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NATIONAL Poultry NEWSPAPER

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ACMF's year in review

■ Building resilience for a growing industry

AS Australia's most consumed meat protein, chicken continues to play a critical role in feeding the nation.

In 2025-26 annual consumption exceeded 54kg per person, with the industry continuing to be one of the only Australian meat sectors to record production growth.

With a gross value of production approaching $3.8 billion and retail value exceeding $11 billion, the sector remains Australia's largest meat industry by volume and one of its most important contributors to food security and regional employment.

This year, the emergence of highly pathogenic avian influenza H5N1 in Australia fundamentally changed the nation's biosecurity landscape.

At the same time supply chain pressures have also raised the importance of policy levers that support industry continuity as a matter of safeguarding our national food security.

Against this backdrop, the Australian Chicken Meat Federation worked across government, industry, research and education to strengthen the foundations that support a modern, productive and resilient chicken meat industry.

The result was a year focused not only on managing risk, but on building capability for the future.

Enhancing biosecurity preparedness and capacity through MANE

The detection of H5N1 in Australia reinforced the reality that emergency animal disease preparedness cannot be viewed as a future challenge.

It is a current and ongoing priority.

Throughout the year, ACMF continued to deliver outcomes through its High 5 Project, with a significant achievement being the national rollout of modified atmosphere nitrogen euthanasia workshops.

Developed through industry-led research, MANE provides a humane and scalable whole-of-shed depopulation capability designed to support large-scale emergency disease responses.

Over the past 18 months, the ACMF team – supported by industry and working closely with governments – has transformed this technology from an initial concept into a fully operational system that provides an important tool for industries responding to large-scale emergency animal disease events.

During 2026, ACMF delivered the first national MANE workshop program across NSW, Victoria, Queensland, South Australia, Western Australia and Tasmania.

These workshops brought together poultry producers, government responders and industry stakeholders, building practical capability and creating stronger partnerships

☛ continued P2

Deputy CEO leading MANE workshops.



EFA CEO Melinda Hashimoto, Johann Strauss from SBA (platinum sponsor of EFA and award sponsor), Brianna and Sandra Wilson (accepting Ian Wilson's award), Tom Moore and EFA chair Brett Langfield.

EFA honours industry leadership and achievement at 2026 awards

TWO Australians whose work reflects the dedication, innovation and leadership behind national egg production have been honoured at the 2026 Egg Farmers of Australia Industry Recognition Awards in Sydney.

Tom Moore, owner and operator of New England Free Range Eggs near Tenterfield, NSW, received the Egg Farmers of Australia Young Egg Industry Achiever of the Year Award.

And Western Australian producer Ian Wilson of Fremantle Egg Company received the Egg Farmers of Australia John Coward Memorial Industry Leader Excellence Award.

Sponsored by Specialised Breeders Australia, which supplies chicks to egg farms across the country, the awards recognise contributions from people connected to Australia's commercial egg sector.

Egg Farmers of Australia chief executive officer Melinda Hashimoto said the awards acknowledged the people whose commitment helps Australian families access fresh eggs, an affordable source of protein.

"Aussie egg farmers and the people they work with behind the scenes all work hard to maintain a consistent and clean supply of fresh eggs for Australian families and these awards show that we value their efforts," Ms Hashimoto said.

For Tom Moore, the recognition reflects more than a decade of experience in free range egg production and a commitment to ethical sustainable farming.

A former Nuffield Scholarship recipient, Tom combines strategic leadership with daily farm management.

His experience covers animal husbandry, biosecurity, regulatory compliance, distribution and supply chain management.

He has introduced solar energy and regenerative pasture practices to reduce environmental impacts and improve farm efficiency.

He also shares his knowledge with others, promoting best practice in animal welfare and compliance.

Through local and state consultations on free range standards, Tom has championed regional producers.

His approach demonstrates resilience, integrity and innovation, providing an example for people entering agriculture from outside traditional farming pathways.

Looking ahead, Tom intends to continue contributing to discussions on egg production and biosecurity, adopting technologies that improve sustainability and welfare and supporting the

☛ continued P2



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Poultry Industry Calendar of Events

2027

JAN 26-28 – International Production & Processing Expo (IPPE) 2027, Atlanta, USA. https://www.ippexpo.org/

JAN 27-29 – Nutritional Biochemistry Workshop, Sydney, Australia. https://t.e2ma.net/click/082twi/0g5sbr1/c607ns

FEB 1-3 – APSS 2027, Sydney, NSW. https://apss.sydney.edu.au

FEB 24-25 – RSPCA Animal Welfare Seminar 2027, online. https://www.rspca.org.au/learn/animal-welfare-seminar/rspca-animal-welfare-seminar-2027/

MAR 4 – 2027 Nebraska Poultry Industries Annual Conference, Nebraska, USA. https://www.nepoultry.org/events

MAR 10-12 – VIV Asia 2027, Bangkok, Thailand. https://asia.viv.net

APR 20-22 – PEAK 2027, Minneapolis, USA. https://peakmidwestpoultry.com/attend/

AUG 10-12 – Livestock Malaysia 2027, Lumpur, Malaysia. https://livestockmalaysia.merebo.com/

SEP 15-17 – Ildex Indonesia 2027, Jakarta, Indonesia. https://www.ildex-indonesia.com/

How to supply event details:
Send all details to National Poultry Newspaper, PO Box 162, Wynnum Qld 4178, call 0450 672 553 or email design@collins.media

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ACMF's year in review: building resilience for a growing industry

☛ from P1

between those who would ultimately be called upon during an emergency response.

In parallel, ACMF progressed practical recovery solutions through the development of EAD composting standard operating procedures in partnership with government agencies.

These protocols will help affected farms safely manage disposal when movement restrictions are in place, providing a practical pathway to business continuity during outbreaks.

At a policy level, ACMF continued to advocate for stronger biosecurity systems through submissions on national and state biosecurity reforms.

Whether contributing to the Australian Government's National Biosecurity Reform Agenda, changes to state-based biosecurity legislation or engaging with the development of state biosecurity strategies, ACMF consistently championed practical, science-based and industry-led approaches to preparedness, response and recovery.

Collectively, these initiatives reflect a broader strategic direction – ensuring Australia's chicken meat industry is not merely responding to biosecurity threats, but actively building the capability required to manage them both now and into the future.

Food security and supply chain resilience move centre stage

The events of recent years have demonstrated that food security and biosecurity are increasingly interconnected.

Australia's chicken meat industry delivers fresh product to consumers through highly coordinated national supply chains.

Maintaining this system requires secure access to fuel, feed, vaccines, packaging, transport and skilled labour.

Throughout 2026, concerns around fuel availability and global supply chain disruptions placed renewed focus on resilience.

ACMF played a leading role in national roundtable discussions with federal ministers regarding fuel security, advocating for recognition of intensive livestock industries within government contingency planning.

The federation's engagement with ministers, peak agricultural organisations and government agencies reinforced the importance of maintaining food production capability during future supply disruptions through reliable infrastructure and priority access to fuel and fertiliser.

ACMF champions strong food safety system

Concurrently, ACMF continued to engage with food safety regulators and governments as regulatory frameworks evolved across multiple jurisdictions.

Significant engagement occurred during Queensland's review of the Food Production (Safety) Act and Victoria's transition from PrimeSafe to Safe Food Victoria, as state's endeavour to modernise their approach to food safety stewardship at the regulatory level.

Across all these discussions, ACMF maintained a clear focus on ensuring regulation remains practical, nationally consistent and supportive of strong food safety outcomes without imposing unnecessary burdens on producers.

As a supporter of the Food Safety Information Council, ACMF also continues to reinforce an important message to consumers and the wider community – chicken meat is a safe, versatile and nutrient-dense source of protein and, following appropriate food handling, storage and preparation practices, is essential to minimising the risk of foodborne illness.

ACMF will continue to support consumer awareness campaigns and food safety messaging, while strengthening our commitment to food safety through ongoing monitoring, data collection and responsible stewardship practices.

Investing in people and future capability

According to our most recent economic contribution study, our industry's workforce has grown by approximately 30 percent since 2020, yet attracting and retaining talent remains a key challenge across agriculture and food production.

Throughout 2026, ACMF worked to strengthen industry pathways through engagement with universities, training providers and workforce development organisations.

Partnerships with tertiary institutions, such as the University of Sydney, helped showcase the broad range of careers available to students across the chicken meat supply chain, from animal welfare, nutrition and veterinary science through to operations, research, sustainability and business leadership.

ACMF also continued to support initiatives designed to strengthen biosecurity capability and workforce preparedness, including collaboration with the National Meat Industry Training Advisory Council on the Flock Safe program and engagement with Skills Insight's Biosecurity Skills Review.

Together, these initiatives are helping ensure the industry has access to the skilled workforce required to support future growth, innovation and resilience.

Looking ahead

The story of 2026 is ultimately a story of preparedness.

While the industry continued to achieve strong production, employment and consumer outcomes, the year's most significant achievements were those that strengthened future capability.

Whether through advancing MANE technology, strengthening emergency response capacity, shaping biosecurity reform, developing a new welfare standard, progressing sustainability initiatives or investing in future talent, ACMF remained focused on ensuring the chicken meat industry is prepared for the challenges and opportunities ahead.

As Australia's favourite protein and largest meat sector by volume, the industry has an important responsibility to feed the nation.

In 2026, ACMF's work helped position the Australian chicken meat industry to continue delivering on that responsibility – providing safe, affordable and sustainable food while building a stronger more resilient future for producers, communities and consumers alike.

ACMF



At USYD animal science networking evening.



Dr Mary Wu presenting at PIX conference.



At PIX 2026.



CEO Dr Mary Wu leading roundtable discussions on fuel security.

EFA honours industry at 2026 awards

☛ from P1

viability of family-owned farms.

Ian Wilson's award recognises more than 40 years of service to the egg industry.

Together with his wife Sandra, he owns and operates Fremantle Egg Company, a fourth-generation Western Australian business.

His experience spans cage and free-range production, with responsibilities extending from flock management and biosecurity to staff supervision, logistics and customer relationships.

Ian's contribution also reaches beyond his farm.

He served as EFA's Western Australian Board director from 2019 to 2024 and was president of the Commercial Egg Producers Association of Western Australia for more than 10 years.

At the end of 2024, he joined the Australian Eggs Board.

He has trained staff and emerging producers in flock care, egg handling and safe production, while contributing to policy discussions, biosecurity preparedness and quality assurance.

Ian remains an advocate for small and medium farms, ensuring their experiences inform discussions about regulation and market conditions.

Together, Tom and Ian represent the strength of an industry built on practical knowledge, continuous improvement and service to others.

EFA congratulates the winners and thanks Specialised Breeders Australia for supporting recognition of the people helping shape the industry's future.

Egg Farmers of Australia

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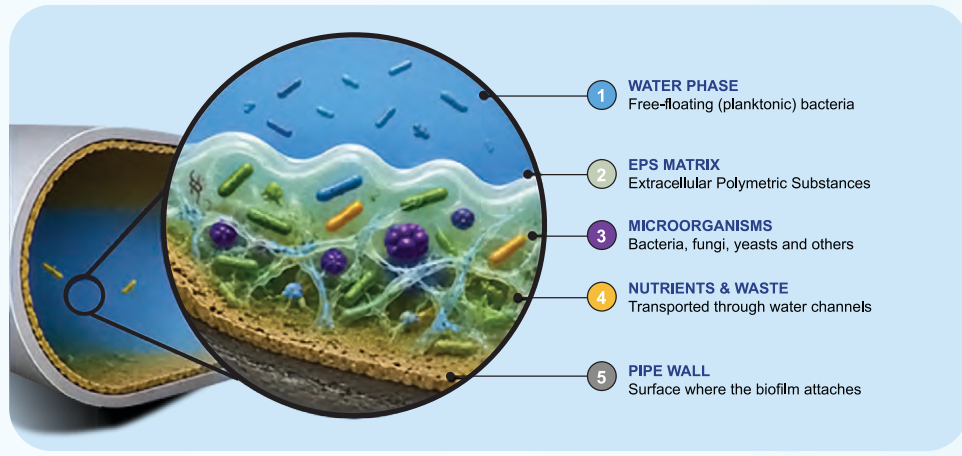
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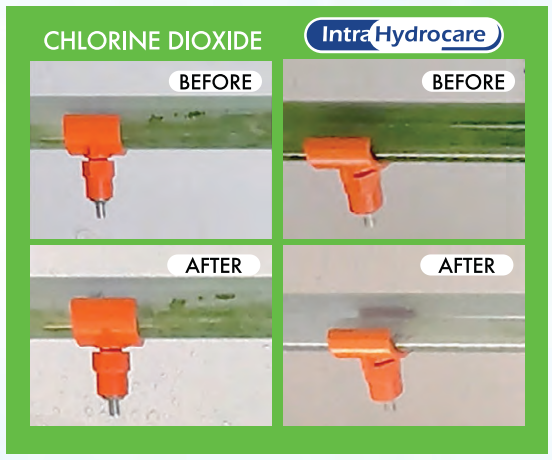
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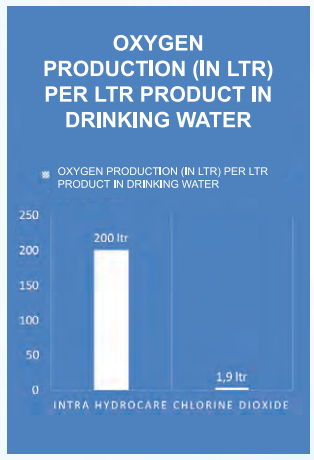
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What new RSPCA standard for meat chickens means for producers



Meat chickens should be provided with friable litter to encourage natural behaviours such as scratching, foraging and dust bathing.



RSPCA Certified meat chickens should be provided with opportunities to have positive experiences through greater choice and to express important behaviours, such as perching.

CONSTANT advances made across animal welfare science and farming practices coupled with evolving community expectations mean meat chicken production has changed significantly over the past decade.

So too will it continue to change in the decades to come.

For producers participating in the RSPCA Certified scheme, those advances are reflected in the newly revised RSPCA Australia standard for meat chickens.

RSPCA Australia reviews its standards every five years or so to ensure animal welfare requirements continue to reflect current scientific evidence while remaining achievable for committed producers working within commercial farming systems.

The latest review strengthens several existing requirements and introduces new measures focused on giving birds greater choice, improving their environment and reducing welfare risks during handling, transport and slaughter.

What is changing?

The revised standard focuses on improving several aspects of a meat chicken's lifespan, the most significant being:

- A phased reduction in stocking density from 34kg/m2 to 32kg/m2 for tunnel ventilated sheds and 32kg/m2 to 30kg/m2 for mechanically ventilated sheds – giving chickens more room to move freely within sheds
- The phased introduction of variable light intensity to allow chickens to choose between brighter and darker lit areas of the shed
- The phasing out of routine electrical water bath stunning.

Other important changes introduced in the 2026 meat chicken standard include strengthened requirements around chick transport, increased air quality monitoring within sheds, extending the period of continuous darkness from four to six hours – giving chickens more opportunity for uninterrupted rest – and improvements in catching and transport of birds to minimise stress and risk of injury.

Producers are also encouraged to provide birds with platforms as well as perches, giving chickens more opportunities to perch and rest undisturbed.

And for the first time the standard introduces an 'enhanced welfare' section for producers seeking to further improve bird welfare by raising higher-welfare slower-growing meat chicken strains.

What does this mean for producers?

For producers who wish to align operations to the standard, these changes mean reviewing current practices against its new requirements and planning ahead to phase them in.

Importantly, not every change is expected to happen immediately.

The transition period for some of the changed requirements recognises that meaningful improvements to animal welfare must also be practical to implement across farming and supply-chain systems.

That approach reflects the purpose of RSPCA Certified – it works with producers and industry within existing commercial farming systems to achieve tangible improvements in the lives of large numbers of farmed animals.

That means setting requirements that push welfare forward, while recognising the practical realities involved in implementing change on farm.

Continuous improvement

The revised standard represents another step in that process, rather than an endpoint.

Animal welfare science will continue to evolve, as will farming technology and our understanding of what chickens need for a good quality of life.

RSPCA Australia's standards will likewise continue to evolve, while maintaining a focus on providing opportunities for animals to have positive experiences through greater choice and the ability to express important behaviours.

For producers already participating in RSPCA Certified, that process of continuous improvement will be familiar.

The new standard builds on the progress already made by Australian meat chicken producers, while establishing a clear direction for the next stage of higher-welfare production.

For more information about RSPCA Certified and the RSPCA's standard for meat chickens, visit rspcacertified.org.au



The new RSPCA standard for meat chickens introduces variable light intensity to allow chickens the choice between brighter and darker areas of the shed.

Melina Tensen
RSPCA Australia
Senior Scientific Officer (Farm Animals)

NATIONAL Poultry NEWSPAPER

NPN would like to thank all producers, advertisers and contributors for their support in 2026.

We also wish everyone a safe and merry Christmas and happy New Year.

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Two fried eggs with bacon and tomatoes the author cooked one breakfast at his traditional Japanese home via Airbnb in the beautiful town of Arrita.



Fried egg with rice and vegetables for breakfast at a Tokyo hotel.



This scrambled egg toastie was enjoyed at what was a Japanese version of a fast-food restaurant. It satisfied hunger pangs when on the road.



Spotted a cutely named chicken shop when walking 1.5hrs from Shinagawa to Ginza. Didn't go in for lunch though tempted.

Eggs eaten everywhere in Japan, cooked or not

Cant Comment

by **BRENDON CANT**



A LIFETIME lover of eggs, I was pleased to not have to scramble to savour good eggs and egg dishes when in Japan last month.

Not only are the Japanese world leaders in selecting the best fresh food ingredients and serving and cooking said ingredients in the most delicious way, in my mind at least… they also excel in presentation.

That commitment to excellence makes pretty much every eating experience in Japan memorable.

Interestingly and unlike in Australia, raw eggs are almost a staple in Japanese dining.

Eating raw or lightly cooked eggs is a significant part of Japanese culinary culture, made possible by strict national hygiene and safety standards.

On the subject of hygiene and safety, it's worth pointing out that Japan does it like no other country.

While you'll virtually never see litter on the streets, you'll similarly hardly ever see a communal rubbish bin.

Counter intuitive you would think, until you learn that the Japanese are very proud of their city and suburban streetscapes.

When out and about, they will put into plastic bags any packaging or food waste, take it home and then sort the waste into specific categories.

Sometimes at supermarkets you'll see rubbish bins, but always several together and well sign posted to accept and cater for appropriate sorting into the likes of plastic, bottles, cans and food.

Raw eggs are safe to eat in Japan due to very strict processing, with grading and packing centres washing, sanitising with ultraviolet light and testing eggs for cracks or internal flaws such as blood spots, using automated acoustic hammers and imaging technology.

Also, poultry farms follow rigorous hygiene controls to prevent contamination, dramatically dropping the risk of foodborne illness from raw eggs to approaching zero.

Egg cartons in Japan feature a stamped 'best before' date, specifically calculated for raw consumption.

☛ continued P7





Presentation is very important in Japan, even down to how two eggs are tabled for this hotel breakfast.

Eggs eaten everywhere in Japan, cooked or not

☛ from P6

Once that date passes, the eggs should be cooked thoroughly rather than eaten raw.

Here's a few classic Japanese egg dishes, some of which I sampled when out and not cooking lesser versions of my own while staying at a delightful Airbnb home in Arrita for five days.

Tamago kake gohan

A comforting breakfast classic consisting of a raw egg cracked directly over a bowl of hot steamed rice, mixed with a splash of soy sauce.

Sukiyaki dip

A whisked raw egg served in a small bowl to act as a rich cooling dipping sauce for hot savoury-sweet beef and vegetables.

Tamagoyaki

Sweet and savoury rolled layers of fried dashi-infused egg.

Chawanmushi

A silky savoury egg custard steamed in a cup with chicken, ginkgo nut or mushrooms.

Oyakodon and gyudon toppings

Simmered chicken and egg over rice or beef bowls topped with a raw or poached egg.

Convenience store eggs

Konbini (similar to 7-Eleven) sell precooked snack eggs in different stages of softness, such as hanjuku tamago (runny yolk) and kanjuku tamago (barely jellied).

While fish appears to be the favoured protein food in Japan, chicken is also eaten, albeit nowhere near as popular.

I'm informed KFC operates more than 1000 locations across Japan, combining the classic original recipe with unique local traditions, regional flavour and iconic holiday customs such as eating KFC for Christmas Eve and Christmas Day.

Given my experience of and passion for the freshness, wholesomeness and sheer beauty of Japanese food, I can say I'm surprised at the infiltration of KFC in such numbers in such a traditional country.

Some may call this progress.

Me not.

Anyway, enjoy some pictures from my trip.

Sayonara.



When at a Shinagawa hotel, the author cooked breakfast eggs at the table.



Farmer's Chicken shop menu. Confident the variety, quality and dishes would surpass that of the selection available in the international fast-food chicken outlet now beginning to assert some dominance in Japan.

Bourke Abattoir goes with Gorman-Rupp pumps

DARLING Irrigation supplies solutions for irrigation, domestic water systems, mining hydraulics, stock watering and more.

With a staff of around 50 and four locations in western NSW – and one in Launceston – Darling Irrigation assists a wide range of customers with quality water systems.

The company recently undertook a contract for the design and construction of water and wastewater infrastructure for the upgraded Bourke Abattoir.

Wanting to deliver a quality project with pumps that were reliable, easy to maintain and safe for operators, Darling Irrigation approached Hydro Innovations for solutions using Gorman-Rupp self-priming pumps.

There were five applications for a total of nine pumps from kill floor hose down to pond storage transfer and effluent pumping.

As some of these applications contained abrasive media in the pumped water, Hydro Innovations offered pumps with Gorman-Rupp 'hard iron' internals to reduce wear rates and considerably lengthen the intervals between servicing.

Darling Irrigation chose the Gorman Rupp pumps for their strong international reputation, reliability and longevity in tough pumping conditions.

And because they are self-priming pumps, they could be mounted at ground level so that operators have easy and safe access to the pumps for monitoring and maintenance, without the need for cranes.

On the job for Darling Irrigation project manager Phil Chegwidden has been impressed by how easy the pumps were to install, how quickly the pumps prime and how smoothly they operate.

He said he could understand why many abattoirs have standardised on Gorman-Rupp pumps for their wastewater systems.

For further information regarding the extensive range of Gorman Rupp self-priming pumps and the services that Hydro Innovations is able to offer to remedy your wastewater, sewerage, aeration and any pump issues, visit our very informative website at www.hydroinnovations.com.au or phone 02 9898 1800.

Hydro Innovations



Darling Irrigation chose the Gorman Rupp pumps for their strong international reputation, reliability and longevity in tough pumping conditions.



Preparing for financial impact of avian influenza outbreak

AVIAN influenza remains one of the most significant risks facing Australia's poultry industry.

While producers invest heavily in biosecurity, many businesses have not fully considered the financial consequences of a major disease outbreak.

Australia's animal health response systems are among the best in the world and have proven effective in responding to avian influenza incidents.

However even a well-managed outbreak can create significant disruption for producers, extending far beyond the loss of birds.

Under Australia's emergency animal disease response arrangements, producers may be compensated for poultry destroyed as part of an official disease response, along with certain disposal and decontamination costs.

These programs play a critical role in supporting disease control and eradication efforts.

What many producers do not realise is that these arrangements generally do not compensate for the broader financial impacts on a business.

Movement restrictions, loss of production, reduced placement numbers, supply chain disruption, loss of customers and delays in repopulating farms can all affect profitability and cash flow long after the disease itself has been contained.

Recognising this gap, Gallagher has worked closely with poultry producers and international insurance markets to develop a specialist avian influenza insurance solution for the Australian poultry industry.

The cover has been specifically designed to respond to loss of income and business interruption resulting from an avian influenza event, providing financial protection where traditional compensation arrangements may not respond.

This development reflects a growing recognition that avian influenza is not simply an animal health issue – it is a business continuity risk that requires both operational and financial planning.

Importantly, insurance is not a substitute for strong biosecurity practices.

Robust on-farm biosecurity remains the first and most effective line of defence against disease introduction and spread.

However, even the best-managed operations can be impacted by circumstances beyond their control.

The reality is that many poultry businesses understand their biosecurity risks but have never quantified the financial impact of a prolonged interruption to production.

Now is the time to ask some important questions:

- How long could the business operate without production income
- What would a six-month disruption cost
- Would existing compensation arrangements cover the full financial impact
- Have any gaps in business interruption protection been identified?

The businesses that recover most effectively from a disease event are often those that have planned for both the operational and financial impacts in advance.

Biosecurity protects your birds.

Financial preparedness protects your business.

If you have not recently reviewed your exposure to avian influenza and assessed the availability of specialist loss of income protection, now is the time to start that conversation – before an outbreak occurs rather than after one.

For further information, contact me on 0432 594 805 or Luke.Chrzanowski@ajg.com.au

Luke Chrzanowski
Gallagher Manager Corporate



According to the author, financial preparedness protects your business.

Fibre research targets hunger and welfare in broiler breeders

RECENT research by Natalie Morgan, Peta Taylor, Bec Forder, David Cadogan, Matt Hilliar, Christine Sydenham and Stuart Wilkinson investigated whether the swelling capacity of dietary fibre could help broiler breeders feel fuller while maintaining the controlled growth required for successful breeding.

Broiler breeders have a strong genetic drive for growth and feed intake.

If fed ad libitum, birds can gain excessive body weight, increasing the risk of mortality, lameness, metabolic disease and reproductive problems.

Feed restriction is therefore a fundamental part of broiler breeder management, with birds sometimes receiving only 20-30 percent of the feed they would consume if given unrestricted access.

While this supports bodyweight control and reproductive performance, it can also result in hunger, stress and compromised welfare.

Balancing breeder performance with satiety and welfare therefore remains an important challenge for the industry.

The research investigated whether the functional properties of dietary fibre could help address hunger associated with feed restriction in broiler breeders.

Rather than considering fibre concentration alone, the team examined how different feed ingredients behave physically when exposed to water, including their capacity to swell, hold and bind water.

Fibre that absorbs water and increases in volume may increase gut fill, providing a potential mechanism for promoting satiety.

A key output was the development of a database characterising these functional properties across common poultry feed ingredients and fibre-rich ingredients.

Considerable variation was identified between ingredients, showing that ingredients with similar nutritional characteristics can behave very differently when exposed to water.

This provides an additional way of characterising feed ingredients beyond conventional nutrient and fibre values.

The researchers tested broiler breeder diets with similar nutritional value but different swelling capacities to determine whether this physical characteristic influenced how birds responded to feed restriction.

Feeding behaviour and indicators of satiety and welfare were assessed throughout the rearing period.

The project also addressed the challenge of how to assess hunger in broiler breeders.

The team evaluated behavioural approaches for assessing feeding motivation and birds' responses to feed restriction.

This work helped identify methods that could be applied in future nutrition and welfare studies to assess whether dietary strategies are effective in promoting satiety.

The findings from this project provide a foundation for considering fibre functionality rather than fibre concentration alone in broiler breeder nutrition.

Incorporating measures such as swelling and water-holding capacity alongside conventional nutrient values could provide nutritionists with another tool for selecting ingredients and formulating diets.

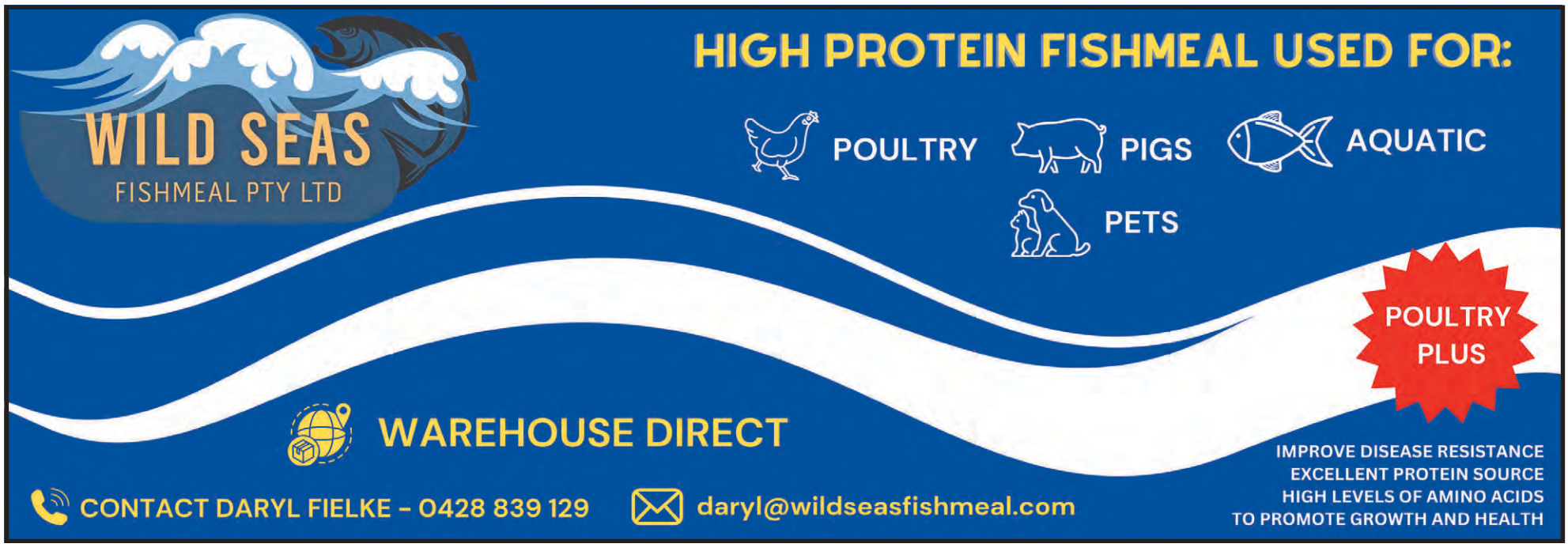
Ultimately, this approach could support the development of feeding strategies that increase gut fill and promote satiety during feed restriction while maintaining appropriate bodyweight control and reproductive performance, helping to address an important welfare challenge in broiler breeder production.

The full report will be released early 2027.

Poultry Hub Australia



The findings provide a foundation for considering fibre functionality rather than fibre concentration alone in broiler breeder nutrition.





The forward pointing crest characteristic can be clearly seen in this silver spangled Appenzeller Spitzhauben cock.



This hen is one of the original silver spangled Appenzeller Spitzhauben hens that were imported as hatching eggs in 2026.

Appenzeller Spitzhauben

THE Appenzeller Spitzhauben is a breed that is relatively new to Australia.

It formed part of the doomed importation of purebred poultry in 2013 and was then successfully imported in 2016.

Unlike many of the so-called 'new breeds' that were imported around that time, the Appenzeller Spitzhauben has no history of importation into Australia prior to the embargo dating back to the middle of the twentieth century.

Originating in Switzerland, the Appenzeller Spitzhauben belongs to a group of fowls that originated in the central European area that share many similar characteristics of type and size.

One of the features of the Swiss breed is a forward pointing crest, a characteristic that is shared by the Brabanter breed from Belgium and the Netherlands.

However, the Brabanter is easily distinguished from the Appenzeller by its well-developed beard and muff.

Another though now extinct breed that was almost identical to the Appenzeller Spitzhauben was known as the Yorkshire Hornet and was bred and exhibited in the United Kingdom until at least the middle of the twentieth century.

The Yorkshire Hornet was photographed in 1930 by the iconic British poultry photographer Arthur Rice, the birds belonging to a family who had bred them for over 80 years.

Those birds closely resembled the gold spangled Appenzeller Spitzhauben.

The term Spitzhauben refers to the peaked crest sported by this breed.

Another form of the Appenzeller, the Barthuhn (bearded fowl), was not imported into Australia.

This breed does not sport the peculiar crest but has a beard and muff, from which it gets its name.

Though the Appenzeller Spitzhauben was reputed to have been bred in the Appenzell region of Switzerland for many centuries, by the 1950s the breed was close to extinction in its native land.

In 1982, the Swiss Foundation for the Cultural and Genetic Diversity of Plants and Animals (ProSpecieRara) was established with the aim to save traditional Swiss breeds of farm animals and crops from extinction.

With the support of this organisation, a breeding program to save the Appenzeller Spitzhauben was undertaken in 1983.

By the 1990s, the breed had been imported into the UK and a standard published in the fifth edition of the *British Poultry Standards*.

The Spitzhauben was recognised in that standard in three colours – black, gold spangled and silver spangled.

In Europe, other colours are bred.

The 2016 importation saw three colour varieties arrive in Australia – gold spangled, silver spangled and chamois.

The first two colours resemble the pattern found in the spangled varieties of the Hamburgh breed – black spangles on a ground of gold-red and silvery-white respectively.

The chamois has a golden buff ground colour with creamy white spangles.

Ironically, the standard that was accepted and published by the Australian Poultry Standards Committee in the Addendum 2 to the *Australian Poultry Standards* second edition recognises a black and a white variety in addition to the three imported colours.

The Appenzeller Spitzhauben is active and alert in carriage.

Its most outstanding feature is its medium-sized forward pointing crest, which has no inclination to the globular shape found in many other crested breeds.

This combines with a horn-shaped comb consisting of two small, rounded and vertical spikes and rather cavernous nostrils to give the breed an appearance that is unmistakeable.

Historically, the Appenzeller Spitzhauben had a reputation for being a frugal fowl, capable of scratching for much of its food and requiring very little supplementary feeding, and providing a fair supply of white-shelled eggs for its owners.

The breed does not perform at its best when kept in confinement and appears to thrive better when given a large range over which to roam and scratch.

When first imported, the breed attracted quite a few fanciers but, as for many of the new breeds, it took a while for it to acclimatise to conditions here and some early fanciers experienced some difficulties rearing stock and maintaining the forward pointing crest characteristic.

In addition, there were potential problems associated with the lack of genetic diversity in the imported birds, a problem which the more serious breeders have been able to overcome to a certain extent.

Fortunately, the gold spangled and silver spangled varieties offer the possibility of a sex-linked cross within the breed to produce birds with a little hybrid vigour – the mating of a gold male over silver females producing gold females and silver males split for gold.

While the Appenzeller Spitzhauben remains a minority breed, its band of committed supporters ensure its future in this country.

Grant Andrews
Rare Poultry
Breeders Association





PHA student Milan Kandel at Turosi



Visiting different farms and observing how management decisions affect bird health, welfare and performance was particularly valuable to Milan.



Milan learned how nutrition, feed manufacturing, farm equipment, environmental management and bird performance are interconnected within an integrated poultry business.

POULTRY Hub Australia shares the positive experience of Milan Kandel, a PhD student from the University of Sydney, who undertook an industry placement with Turosi Food Solutions Group in Victoria.

During his placement, Milan gained valuable hands-on experience across broiler breeder and commercial broiler production, poultry nutrition, feed quality and farm management.

Working alongside experienced industry professionals, he was able to apply his academic knowledge in a commercial setting and undertake a practical study investigating feed quality and nutrient distribution on broiler farms.

Milan rated his placement as excellent, highlighting the opportunity to develop practical skills, build industry connections and gain a better understanding of career pathways within the poultry sector.

PHA supported Milan's placement through funding of $500 per week, helping to cover accommodation, transport and living expenses.

Milan strongly recommends industry placements to other students, particularly research students, as an opportunity to connect academic research with real-world industry challenges.

Read on for Milan's full placement report to learn more about his experience, the skills he developed and his insights into the poultry industry.

Can you briefly describe your placement and the type of work or activities you were involved in?

My placement with Turosi provided practical exposure to an integrated poultry production system.

I participated in activities across broiler breeder rearing and laying, commercial broiler production, nutrition, feed quality and farm management.

My field activities included monitoring bird body weight and uniformity, assessing brooding conditions, checking feeder and drinker management, evaluating ventilation and temperature distribution, observing flock health and performance in broiler breeder and commercial broiler and conducted a field study on feed quality and nutrient distribution at commercial broiler farms.

What were the main skills or knowledge you gained during your placement?

I gained hands-on practical knowledge of broiler breeder and commercial broiler management, including brooding, feeding programs, lighting, ventilation, flock health, bird uniformity, reproductive performance and egg production.

I also developed skills in commercial feed sampling, particle-size assessment, field data collection, bird weighing, farm observation and identification of management-related problems.

Most importantly, I learned how nutrition, feed manufacturing, farm equipment, environmental management and bird performance are interconnected within an integrated poultry business.

What was the most valuable or enjoyable part of your placement?

The most significant part was learning directly from experienced industry professionals and applying my academic knowledge under commercial conditions.

Visiting different farms and observing how management decisions affect bird health, welfare and performance was particularly valuable.

I also enjoyed developing the feed assessment study because it allowed me to investigate a practical industry problem.

It helped me understand how feed distribution along a commercial feeding line could potentially influence nutrient intake, flock uniformity and production performance.

Did the placement help you better understand the poultry industry and potential career opportunities within the industry?

Yes, the placement significantly improved my understanding of how the different parts of the poultry industry operate together.

I could see how decisions involving breeder management, hatchery outcomes, feed quality and farm management could influence broiler performance and the efficiency of the entire production system.

The experience also introduced me to potential career pathways in poultry nutrition, technical services, production management, research and development and integrated poultry operations.

It strengthened my interest in pursuing a career that involves practical industry problem-solving.

What could have been done differently to improve your placement experience?

The placement experience was very positive.

Additional financial support covering the full placement period would also make placements more accessible to students working across geographically dispersed farm locations.

PHA provided financial support of $500 per week during your placement – how did this funding assist you, and would you have been able to undertake the placement without this support?

This financial support helped me cover essential expenses, particularly accommodation, transport and daily living costs while undertaking the placement away from my residence.

As I was required to travel between multiple farms, completing it without this support would have been extremely difficult.

The Poultry Hub Australia funding was therefore important in enabling me to participate and gain this valuable industry experience.

Would you recommend an industry placement like this to other students?

Yes, I would strongly recommend this type of industry placement to others as well.

It allows students to apply academic knowledge in real commercial situations and understand the practical, financial and operational factors involved in poultry production.

It also helps students develop practical skills, professional networks, confidence and a clearer understanding of potential career pathways.

For research students in particular, an industry placement can help ensure that their research remains relevant to the practical needs of poultry producers and industry.

Poultry Hub Australia



Milan Kandel and Dr Matthew Hilliar.



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Rosemary Walzem

Rosemary Walzem, RD, PhD, is professor of nutrition and poultry science at Texas A&M University whose career has centred on advancing the science of poultry nutrition, metabolism and physiology. Her research integrates nutritional biochemistry, lipid metabolism and poultry biology to address fundamental questions with practical relevance to animal agriculture and human health. Through studies of egg composition, lipid transport, laying hen and breeder nutrition and metabolic regulation, she has helped expand understanding of how nutrition influences poultry performance, product quality and the nutritional value of eggs. Since joining Texas A&M University in 1999, Dr Walzem has maintained an active program of research, teaching and graduate mentorship while fostering collaborations across disciplines and with industry partners. Her work has been supported through competitive funding from federal agencies, commodity organisations and industry, resulting in a sustained record of scholarly publications and scientific leadership. Dr Walzem has educated undergraduate and graduate students in poultry science and nutrition, mentoring numerous MS and PhD graduates who now serve in academia, government and the animal agriculture and food industries. Her approach to science emphasises integration across disciplines and translation of basic discoveries into applications that benefit poultry production and human nutrition. Her expertise in poultry nutrition and metabolism has earned national recognition, including selection by the National Academies of Sciences, Engineering and Medicine to serve on the expert committee preparing the tenth revised edition of Nutrient Requirements of Poultry. This invitation reflects the confidence of the scientific community in her ability to evaluate emerging evidence and contribute to the development of authoritative guidance that will shape poultry nutrition research and practice for years to come.



Steven Ricke

Dr Steven C Ricke received his BS and MS from the University of Illinois and PhD from the University of Wisconsin. Dr Ricke was a USDA-ARS post-doctorate in the microbiology department at North Carolina State University then joined Texas A&M University as a professor in the poultry science department.

In 2005, he became the first holder of the new Donald 'Buddy' Wray endowed chair in food safety and director of the Center for Food Safety at the University of Arkansas and was a faculty member of the Department of Food Science and cellular and molecular graduate program. He served as director of the meat science and animal biologics discovery program in the Animal and Dairy Sciences Department at the University of Wisconsin-Madison from 2020 to 2025, and he is currently a professor in this department. From 2015 to 2017 he served as an American Society for Microbiology distinguished lecturer. He is a fellow of the Poultry Science Association, the International Association for Food Protection and the ASM American Academy of Microbiology. His PSA awards include American Egg Board Research Award, Evonik Award for Achievement in Poultry Science, National Chicken Council Broiler Research Award, Arm & Hammer Food Production Food Safety Award and the US Poultry Distinguished Poultry Industry Career Award. Dr. Ricke's foodborne research projects have emphasised studies on the growth, survival and pathogenesis of pathogens in the poultry gastrointestinal tract and their interactions with the GIT microbiota. He is also exploring using the microbiome to characterise microbial ecology of meat and poultry processing.



Jaap van Milgen

Jaap van Milgen is a senior researcher at INRAE, the French National Research Institute for Agriculture, Food and Environment. After having received an MSc degree from Wageningen University, he received a PhD in ruminant nutrition from the University of Illinois at Urbana-Champaign. In 1992, he returned to Europe, first on a post-doctoral position followed by a permanent position at INRAE. He developed an extensive research program on the energy and protein nutrition and metabolism of pigs, using both experimental and modelling research methods.

He co-authored the InraPorc model and software tool, which is widely used in the swine industry and to teach nutritional principles. In 2010, he led the merger of three INRAE research units to a joint research unit, of which he was director for six years. From 2015-2020, he coordinated the European Feed-a-Gene project, which aimed to adapt the feed, the animal, the feeding techniques to improve the efficiency and sustainability of monogastric livestock production systems. From 2021 to 2026, he coordinated PIGWEB, a European infrastructure project for experimental research for sustainable pig production. He chairs the animal consortium that publishes the scientific journals *animal, animal – open space and animal – science proceedings*. In 2021, he received the prestigious Leroy award from the European Federation of Animal Science and in 2025 the INRAE award for innovation in research.



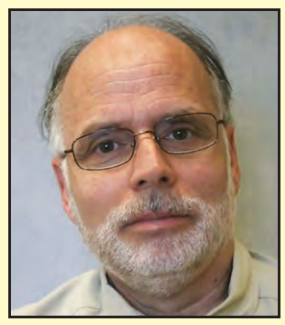
Rebecca Forder

Dr Rebecca Forder is currently a senior lecturer in the School of Animal and Veterinary Sciences at the University of Adelaide. Dr Forder has a great passion for teaching and encouraging undergraduates to pursue careers in the poultry industry. Her research interests relate to gastrointestinal development and physiology as a means to enhance lifelong productivity of animals in intensive farming systems, with a particular focus on poultry. Dr Forder's interests have expanded into the area of developmental programming and how the maternal environment influences gastrointestinal development and microbial colonisation of their progeny. Her recent research projects focuses on the breeder hen environment and novel strategies to improve the health and performance of not only the hen but that of her progeny.



Eugeni Roura

Professor Eugeni Roura is a veterinary nutritionist with core research interests in digestive physiology and gut health, chemosensory science (including taste and smell) and transgenerational mechanisms relevant to chickens, pigs and humans. He holds Veterinary and PhD degrees from the Autonomous University of Barcelona, complemented with a MPhil and post-doctoral appointments at the University of California, Davis. Following a 16-year career in the feed and food industries, Prof Roura joined the University of Queensland in 2010, where he currently leads the Nutrition and Chemosensory Science Group. His primary research interests include appetite modulation in chickens and pigs, nutritional interventions to boost embryonic and foetal development (including 'in ovo' techniques) and strategies to improve the sustainability of chicken meat, egg and pork production. Additionally, his current research in human nutrition investigates food allergies and appendicitis. A lecturer affiliated with the UQ School of Biomedical Sciences, Professor Roura has supervised 25 PhD graduates (18 as principal advisor) and authored more than 100 peer-reviewed publications. He has been a keynote speaker at over 50 national and international scientific meetings and is currently ranked within the top 0.5 percent of scientists globally in animal science and zoology. Prof Roura holds several high-level leadership positions, serving as president of the WPSA Australia, vice-president of the Australasian Pig Science Association and director of the AgriFutures Chicken Meat Consortium. He is also a member of the National Committee for Nutrition (Australian Academy of Sciences) and the Federation of Oceania Nutrition Societies (FONS). In 2024, he was the recipient of the Nutrition Society of Australia Medal.



Mark Lyte

Mark Lyte is a full professor and WE Lloyd endowed chair in the Department of Veterinary Microbiology and Preventive Medicine at the College of Veterinary Medicine, Iowa State University in Ames. He earned his MS and PhD degrees in biophysics and cellular immunology at the Weizmann Institute of Science and holds clinical board certification as a medical laboratory scientist. He had been mainly involved in human disease until joining the Iowa State University College of Veterinary Medicine in 2015.

Work from Prof Lyte's laboratory has provided the initial and continuing results demonstrating the ability of microorganisms, especially probiotics, to produce and recognise neurochemicals that are capable of influencing host health, behaviour and disease pathogenesis in farm production animals and humans. His lab is recognised as the first to publish evidence of a microbiome-gut-brain axis based on shared neurochemistry between microbes and the host. His work has resulted in the creation of a new translational scientific discipline uniting the fields of neurobiology and microbiology that has been termed 'microbial endocrinology'. He holds a number of patents utilising microbial endocrinology to design probiotics that benefit animals with an emphasis on poultry. Prof Lyte is the recipient of awards including the Zoetis Award for Veterinary Research Excellence, Joseph Susman Memorial Award for Surgical Infectious Disease Research by the Surgical Infection Societies of North America and Europe and was a finalist for the National Institutes of Health Director's Pioneer Award.



Roy Brister

Dr Roy Brister is a strategic poultry advisor for Alltech, harnessing more than three decades of experience in the industry. His focus is on supporting sales and technical teams, bridging the gap between suppliers and poultry integrators and driving new research. He is also passionate about creating actionable steps that help the poultry industry meet its sustainability goals. Dr Brister began his career as a technical nutritionist at Nutrius Inc, Diamond Shamrock and later Spring Valley Farms, the latter of which was acquired by Tyson Foods a few months after he joined. His 37 years at Tyson Foods included roles as director of nutrition and feed milling. Dr Brister specialises in nutrition and feed milling management. He is particularly interested in growth modelling as an innovative technology that can help producers achieve increased efficiency and sustainability. He is also interested in alternative ingredients that support circular nutrition and utilising data to guide critical decisions.



Birger Svihus

Birger Svihus is a professor of nutrition at Norwegian University of Life Sciences. He is the author or co-author of around 100 peer-reviewed scientific papers (H-index 41) and is the author of or contributor to several books and numerous invited conference papers. His scientific work has mainly been within the area of cereal fibre and starch, feed technology, digestive tract function and feeding systems. He had a leading role in the organisation of the fourteen European Symposium on Poultry Nutrition in 2003 and the fourteen European Poultry Conference in 2014, and was the president of the European Federation of WPSA from 2014 to 2018. From 2016 through 2021, he was editor-in-chief in *British Poultry Science*.

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Chicken hygiene Aussie's way

AT Aussie Pumps, we get a lot out of this publication.

Reading Melinda's comments and learning about poultry producers, the industry and the birds themselves.

Most of all, we're interested in table bird and egg layers, and the hygiene requirements of modern poultry farms.

One issue is water hygiene.

Aussie Pumps has developed drain-cleaning machines that can clear blocked drains promptly and efficiently.

Blocked drains can be a source of hygiene issues, as well as potential serious infections.

All the big sheds we've seen have a need for high-pressure cleaning on a regular basis to keep the birds in good condition for whatever their function is, be it the table or egg production.

We build high-pressure jetters that clear blocked drains quickly and effectively, thus reducing the problems of bird infection.

Bird flu is a persistent threat, so having a high-pressure jetter in hand in poultry operations is regarded as essential.

Our King Cobra Aussie Jetter is designed to clear blocked drains fast.

The Aussie Cobra does this by providing a 5000psi impetus to drive specially designed high-pressure nozzles to propel the hose through the drain, thus clearing and purging any blockages or impediments.

The idea is to keep the drains flowing, not allowing any kind of banking up of anything from tree roots to potential problems from 90-degree elbows.

The beauty of the high-pressure drain cleaning jetter from Aussie is that there are no impediments, as the drain-cleaning nozzle blasts the pipes clean, flushing the pipe out as it progresses up the line.

We built the first jetters 25 years ago based on inspiration from a plumber.

We owe that inspiration to him because at that time we weren't thinking of making high-pressure water blaster machines into a plumber's tool.

We weren't then sufficiently conscious of the drain unblocking process.

And, as the old saying goes, the rest is history.

Aussie's authorised distributors are all over Australia and, apart from making the world's best lightweight portable fire pump the Aussie Fire Chief, we are also known for our drain-cleaning jetters and high-pressure water blasters.

Our company, with less than 60 people, is on the global stage, shipping Aussie designed and built products all over the world.

For further information on the Aussie jetters story, contact Aussie's 'high pressure' division on 02 8865 3500.

Aussie Pumps



Aussie jetters keep sheds clean.



Spreading urea in July in the Oaklands district of southern NSW. Australia imports all of its urea. Photo: Narrain Grain

Protein index highlights our fertiliser and fuel exposure

A SUMMARY of the world's protein sovereignty has been released and shows only one country or bloc, Canada, as sovereign.

Behind Argentina and the US – and ahead of Russia, Brazil, New Zealand, Uruguay, the European Union, Norway and Ukraine in the resilient grouping – Australia sits at number four in the rankings.

Canada has a score of 82.8 and Australia 75.7, while the lowest scores belong to the critically exposed blocs of East Africa and Horn excluding Ethiopia on 39.2, the Gulf Cooperation council on 36.5 and the non-GCC Middle East bloc on 30.5

The index says Australia's reliance on imported fertiliser, fuel and crop-protection chemicals challenges the sovereignty of its cropping and therefore livestock-production systems.

The Protein Sovereignty Index measures how well each country's protein supply holds up under pressure, and traces that supply from the fertiliser and feed behind it to the prices people pay, as well as estimating how long stocks would last if trade stopped.

It has been published by Singapore-based company Full Circle Biotechnology, which primarily manufactures aquaculture feed in Thailand made from insect protein and agricultural by-products.

The index's methodology and a selection of assessments were reviewed prior to publication by an expert panel of 10.

The panel included former USDA chief economist Joseph Glauber, StoneX vice president of fertiliser Josh Linville, investor and former negotiator at the Office of the US Trade Representative Mikhail Zeldovich and Aberdeen Investments chief executive officer Asia Pacific Ian Macdonald.

"Even the US, one of the few countries that can feed itself on protein, depends on a handful of beef processors and a single phosphorus producer," Mr Zeldovich said.

"Most other countries are more exposed still, relying on feed and fertiliser from abroad.

"Supply chain security has focused on chips and minerals – food and feed deserve the same attention."

Mr Macdonald said some of the world's wealthiest markets are among the most exposed.

"Japan, South Korea and Taiwan raise much of their own meat and eggs on feed that arrives by sea," Mr Macdonald said.

"Thailand exports chicken and seafood, and Vietnam exports seafood, but both rely on imported feed to do it."

Following is a summary of sections of the report pertaining to Australia, Canada and the Middle East from the full report, which is available online.

Scan the QR code below.

Fuel, fertiliser erode Australian sovereignty

Over the three years to 2024-25, farms exported 71 percent of their production by volume and produced more than three times the beef and sheepmeat available for domestic use, while poultry production slightly exceeded local demand.

Seafood and pork are the main exceptions – imports meet 73 percent and 38 percent of domestic supply respectively.

The high reliance on seafood imports comes despite Tasmanian farmed fish production, which in 2020-21 saw more than 83,000 tonne of salmon and trout harvested.

The US supplied 41 percent of Australia's fresh and chilled boneless pork imports in 2023, and 51 percent in 2024, when Australia produced about 2.6Mt of beef and veal and exported 1.3Mt, making it the second-largest beef exporter after Brazil.

Sheepmeat exports reached a record 614,389 tonne the same year, and Australia remains the world's largest sheepmeat exporter.

Milk output was 8.47Mt in 2023, with 22 percent exported.

Chicken is the most eaten meat, at about 50kg a head, and Australia produces about 1.5Mt of poultry a year.

More cattle are now fed grain rather than being grassfed, pig and poultry farms use imported soymeal, and salmon farms rely on feed made from wild fish.

The more serious dependence is behind the farm gate.

In 2023, net imports covered 83 percent of nitrogen fertiliser use, 47 percent of phosphate and all potash use.

If the Phosphate Hill mine in northwest Queensland closed, phosphate imports would rise from 47 percent of use towards 100 percent.

Australia makes no urea and closed its only manufacturing plant in January 2023 because it could not secure affordable gas.

In 2023 Australia imported 3.2Mt of urea and 3.85Mt in 2024, with 68 percent supplied by Gulf states, and plants inside the Strait of Hormuz accounting for around 55 percent.

During this year's Strait of Hormuz closure, farm urea prices rose from about A$835/tonne to $1435/tonne by May 7, then fell after the June ceasefire.

On fuel, Australia refines only about one fifth of what it consumes and fuel stocks have been thin throughout the Strait of Hormuz closure period.

Diesel cover averaged 32 days in the March quarter of 2026 and stood at 39 days on July 28, with petrol at 43 days and jet fuel at 34.

Australia has not met the International Energy Agency's 90-day stockholding rule since 2012, though it committed to comply by 2026.

Required diesel stocks are 20 days for refiners and 32 for importers, with a temporary 20 percent cut extended to September 30, 2026.

The 2026 shock lasted about four months, from late February to a June ceasefire that reopened the strait.

Fuel supply held up – stocks stayed above pre-conflict levels and only 65 of 8118 fuel stations were out of diesel on July 31, even though diesel traded 80 percent above its pre-conflict price in late July.

Required diesel stocks were lowered during 2026, not raised.

Farm output remains substantial – a prolonged input shortage would make the next harvest more costly and less certain.

Most households can afford food and only 3.2 percent of Australians could not afford a healthy diet in 2024.

☛ continued P13

Protein index highlights our fertiliser and fuel exposure

☛ from P12

That national figure sits alongside much greater hardship in remote communities – in 2022-23, 41 percent of Aboriginal and Torres Strait Islander households reported food insecurity for lack of money, rising to 50.7 percent in remote areas.

The climate is making that land less reliable – changes in the seasons between 2001 and 2023 cut average broadacre farm profits by an estimated 18 percent.

The main risks to Australian resilience in protein production are climate and dependence on imported inputs, and 2026 showed both recur.

Farm output remains high, but 2026 showed how imported inputs and thin reserves can hold it back when shipping routes close.

The 18 percent fall in broadacre farm profits is a trend, and each drought now starts from a warmer baseline.

The next steps for Australia are completion of Project Ceres, to build stocks of diesel, AdBlue and crop chemicals sized to what Australia imports and make more crop chemicals onshore.

Canada's potash adds strength

Canada's large food-producing base and world-leading potash industry make it the only country in the index-rated sovereign.

That strength extends across crops, meat and farm inputs.

Its weak points are specific rather than a lack of food.

Canada imported all its phosphate fertiliser nutrient in 2024, and the US supplied 55 percent of consumer-oriented food imports.

About half of field-crop exports pass through Vancouver, where a four-day strike stopped shipments in 2024.

Those links can raise costs and interrupt trade even as farms continue to produce a surplus.

Canada is one of the world's biggest wheat exporters and is its biggest canola producer and exporter.

Canada is self-sufficient or a substantial net exporter in every major protein class, from cereals and oilseed meals to pulses, pork, beef, seafood, dairy, poultry and eggs.

Agricultural credit is a strength – it accounted for 8.7 percent of bank lending in 2024, about five times farming's share of the economy.

Climate remains a production risk, the 2021 Prairie drought cut wheat output 36.7 percent and canola 26.9 percent from 2020.

Beef deficit, US relations pose risk to Canada

Canada's main animal-protein import exposure is beef, about 14 percent of domestic supply in 2023.

Food imports are more concentrated – the US supplied 55 percent of consumer-oriented agri-food imports in 2024.

The supplier relationship now carries trade-policy risk.

US proclamations in July 2026 set 50 percent tariffs on a broad range of Canadian goods, including many dairy products, effective August 19, 2026.

Tariffs apply to Canadian exports but the dispute raises the risk of retaliation and border friction on Canada's largest food-import route.

Canada makes slightly more nitrogen than its farms use and grows domestic feed crops.

It is the world's largest potash producer, mining 15Mt of K2O in 2025 of a world total of 49Mt, and its potash reserves are 1.1 billion tonnes, second to Russia's 2Bt.

Canada also produced 3.57Mt of nitrogen nutrient in 2024 against agricultural use of 3.21Mt.

While it exports energy and grows its own feed, Canada produced no phosphate nutrient in 2024, imported 1.12Mt and applied 1.16Mt.

Its monoammonium phosphate imports alone were 1.78Mt of product, 70.8 percent from the US and 27.9 percent from Morocco.

Nitrogen is less secure than the national output figure suggests – Canada imported 1.2Mt of nitrogen nutrient in 2024 against 640,000t exported, a western industry exporting south and an eastern market drawing on imports.

The 2026 Strait of Hormuz disruption showed a third exposure – price contagion.

With about 35 percent of global urea exports normally transiting the strait, prices climbed above A$1262.18/tonne in April 2026, up 80 percent since February and the highest since April 2022.

Middle East most vulnerable

The Gulf Cooperation Council nations of Saudia Arabia, Bahrain, Kuwait, Oman, Qatar and the United Arab Emirates have a combined PSI score of 36.5, ahead of only the non-GCC Middle East countries on 30.5.

These comprise Iran, Iraq, Israel, Jordan, Lebanon, Palestine, Syria and Lebanon, and reflect the impact of water stress, conflict and unaffordable food.

Food security varies sharply across this region – Iran harvested 19.5Mt of cereals in 2025, Iraq and Jordan hold substantial grain reserves and Israel produces nearly all the poultry it consumes.

These strengths do little for people living amid war or economic collapse elsewhere in the region.

Yemen imports roughly 85 percent of its food, and in Syria, the share unable to afford a healthy diet rose from 41 percent in 2019 to 73.5 percent in 2024.

Even the stronger producers depend on outside supply.

Iran is forecast to import 11Mt of corn in 2026-27, much of it for livestock, while its feed stocks cover only 14-21 days, agriculture also uses about 92 percent of Iran's water withdrawals.

The region can buy or grow large amounts of food but access depends heavily on where people live, what they can earn and whether trade routes remain open.

In the GCC nations, import exposure is a defining weakness, as tested by this year's closure of the Strait of Hormuz.

The GCC nations overall import about 85-90 percent of their food and more than 70 percent of those normally pass through the Strait of Hormuz.

The Middle East Institute puts 81 percent of rice through the strait.

☛ continued P15



Canada is the world's largest exporter of potash, and the locally mined product covers its national agricultural demand. Photo: Canpotex

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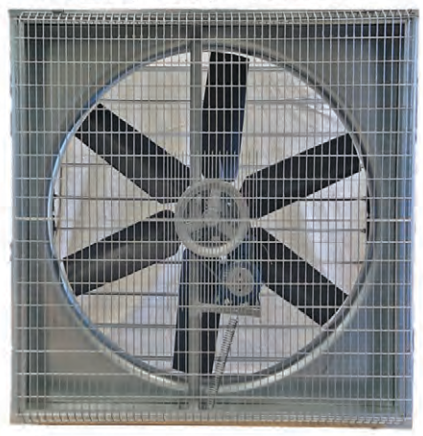
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Protein index highlights Australia's fertiliser and fuel exposure

☛ from P13

Grain is split across two exposed routes – about 39 percent of wheat and other grains from western suppliers comes through Bab el-Mandeb, and 35 percent through Hormuz.

The suppliers are few as well – across the five members that report rice imports, India supplied 76.1 percent in 2024 and Pakistan 13.7 percent by weight.

Tanker traffic through Hormuz was down by more than 90 percent when the United Nation's Food and Agriculture Organisation chief economist assessed the crisis on March 26, 2026, and the closure was still disrupting Gulf shipping in July.

Grain shipments were disrupted at once and Saudi Arabia moved its purchases to King Abdullah Port and Jeddah on the Red Sea.

The Gulf has found partial ways around the strait.

Saudi Arabia's Red Sea ports, Oman's Salalah and Duqm and the UAE's east coast have all worked in a real crisis.

Weekly container traffic at Khor Fakkan rose from about 8000 to 65,000 TEUs after ships were diverted.

Gulftainer is spending A$2.97B to raise yearly capacity from 3.5M to 10M TEUs, and Fujairah has silos for 300,000 tonnes of grain.

None of this helps Qatar, Kuwait or Bahrain, which have no coast outside the Gulf.

Feed matters most for a protein system built on poultry, dairy and fish farms, and the Gulf imports nearly all of it.

Breeding stock is imported too – Baladna's dairy herd in Qatar began with about 4000 Holstein cows flown in from the US and Europe following a blockade imposed by some of its neighbours in 2017.

Another 3200 cows arrived by sea in 2018, with 3000 more planned for that November – the same model runs across the Gulf.

For other inputs, the Gulf sells to the world rather than buying.

Qatar's QAFCO can make 5.6Mt of urea and 3.Mt of ammonia a year and calls itself the world's largest single-site urea exporter, with 14 percent of world supply.

The Gulf petrochemicals association gives a more cautious figure, about 7 percent of world nitrogen and phosphate output, with Saudi Arabia fifth in nitrogen and sixth in phosphate.

Saudi Arabia's Ma'aden's Phosphate 3 complex will add 3Mt, taking phosphate fertiliser capacity to about 9Mt a year, with the second phase due in 2027.

The energy for fertiliser, desalination and cold stores is produced at home.

Gulf-owned trading companies add a further buffer.

Saudi Arabia's SALIC owns 81.8 percent of Olam Agri, which gives the Gulf its own global business for buying, processing and trading grain.

Al Dahra does the same for animal fodder, Abu Dhabi's ADQ has held a large stake since 2021.

These companies give Gulf buyers more control over where food comes from and how it travels than buying on the open market.

Gulf sovereign wealth funds hold about A$5.94-7.42 trillion, so governments can outbid almost anyone when food is short, food reserves are deep too.

The Gulf will keep importing most of its food because it lacks the land and water to grow it.

Turning imported feed into meat, eggs and milk with desalinated water keeps its food production dependent on foreign supply.

Its real protection is money, reserves and the ability to reroute cargo quickly, all at high cost.

Grain Central

Scan for the full report.

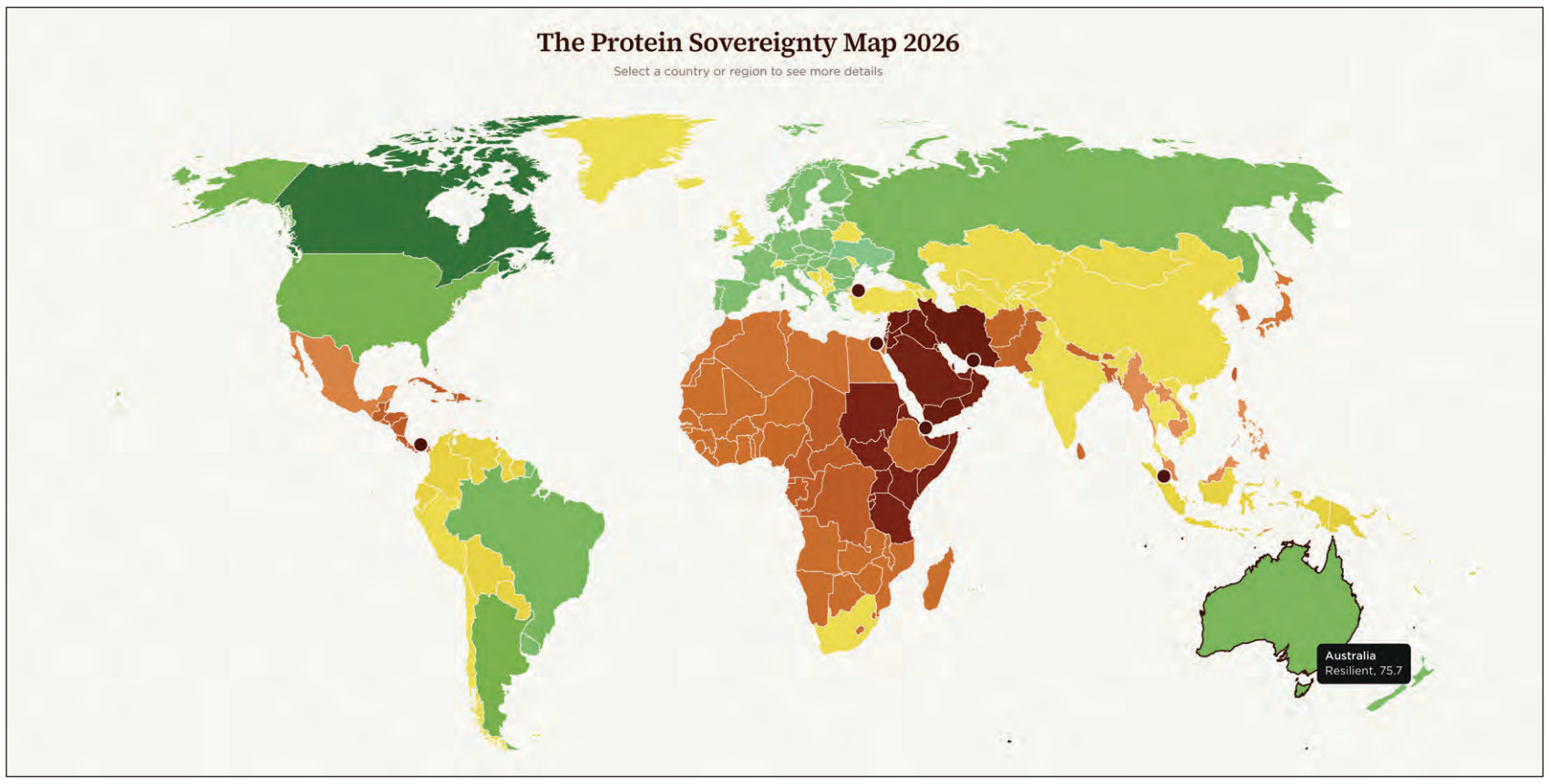


Figure 1: The 2026 Protein Sovereignty Index. Source: Full Circle Biotechnology

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