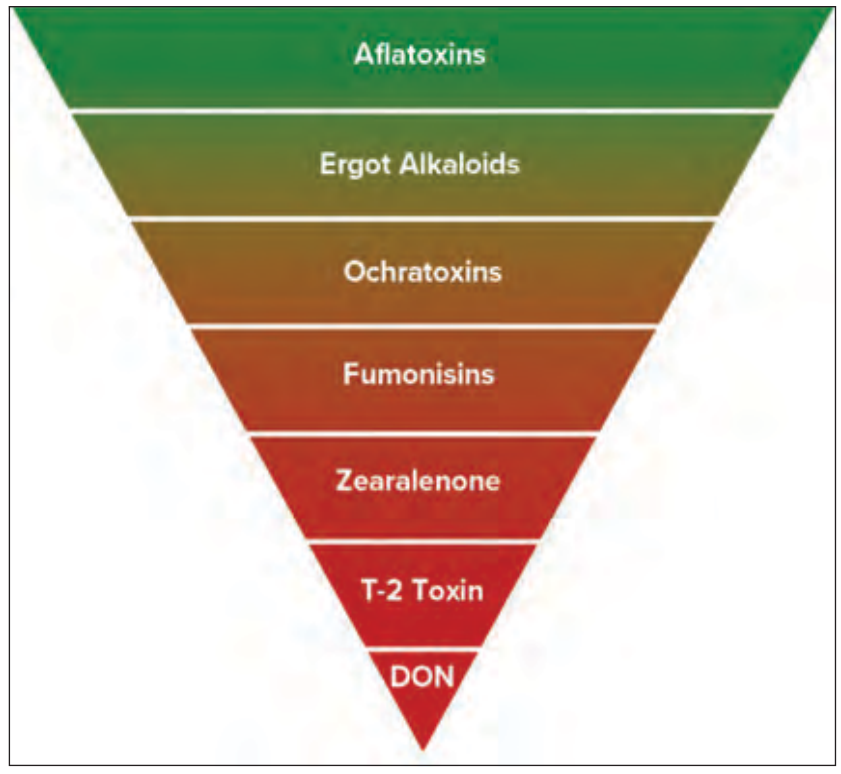

Figure 6. Lower adsorption efficacy of zearalenone.

Seven myths and truths about zearalenone

■ How common is it in poultry production?

WHAT is true and what is myth when talking about zearalenone in poultry production?

Zearalenone is usually associated with reproductive disorders in poultry, but do you know of its other effects and how common ZEN is?

From ZEN's prevalence in feed to its impact on broilers, laying hens and turkey poults, below clarifies fact and fiction.

Poultry species are generally considered to be more resistant to ZEN than other species such as pigs.

However, recent research has shown the potential hazard of this mycotoxin in poultry, not only in the reproductive tract but also in other systems and organs.

Figure 3. Prolapse of the rectum and a reduction of testes size upon exposure to a high dietary zearalenone concentration in the field. Photo: Prof Charles Rangga Tabbu

Myth – ZEN is not highly prevalent in poultry feed

According to the 2020 Biomin world mycotoxin survey, 67 percent of poultry feed samples analysed between 2016 and 2020 were contaminated by ZEN.

Interestingly, ZEN levels increased in both prevalence and average contamination levels over the three years of the period 2018 – 2020.

Myth – ZEN can be considered a single-mycotoxin problem for poultry

Deoxynivalenol and fumonisins are mainly produced by fusarium sp, the same fungus that produces ZEN.

Therefore, it is common to find these mycotoxins occurring in combination.

Evaluating the complete situation is crucial.

It has been proven that mycotoxins have negative synergistic effects, presenting a challenge for the animal in reaching its maximum genetic potential.

Truth – Poultry species can be affected by ZEN

Poultry are able to convert ZEN into α- and β-zearalenol (α- and β-ZEL).

Fortunately, due to its rapid natural metabolisation and excretion, poultry seem to be more resistant in comparison to other species such as swine or cow, but ZEN can still cause problems.

Myth – Of the poultry species, broilers are the most sensitive to ZEN

The α-zearalenol (α-ZEL) is considered the most toxic metabolite of ZEN.

Turkey poults have a significantly higher α-ZEL:ZEN ratio in comparison to broiler chickens and laying hens, meaning that more zearalenone is metabolised to toxic α-ZEL, supporting the hypothesis of increased sensitivity of turkeys to the estrogenic effects of the mycotoxin.

Truth – ZEN causes reproductive disorders in breeders and layers

ZEN is known to cause alterations in the reproductive tract of layers and breeders.

The estrogenic effect of ZEN is reflected in modifications of the reproductive tract of poultry species.

In females the main findings are the presence of cystic oviduct, prolapse of the rectum and inflammation in the reproductive tract, while a reduction in testes size was observed in roosters.

Moreover, alterations in eggshells and frequent occurrences of cracked eggs in layers and breeders can indicate ZEN contamination of the feed.

Myth – ZEN only causes reproductive problems in poultry

ZEN doesn't only hurt birds' reproductive systems.

ZEN is also able to damage immune functions, induce oxidative stress and impact intestinal health in broilers.

A recent study showed that ZEN is highly responsible for the increase of FCR in broilers when a natural contamination by mycotoxins, even in levels below European Union recommendations.

It also reflects the correlation between ZEN and broiler's zootechnical performance.

Truth – ZEN effects in poultry can't be avoided by using a mycotoxin binder

Due to its low polarity, ZEN is considered a mycotoxin that cannot be adsorbed effectively.

Therefore, using a simple binder wouldn't be effective to protect the animal against ZEN's effects.

Research into new methods of counteraction have shown that enzymes are an effective strategy because they are able to break down the molecule into non-toxic metabolites.

For more information, visit biomin.net

Lorran Baeumle Gabardo

Figure 4. Zearalenone results in the reduction of testes size in cocks. Left, normal testis and right, atrophied testis in a cock that received a diet contaminated with a high zearalenone concentration. Photo: Dr Ivan Dinev DVM PhD

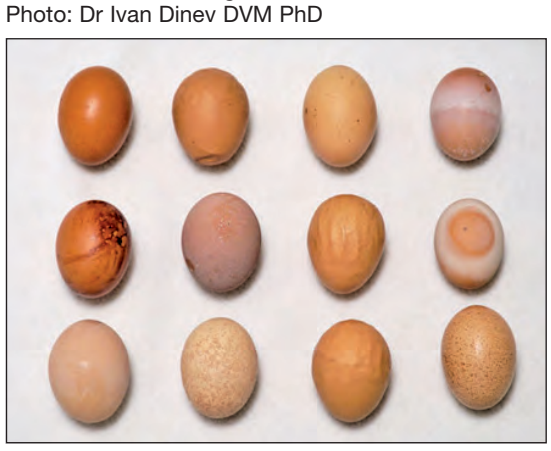

Figure 5. Alteration in eggshells under a high natural contamination of zearalenone. Photo: Biomin product manager Katharina Haydn

Environmental measurements and impact of chicken production

THE Australian Chicken Meat Federation approached a number of experts to provide commentary about issues relating to the industry.

Integrity Ag and Environment managing director and principal scientist Dr Stephen Wiedemann addresses the subject of the environmental impacts of chicken production, explaining the concept of lifecycle assessment and environmental footprint.

Environmental impacts and measurements

When considering environmental impacts for a production system such as chicken meat, while a fairly broad topic, the main components generally looked at are:

- Greenhouse gas emissions
- Resource use – water and energy
- Nutrient loss and its effect – principally from manure and the way it is managed and handled.

The best approach to assess these impacts is to consider the full supply chain – not only the poultry house where the chickens are raised, but also processing and grain production.

By looking at the full supply chain, we gain a more accurate picture of the total impacts for every kilogram of chicken meat that is produced.

Research in this area was done using a 'lifecycle assessment' tool – more common terms such as 'carbon footprinting' or 'water footprinting' may be recognised – to assess the total impacts of every kilogram of chicken meat that makes it to the retail shelf in Australia.

The findings from this research demonstrate the impacts of producing chicken meat are very low, consistent with the results of several studies undertaken overseas and testament to the efficiency of the Australian production system.

Key advantages Australia enjoys include relatively low environmental impacts from the grain production system, which is obviously very important to poultry.

Environmental impacts of modern chicken production

There may be a perception that because the poultry sector is quite intensive that the impacts from chicken meat production therefore would be high.

Interestingly, it is quite the reverse.

As the poultry industry is intensive, farmers are able to more closely manage both their impacts and emissions.

Over many years, improvements have been made in the production efficiency of the poultry industry, which translates to lower environmental impacts.

This may seem counter-intuitive to some, however by consuming less resources – for example less grain to produce chicken meat – and using less energy over time, the impacts are actually reduced for every unit of produced product.

So even though the industry is intensive, this can be an upside when it comes to environmental performance.

Waste and utilising it

Another area where the poultry industry is reducing the environmental burden is waste.

The industry hardly talks about this nowadays because the main waste product coming out of the system is spent litter, and the sector has done a lot of work to improve the utilisation of this product by other agricultural industries.

In effect the industry has turned a waste product into a valuable resource – a very effective program with spent litter from poultry now in demand by the dairy industry and horticultural sector.

The majority of the waste product is composted or applied directly to land as a fertiliser replacement.

The result being that the nutrients excreted by the birds are being utilised by the agricultural industry for crop and pasture production.

Solar calculator helps Aussie egg farmers

THE egg industry is already one of the most sustainable agricultural sectors in Australia, but Australian Eggs is on a mission to continue to drive farmers towards carbon neutrality by delivering research and tools that will enable farmers to take steps towards a sustainable future.

Considering ways to help the industry become more sustainable, Australian Eggs saw an opportunity to help small to medium egg farms, which don't have the resources to investigate and analyse the viability of solar energy.

This prompted the development the solar calculator tool.

The solar calculator works by identifying farmer options and guides consideration, as well as accelerating the adoption of renewable energy in the egg industry.

Egg farming uses a significant amount of electricity as air-conditioned sheds are required to ensure hens are safe from Australia's harsh climate.

Solar energy works well for the egg industry as energy production mirrors the energy load from cooling systems across the day.

In response to electricity costs increasing over the past decade, some larger egg farms have already successfully implemented large scale solar projects to both lower their energy costs and improve environmental outcomes.

Rowan McMonnies said 10 of the country's 12 largest egg producers have some form of solar energy powering their farms.

Australian Eggs managing director Rowan McMonnies said, "Ten of the country's 12 largest egg producers have some form of solar energy powering their farms."

"Research tells us the community is interested in environmental issues and how agricultural industries are going to lower the carbon footprint.

"We've developed a solar calculator to allow egg farmers to see how solar could work on their farm, and how much they could reduce their power bill.

"Egg producers who have installed solar panels are noticing the difference."

Egg production already has the lowest carbon footprint of common animal protein sources and is comparable to some plant-based foods.

With the uptake of solar on egg farms, the industry is now even closer to achieving carbon neutrality.

For more information about the solar calculator, visit australianeggs.org.au/for-farmers/tools-and-training/solar-calculator

Are Australians being duped by plant-based meats?

AUSTRALIA'S reputation as a meat-loving nation may be changing, as the past year saw a boom in sales of plant-based meat alternatives that seek to mimic the taste, texture and appearance of animal products.

However, Australia's meat industry has hit out at the slew of plant-based alternatives entering the market for what it claims are the misleading ways they are presented to customers.

Plant-based meats, or plant-based proteins, are meat alternatives that take the form of many familiar meaty favourites, such as burger patties made from pea protein and braised 'beef' made from shiitake mushrooms.

Valid concerns over the environmental and health implications of eating meat have seen these imitation products take off globally in recent years, particularly in the US and China – the two nations that are the world's largest meat consumers.

According to a report by alternative proteins think tank Food Frontier, Australia – one of the world's highest per capita meat consumers – saw a 46 percent growth in sales of plant-based meat in the fiscal year 2020, with a doubling of the number of products available to consumers.

However, traditional meat industries have taken umbrage at the plant-based proteins popping up on Aussie supermarket shelves, arguing words such as 'meat' and 'beef' or images of livestock on product packaging dupe customers into mistakenly buying what they think is meat.

Seafood Industry Australia chief executive officer Veronica Papacosta said: "More and more of these plant-based products are being sold in supermarkets right around the country and it's clear their labelling is becoming increasingly deceptive."

The Australian Broadcasting Commission reported similar challenges to labelling plant-based proteins in the US and Europe.

In France, plant-based products have been prohibited from using meat-related terms such as 'sausage' and 'steak' since 2018.

The concerns prompted a recent Senate inquiry into the labelling standards of plant-based proteins and their alleged appropriation of Australian meat branding.

In August, a national survey of 1000 people commissioned by the Australian meat, poultry and seafood industries showed six in 10 consumers are deceived by the current packaging used for plant-based proteins.

Respondents to the survey pointed to the use of animal imagery and the emphasis on meat descriptors when labelling plant-based products as the key sources of confusion.

One respondent said it was "very confusing when images of animals are on packaging, when manufacturers try to make the product look like an animal product and when they name their products with very similar-sounding names to meat products."

Another indicated the tendency for the products to display the "meat words significantly larger and more prominent than the plant-based words" also confuses matters further.

Australia's meat, poultry and seafood industries argued the survey shows people who mistook at least one plant-based meat product for animal meat were more likely to be elderly, those who use English as a second language or those who are low-income consumers.

However, the plant-based proteins sector disputes the legitimacy of the findings, with a spokesperson for the Alternative Proteins Council claiming the survey "uses questionable methodology that doesn't replicate an in-store experience."

Similar research by Food Frontier found that out of 252 plant-based meat products reviewed, 100 percent use one or more terms on front-label packaging to indicate they are meat-free, and only 8 percent use an 'unmodified' meat term such as 'beef' or 'chicken'.

The APC spokesperson said: "The plant-based nature of products is the motivation for consumer purchases."

Fable Food Co chief executive officer Michael Fox echoed the sentiment.

"Our whole value proposition is that our product isn't made from animals," said Fox, whose company uses shiitake mushrooms as the base of their alternative meat products.

"We don't want to confuse consumers...

"We want to do the complete opposite and make it very clear that our product is not made from animals," Mr Fox said.

Instead, he said the labelling descriptors are necessary to communicate to customers what the product is and how they can consume it.

Using the example of Fable Food's plant-based "meaty mushroom burger", Mr Fox suggested the words 'burger' and 'meaty' help to describe to consumers what the product is, and how they can expect it to taste, while clearly including the fact that it is made from mushrooms rather than meat.

"It's in that burger format you can eat up like a burger, it's made from mushrooms and its taste is meaty," Mr Fox said.

"That, in my view, and I think in any reasonable person's view, is very clear."

Sydney resident Sebastian Tattam, a regular consumer of plant-based meat offerings, failed to see how the meat alternatives could be dubbed 'misleading'.

When shown the five products used by the meat industries in their survey, Mr Tattam felt it was "pretty obvious" that the products were plant-based, given they were all labelled as such.

"I don't think it's misleading," he said of a product emblazoned with the words "chicken-free chicken" alongside an image of the bird.

"Their product is a substitute for chicken, so you have to make the reference in some way – otherwise, people wouldn't understand it."

Evidence submitted to the Senate inquiry by the Australian Competition and Consumer Commission regulatory body showed that of the more than half-million complaints it received over 18 months, only 11 were related to plant-based product labelling, most of which were from meat industry representative bodies.

Still, meat lobbyists are convinced there is a fine line between what they view as verging on false advertising and what the plant-based industries proclaim products to be.

The tactics being employed moreover are more devious, they argue.

They have accused the plant-based protein makers of "a deliberate strategy to unfairly trade on the reputation of Australia's meat and livestock industries," Beef Central reported.

According to the report, Red Meat Advisory Council chair John McKillop complained in a letter to the Australian government of plant-based meats piggybacking off the billions of dollars invested by the meat and livestock sector to establish their reputations.

The alternative proteins sector counters this argument, saying that leveraging such a reputation is in Australia's best interests, as the sector presents new opportunities for Australia's farmers and exporters.

"Australia, as a food exporting powerhouse, can and should leverage existing trade channels and the strength of our premium brand to increase the overall volume and value of our protein exports with new protein categories," the APC said in a statement on the inquiry.

With the global demand for meat projected to rise 73 percent by 2050, the alternative proteins body warned against mischaracterising the inquiry as conventional proteins versus new proteins.

"The success of both industries will be necessary to meet the clear challenge ahead – to feed a world of 10 billion people by 2050 with finite resources," the APC said.

The inquiry is expected to present its report by February 2022.

First appeared on kyodonews.net

Government's new emissions reduction method priorities

THE National Farmers' Federation has welcomed the announcement of new emissions reduction fund method priorities for 2022.

NFF chief executive officer Tony Mahar said the new priorities were strongly aligned with the NFF's submission on the process.

"In particular, the NFF supports the development of an 'integrated farm method' that would allow separate ERF land-based activities to be combined or stacked," Mr Mahar said.

"This method will take a whole of farm approach that recognises the dynamic nature of a farm business and will go a long way to incentivising farmers to participate in the ERF."

NFF supports further investment in research and development into future emissions reduction fund methods, including livestock feed technologies and the use of agricultural waste as feedstocks.

Currently, a single property could undertake activities that cut across several ERF methodologies and would have to meet auditing requirements for each method in order to participate, creating a significant barrier to entry for many farmers, especially smaller landholders.

"The NFF has long called for greater efforts to reduce the burden of participating in the ERF, especially the administrative burden and the significant costs involved in those," Mr Mahar said.

"Digital and other technologies are expected to assist to make engagement and compliance with ERF rules more efficient.

"We support the government's approach of voluntary incentives as opposed to penalties, in supporting farmers to reduce emissions."

Mr Mahar acknowledged the significant body of work undertaken by the government and the clean energy regulator to implement recommendations of the King review to assist smaller landholders particularly to participate in the ERF.

"The NFF also strongly supports further investment in research and development into future ERF methods, including livestock feed technologies and the use of agricultural waste as feedstocks," he said.

"Reducing methane emissions through livestock feed technologies is a promising area of research that aligns with the red meat sector's carbon neutral 2030 aspirations and government must have a hand in supporting the uptake of best available technology to efficiency reduce emissions."

The Aussie Fire Chief provides the best performance with value for money, substantially better longevity, and is backed by a five-year warranty.

Fire season is coming

STATE firefighting authorities around the country are warning of what could be a savage fire season.

We know there is a climate crisis and what we saw during the Black Summer of 2020 could repeat itself.

Protecting your sheds and having adequate fire preparation equipment can be all important.

One Australian company, Aussie Pumps, has worked hard to produce what it believes and claims is the world's best lightweight portable fire pump.

Powered by either a Honda petrol or Yanmar diesel engine, the Aussie Fire Chief is capable of being matched to a Coerco or Rapid tank, and can be ute or trailer mounted for portability in the event of a sudden outbreak.

It's not only bushfires authorities are worried about – it's grass fires as well, where hazard reductions in many grass and fuel built-up areas are now too late to carry out.

When they developed the Aussie Fire Chief, the company's engineering team used a 3" pump as the base.

That meant a bigger water channel capability was already in the pump.

The bolt on suction flange also gave the capability of varying the suction from the original 3" version to 2" – more suited to rapid response firefighting.

Compared to other popular makes of fire pumps, the Aussie Fire Chief simply outperforms them, is hundreds of dollars less expensive and comes with a five-year pump end warranty.

Aussie Pumps chief engineer John Hales said, "The impeller was the secret."

"Because we started out with a bigger body, we

☛ continued P11

Insight into ag jobs

HIGH school students are encouraged to log on and find out more about the many and varied jobs in agriculture with the AgVenture Careers Expo.

The AgVenture Careers Expo is part of the celebrations for this year's National Agriculture Day on Friday November 19.

With the expo commencing on Monday October 25, Year 10, 11 and 12 pupils and students were likely to be surprised to learn of the jobs on offer – on farm, in an office and even in the air!

National Farmers' Federation president Fiona Simson said, "The great part about agriculture is that there is a career to suit almost every interest, skill, education level and location."

"Through the AgVenture Careers Expo, NFF is looking forward to providing young Australians potential pathways for fulfilling and rewarding jobs in agriculture."

The webinars will provide a-day-in-the-life, no holds barred insights into jobs such as vet, stock and station agent and of course, farmer.

Through the first-hand accounts of webinar guests, students will be taken virtually to the saleyards, shearing shed and a high-rise city office, and have the opportunity to ask a variety of questions.

Guests will also provide guidance on the training and education needed for the featured jobs.

Food writer, farmer and 2016 Rural Woman of the Year Sophie Hansen and Humans of Agriculture podcast creator Oli Le Livere will host the webinars, sharing their own ag career journeys.

Over four weeks students can tune into hear from Australians such as Top End pilot Bobby Nicholl.

As a teenager Bobby thought his life-long dream of becoming a pilot was out of reach due to a minor vision impairment.

Today, Bobby flies the length and breadth of a remote Queensland cattle station checking stock and infrastructure and is an integral part of a tight-knit station team of ringers, mechanics, cooks and overseers.

Barley breeder Dr Hannah Robinson is excited to share her career story, that sees her at the forefront of Australia's development of new barley varieties, work critical to farmers' ability to better manage drought into the future.

First generation farmers Jacynta and Adam Coffey will explain how they realised their dream of owning a cattle property and their goal to continue producing high quality beef while increasing the biodiversity and ecological value of their land.

To find out more and to register for the AgVenture Careers Expo, visit agday.org.au/careers-expo.

This year's National Agriculture Day is Friday November 19.

Step forward in sustainable poultry farming in Cambodia

CAMBODIA'S poultry industry has seen significant development over recent years.

Increasing attention on the important role of smallholder farmers within the industry is shining a light on the potential of micro-agribusinesses as key actors in boosting the country's poultry production and building sustainable farm systems.

Dana Asia Ltd is an Australia-registered charity working in Cambodia to create sustainable solutions for the challenges faced by the country's most impoverished communities.

Dana Asia works with in-country partners to implement locally relevant projects with the primary focus of achieving sustainable impact at scale, aligned with three core values social empowerment, economic viability, and environmental sustainability.

Almost 80 percent of Cambodia's population live in rural areas.

For impoverished rural communities, rearing and selling chickens is a common livelihood, but achieving a reliable income is difficult.

Local Khmer poultry breeds are genetically weak and the traditional free-ranging style makes birds vulnerable to disease.

In many cases, farmers lose most of their flock to disease before they're fully grown, making it near impossible to earn a sustainable income from small-scale chicken rearing.

In 2014, Dana Asia sought to find solutions to local challenges by establishing KJC Farm, a social business poultry farm in Siem Reap province.

Equipped with international-standard biosecure facilities, KJC provides hands-on training and employment for local villagers from impoverished backgrounds, working in collaboration with international poultry experts who advise on chicken rearing techniques, disease management and biosecurity.

The farm also provides training for Dana Asia's outgrower project which empowers microentrepreneurs to launch their own poultry small businesses from home.

The first outgrower farm was setup in December 2018 and a total of 11 outgrower farms have been established in two communities in Siem Reap province, with a total of 20 planned for this year.

To scale impact at a community level, a large volume of disease-free chicks must be readily available.

Since November 2018, Dana Asia has been developing a new breeder farm facility and now in August 2021, the final building works are being completed and the farm is close to operational.

Built using local materials and labour, the new farm is equipped with full water and electricity supplies, backup generator, offices, kitchen and lunchroom, and accommodation for farm workers.

A 12m by 23m rearing shed, complete with feeder lines and water system, has been designed with Cambodia's hot climate in mind to help reduce temperatures in the shed.

The site has a biosecure working farm area only accessible to workers and visitors through a shower block, with full vehicle washing station to disinfect all vehicles coming in and out.

These biosecurity protocols set the farm apart from others of its kind in the area.

The breeder farm is key to the viability and sustainability of Dana Asia's social business activities in Cambodia.

When fully operational, the farm will provide comprehensive training and employment for local farmers and produce five-day-old chicks to supply over 200 community-based farmers from impoverished backgrounds.

Building local capacity and skills in advanced poultry rearing techniques will contribute to the wider knowledge base to bring important system-wide changes to Cambodia's poultry industry for long-term impact.

To learn more or donate to this project, visit danaasia.org/poultry-social-business/

You are also welcome to contact Dana Asia chief executive officer Duncan Power on +61 419 472 802 or duncan@danaasia.org, or technical advisor Peter Van Den Akker on +61 412 806 817 or peter@ezesystems.com.au

New breeder rearing shed.

A 12m by 23m rearing shed, complete with feeder lines and water system, has been designed with Cambodia's hot climate in mind to help reduce temperatures in the shed.

Fire season coming

☛ from P10

were able to put in a 7" diameter impeller.

"Competitors are limited to around 6", therefore limiting the pump's performance."

For example, products by great companies such as Onga and Davey are limited to a 60m head.

The Aussie Fire Chief on the other hand has a 75m maximum head.

That extra pressure could make all the difference in an emergency.

"Here at Aussie Pumps, we recommend that users of high-pressure firefighting equipment take the trouble to understand that it's not about a flash paint job on the outside of the pump that counts," Mr Hales said.

"It's the inside that makes it work.

"Our heavy duty impeller, weighing substantially more than other top brands, means that it's got more metal in it.

"Comparisons in terms of quality, performance and extra touches are obvious.

"For example, we fit metal caps and chains to the three-way outlet on the top of the pump.

"Others may offer a four-way outlet with a combined outlet capacity of 5", but then make what we think is a critical error in having a 1 1/2" suction port."

Aussie Pumps' engineers are still trying to work out how limitations imposed by the suction port at 1 1/2" can ever produce enough water to feed four hoses with 5" of outlet.

These are key points and customers should check the performance curves, ask to see inside the pump and understand the pump's performance before making a purchase.

A farmer from the NSW north coast took the trouble to compare the engineering benefits, performance and potential longevity.

Chris Hoare of Lower Duck Creek said, "Primarily we needed to pump from a creek up to our house tank for garden water and fire safety."

"We originally thought of a Davey firefighter but the Aussie's functionality, higher head and less outlet options won.

"And the five-year extended pump warranty is a bonus."

For further information, including a free Aussie Pumps Bushfire Survival Guide, contact Aussie Pumps or authorised Aussie Pump distributors all over the country – aussiepumps.com.au

Don't be misled by outdated brand names and fancy paint.

It's the inside of the pump that counts!

Australia can't afford to get this wrong

NFF president Fiona Simson.

THE bright and prosperous future of farmers and regional Australians depends on the government getting its climate change commitments right.

An important part of this is to provide a just and supported transition.

National Farmers' Federation president Fiona Simson said, "Right now is a moment in time in which we can change for the better how as Australians we value the natural environment and how we recognise and support farmers who are stewards of 51 percent of our nation's landmass."

"We can't afford to squander this opportunity.

"Australia must get this right."

The NFF backs an economy-wide aspiration of net zero emissions by 2050 with two important caveats – that an economic pathway is identified and that farmers aren't burdened by unnecessary red tape.

"The NFF has been crystal clear and steadfast in discussions with the government – climate change policy must chart a course for agriculture and the bush to not only survive but thrive in a reduced emissions future," Ms Simson said.

Farmers are at the forefront of climate change.

Agriculture both emits greenhouse gases and has an enormous capacity to sequester carbon.

The government's climate change policy must recognise this.

It must acknowledge the major progress that has been made already in reducing emissions, especially by the livestock sector.

"Everyday farmers across the country are taking real climate action and are primed to play an even larger role in Australia's lower emissions future," Ms Simson said.

"But we need support, investment and innovation by the government on behalf of the community."

Ms Simson welcomed existing government initiatives to reward farmers for the work they do in managing biodiversity and remnant vegetation and in improving soil health.

This represents a transformational take on the intersection of farming and natural resource management.

A shift from a stick to a carrot approach, will see both farmers and the environment benefit.

"We urge the government to go further and explore market-based solutions that connect farmers and their carbon sequestration capability," Ms Simson said.

"To do this effectively farmers need the technology, systems and knowledge to establish recognised and consistent baselines."

Ms Simson said the NFF supported the work led by Emissions Reduction Minister Angus Taylor in this space.

"For farmers this means ongoing investment in measures that enable and assist us to engage in markets that reward improved biodiversity – that help build and maintain sustainable soils and a sustainable ecosystem services regime," she said.

"This will include ensuring we use the best science and measurement tools available."

Ongoing investments are needed by government to support the development of innovations and technology to allow farmers to take advantage of the opportunities for emission reduction within production agriculture.

"Farmers have learnt from the painful lessons of the past," Ms Simson said.

"In moving forward, farmers want past injustices addressed and fixed.

"Agriculture cannot and will not, be treated as the globe's carbon sink.

"Farmers are the backbone of rural and regional Australia, keeping supermarket shelves stocked and the economy ticking, during the ongoing pandemic.

"The outcome of these negotiations should represent a major reset and an unmistakable opportunity to back in Australian farmers and the rural and regional communities they support.

"It's time to position Australia as leaders on climate change, with a policy and commitment farmers and all Australians can be proud of."

Crossbreeding is the practice of mating animals from genetically distinct purebred lines to produce crossbreds and is widely adopted in pig and poultry breeding.

How to optimise genomic selection

IN pig and poultry breeding programs, the animals that provide food for consumers are usually crossbred, while genomic selection takes place in their purebred parental lines.

Researchers from Wageningen University and Research have written a review paper on how genomic selection can be optimised for the improvement of crossbred animals.

Genomic selection

Livestock populations are continuously improved by a process called selection.

With selection, breeders decide on which animals are allowed to reproduce, based on estimates of the animals' genetic value.

Nowadays, such estimates are obtained from statistical models that describe the relationship between the performance of animals – that is their phenotype – and the genetic variation in their DNA.

This particular method of selection is called genomic selection, which requires phenotype and genotype marker data on a large number of reference animals.

Crossbreeding

Crossbreeding is the practice of mating animals from genetically distinct purebred lines to produce crossbreds and is widely adopted in pig and poultry breeding.

Genetic progress is realised in the purebred lines based on purebred phenotypes and genotypes, while the aim is to improve performance of the crossbreds.

However, purebred and crossbred performance are not perfectly correlated, raising questions such as do we need to collect data on crossbred, can we improve the statistical model and what do the answers to these questions depend on?

Researchers from Wageningen University and Research have summarised answers to these questions in a review paper that was recently published in the Journal of Animal Science.

Optimising genomic selection for crossbred performance

The authors found that the optimal strategy was likely to vary across species, breeding programs and traits.

However, some general trends could be observed.

First, when purebred data is used, the statistical model can be improved by accounting for genetic dominance effects.

Second, genomic selection for crossbreeding may benefit from using crossbred instead of purebred data, but only when the genetic correlation between purebred and crossbred performance is lower than about 80 percent.

Finally, even though genotyping is costly, it is advisable to collect genotypes of crossbred animals that are phenotyped.

An important argument for this advice is that a single crossbred record can contribute to genetic improvement in all three or four parental lines, justifying the required investment.

Estimates are obtained from statistical models that describe the relationship between the performance of animals – that is their phenotype – and the genetic variation in their DNA.

US Department of Ag targets poultry industry to reduce salmonella risks

DESPITE consistent reductions in the occurrence of salmonella in poultry products, more than 1 million consumer illnesses due to salmonella occur annually in the US, and it is estimated that over 23 percent of those illnesses are due to consumption of chicken and turkey.

The US Department of Agriculture's Food Safety and Inspection Service has now launched a new effort to reduce salmonella illnesses associated with poultry products by 25 percent.

Agriculture Secretary Tom Vilsack said, "Far too many consumers become ill every year from poultry contaminated by salmonella."

"We need to be constantly evolving in our efforts to prevent foodborne illness to stay one step ahead of the bad bugs."

Mr Vilsack said the USDA was taking action to help prevent salmonella contamination throughout the poultry supply chain and production system to protect public health.

The process will begin with stakeholder feedback on specific salmonella control and measurement strategies, including pilot projects, in poultry slaughter and processing establishments.

A key component of this approach is encouraging preharvest controls to reduce salmonella contamination coming into the slaughterhouse.

The data generated from these pilots will be used to determine if a different approach could result in a reduction of salmonella illness in consumers.

As it is not just the presence or absence of salmonella, but the quantity of bacteria that can impact the likelihood of illness, FSIS will also examine how quantification can be incorporated into this approach.

Moreover, with emerging science suggesting that not all salmonella are equally likely to cause human illness, FSIS will focus on the salmonella serotypes and the virulence factors that pose the greatest public health risk.

Moving forward, this initiative will require collaboration and ongoing dialogue with stakeholders — industry, consumer groups and researchers alike.

Members of the newly formed group Coalition for Poultry Safety Reform, which comprises individuals from the poultry industry and various organisations, welcome the announcement of this initiative.

Throughout this reform process, the coalition will be advocating for comprehensive reform that fully upgrades the current regulatory system to protect public health.

Specifically, members of the coalition believe:

- The current system for regulating poultry safety is broken
- To achieve better results, USDA must transform and strengthen its standards
- Food safety should extend from farm to fork
- USDA must address both salmonella and campylobacter in poultry
- Regulatory reform should be paired with investment in research.

A key component is encouraging preharvest controls to reduce salmonella contamination coming into the slaughterhouse. Photo: Adobe Stock Pantovich

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CCD animal health

Unit 2, 84-92 Barnes Street
Tamworth NSW 2340
ccdanimalhealth.com.au

José Borsotti
0419 620 310

Eddie Pecotich
0437 408 961

Fabian Barcelo
0447 444 674

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brad@tresidders.com.au
www.tresidders.com.au

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Associate Director

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Scotty Miller
DIRECTOR

PO Box 30, Donnybrook QLD 4510
86 Beerburrum-Donnybrook Rd, Donnybrook

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Patarker

Michael Bigeni
Director

8 Robertson Place
Jamisontown NSW 2750

P: 02 4732 5520
M : 0410 663 005
E : michael@patarker.com.au

www.patarker.com.au

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Key Account Manager

AusPac Ingredients Pty.Ltd.
Unit 1, 84-92 Barnes Street
Tamworth NSW 2340
Mobile +61 (0) 429 127 599
Tel +61 2 6762 7708
Fax +61 2 6762 7709
Email nathan@auspacingredients.com.au

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www.customvac.com.au

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Greg Heeney
Country Manager

gheeney@zinpro.com
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BEC

Craig McCann
NATIONAL KEY RELATIONSHIP MANAGER

M +61 488 025 555
E c.mccann@becfeed.com.au
W becfeedsolutions.com.au

FIAAA

BEC

Natalie Schwerin
M.ScAg AARNe
TECHNICAL MANAGER

M +61 439 862 788
P +61 7 3723 9810
E n.schwerin@becfeed.com.au
W becfeedsolutions.com.au

FIAAA

BEC

Peter Cransberg
BAgrSc
SALES REPRESENTATIVE

M +61 439 605 339
E p.cransberg@becfeed.com.au
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