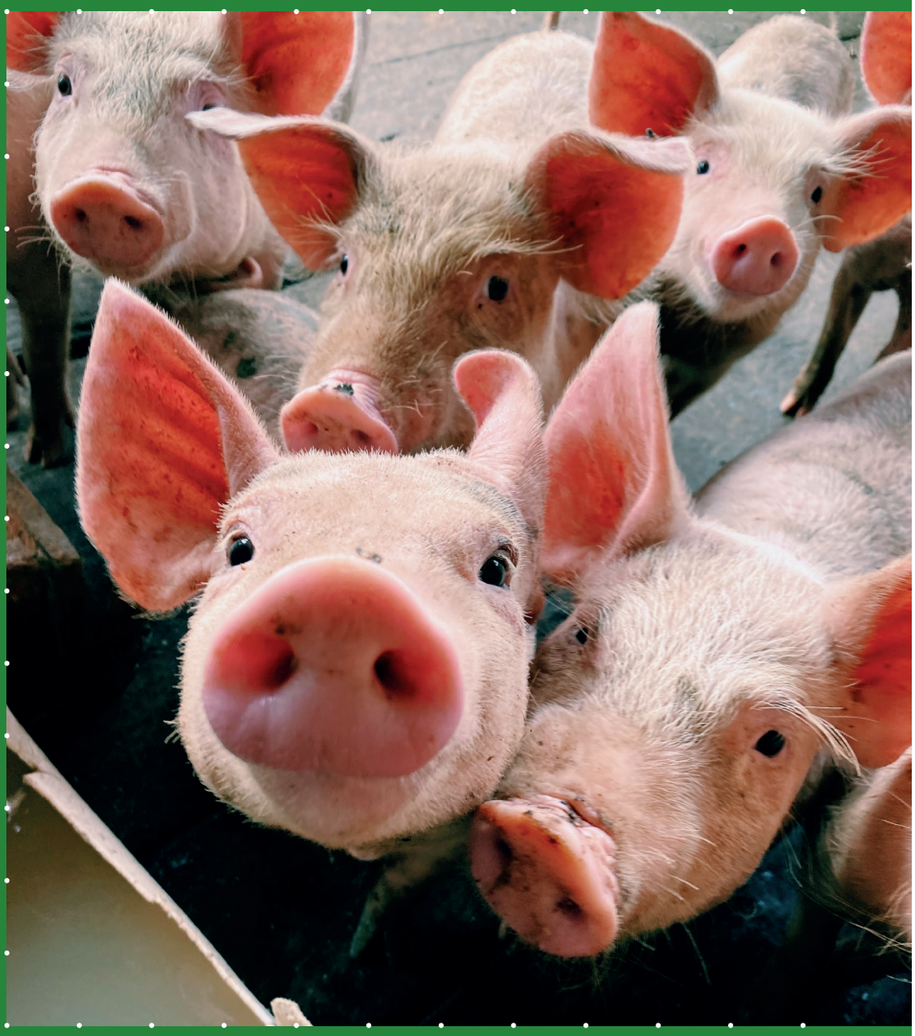
APRIL ANNUAL REPORT 2026



Australasian
Pork Research
Institute Ltd
APRIL

CONTENTS

04 WELCOME TO APRIL

06 MESSAGE FROM THE CHAIR

07 MESSAGE FROM THE CHIEF SCIENTIST

18 COMMERCIALISATION REPORT

26 COMMUNICATION REPORT

44 RESEARCH REPORT: INNOVATION PROJECTS

60 RESEARCH REPORT: INDUSTRY PRIORITY PROJECTS

70 EDUCATION AND TRAINING REPORT

09
MESSAGE FROM THE EXECUTIVE OFFICER

12
STRATEGIC PLAN SUMMARY

32
PROGRESS AGAINST PILLAR 3

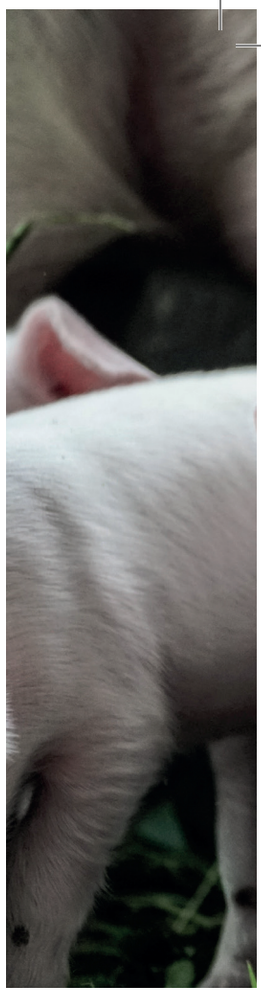
36
RESEARCH REPORT: TRANSFORMATIONAL PROJECTS

76
CORPORATE GOVERNANCE

84
FINANCIAL STATEMENTS

DISCLAIMER APRIL makes no warranty or representation regarding the currency, accuracy, quality, completeness or fitness for purpose of any part of the information in this report. The information is for preliminary and general information only and is not to be relied upon without obtaining independent expert advice. APRIL is not liable for any loss or damages arising from the use of this information. The information contained in, or referred to in this report, does not constitute or shall not be deemed to constitute professional advice, and must not be relied upon in connection with any investment decision. We strongly advise you to seek professional independent advice before relying on any advice contained in this report. This report is copyright to APRIL. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process, without prior written permission.

WELCOME TO APRIL



THE AUSTRALASIAN PORK RESEARCH INSTITUTE LIMITED (APRIL) IS A NOT-FOR-PROFIT (TAX EXEMPT) COMPANY LIMITED BY GUARANTEE THAT OPERATED THE CRC FOR AN INTERNATIONALLY COMPETITIVE PORK INDUSTRY FROM JULY 2005 TO JUNE 2011. THIS WAS THEN SUCCEEDED BY THE CRC FOR HIGH INTEGRITY AUSTRALIAN PORK (PORK CRC LTD) THAT CEASED ITS ACTIVITIES ON 30 JUNE 2019.

BACKGROUND

APRIL was succeeded by the CRC for High Integrity Australian Pork (Pork CRC Ltd.), which completed its objectives on 30th June 2019.

The CRC for an Internationally Competitive Pork Industry and the CRC for High Integrity Australian Pork have delivered on research, education, training and commercialisation objectives to deliver a wide range of relevant research outcomes for the Australasian pork industry.

In total, these CRC programs represented a combined total investment of more than $210 million into the pork industry. Their establishment reinvigorated pork industry research and development and education and training in Australasia and demonstrated the value of collaborative research investment to pork producers and allied businesses associated with the value chain.

In addition to research outcomes directly applicable on farm and post-farm gate, the CRCs have delivered numerous commercial outcomes that will generate financial returns to APRIL into the future.

In 2014, the Pork CRC Ltd. Board began discussions on a transition model after 30 June 2019. Industry acknowledged a need beyond the Pork CRC for continued investment in collaborative activities in research and development, education and training, and commercialisation, to continue the legacy of the two Pork CRC programs and complement Australian Pork Limited's work.

Australian Pork Limited (APL), representing Australian pork producers, along with the New Zealand Pork Industry Board, allied pork industry businesses, and tertiary and research organisations, determined that APRIL was an appropriate vehicle to continue these activities. As such, APRIL adds additional expertise and benefits to the Australasian pork industry through its diverse and broader base of membership that includes all sectors participating in the pork value chain.

Since 2019, associated with the Board's approval of APRIL's first Strategic Plan 2019–2022, APRIL has developed a solid collaborative investment portfolio that has been driven by end-users for the benefit of the Australasian pork industry. Resources associated with research and development, education and training, and commercialisation activities have been invested to ensure value chain sustainability and delivery. In turn, APRIL has successfully leveraged more money into the pork industry for these activities.

The second APRIL strategic plan covered the period up to June 2025.

Each year, a group of producers, researchers, and industry stakeholders form the Pork Industry Insight Panel (PIIP) to discuss and identify current and future challenges and opportunities facing the Australian pork industry. The PIIP discussions enable the industry's Chief Scientist to develop a Green Paper and identify R&D priorities to ensure that Australian pork research and development remains relevant and coordinated across both APL and APRIL.

The third APRIL strategic plan covering 2026–2029 has been informed by this new Green Paper process.

VISION

A thought leader in the Australasian pork industry, driving innovative research, education, and commercialisation for long-term sustainability.

MISSION

APRIL will be a vehicle for change and innovation in the Australasian pork industry by:

- Working collaboratively with its participants to propose, address and solve key issues of concern and relevance for the Australasian pork industry.
- Successfully delivering innovative solutions and outcomes for the Australasian pork industry.
- Contributing to successful education and training programs that sustain the Australasian pork industry and engage future generations.
- Creating and fostering commercialisation opportunities that enhance end-user benefits.
- Enriching its membership and investment portfolio to ensure future security in delivering its objectives.
- Supporting Australian Pork Limited in building an industry shared vision to enable a thriving pork industry.

THE PORK INDUSTRY HAS ACKNOWLEDGED THE NEED FOR CONTINUED INVESTMENT IN COLLABORATIVE RESEARCH AND DEVELOPMENT SO APRIL WILL INVEST IN AND MANAGE:

- **COLLABORATIVE RESEARCH AND DEVELOPMENT**
- **EDUCATION AND TRAINING**
- **EXPLORE COMMERCIALISATION OPPORTUNITIES**

FOR THE BENEFIT OF THE AUSTRALASIAN PORK INDUSTRY

MESSAGE FROM THE CHAIR

THE 2025–26 YEAR HAS BEEN ONE OF CONSOLIDATION FOR THE AUSTRALASIAN PORK RESEARCH INSTITUTE LTD (APRIL). FOLLOWING THE MAJOR STRUCTURAL CHANGES OF RECENT YEARS, OUR FOCUS HAS BEEN ON EMBEDDING THE PARTICIPANT MODEL, STRENGTHENING OUR PARTNERSHIP WITH AUSTRALIAN PORK LIMITED (APL), AND ENSURING THAT APRIL REMAINS A RESPONSIVE AND ACCOUNTABLE RESEARCH ORGANISATION SERVING THE AUSTRALIAN PORK INDUSTRY.

Research expenditure was lower during the year, reflecting the timing of new investment and a deliberate emphasis on consolidating the benefits of earlier work. Alongside developing the next generation of research, we have continued to follow up completed and continuing projects to strengthen adoption, demonstrate impact and ensure that useful findings are translated into industry practice. This is an important discipline for a small, industry-led organisation: impact is achieved not simply by funding research, but by seeing valuable outcomes carried through to producers and the wider supply chain.

Encouragingly, APRIL's membership and participation base increased during the year. This broader engagement is a positive endorsement of the new model and expands the expertise, networks and co-investment available to the organisation. Our voluntary funding base remains a distinctive strength. It keeps APRIL closely connected and directly accountable to the organisations that choose to invest in collaborative pork research, education and training.

The partnership between APRIL and APL continued to mature. Joint priority-setting and research calls are helping to create a more cohesive industry R&D system, while the Pork Industry Insight Panel and its Green Paper process provide an industry-informed basis for identifying future needs. The priorities remain clear: supporting growth and profitability while strengthening biosecurity and disease preparedness, welfare, sustainability and the industry's social licence.

Dr John Pluske continued to provide leadership as Chief Scientist for the Australian pork industry and as a Director of both APRIL and APL, helping connect industry priorities, research investment and governance across the two organisations. Dr Charlie Rikard-Bell has again provided highly effective management as Executive Officer, and Sally Vardy has brought sound financial and governance discipline as Company Secretary and CFO. I thank them, my fellow Directors and the research community for their commitment throughout the year. Dr Rob van Barneveld will complete his term as a director at the 2026 AGM, and I want to pay tribute publicly for his extraordinary contribution to APRIL and the Australian pork industry (which will no doubt continue). Rob actually founded APRIL as the management company for the pork industry CRCs many years ago and his vision, enthusiasm and expertise has been unwavering ever since. I sincerely thank him.

Science and innovation remain fundamental to the competitiveness and resilience of Australian pork production. In the coming year, APRIL will build on its stronger participation base, progress well-targeted new research and continue the practical work of converting past investment into measurable industry benefit.

On behalf of the Board, I thank our members, participants, research partners, scientists and students for their continued support. APRIL's value comes from this shared commitment to collaborative, industry-driven research and to ensuring that every research dollar contributes as effectively as possible to the future of Australian pork.

Dr Tony Peacock
Chair, APRIL

MESSAGE FROM THE CHIEF SCIENTIST

THE POSITION OF CHIEF SCIENTIST FOR THE AUSTRALIAN PORK INDUSTRY CONTINUES TO ADHERE TO THE TRIPARTITE AGREEMENT, SIGNED IN MID-AUGUST 2024, BETWEEN AUSTRALIAN PORK LIMITED (APL), THE AUSTRALASIAN PORK RESEARCH INSTITUTE LTD. (APRIL) AND SCIECONS CONSULTING. FURTHER, MY POSITIONS ON THE BOARDS OF BOTH APRIL AND APL, AND THE ASSOCIATED COMMITTEES, ARE UNCHANGED FROM THE PREVIOUS YEAR. AS SUCH, INTERACTION AND COMMUNICATION BETWEEN THE CHIEF SCIENTIST AND MANAGEMENT OF APRIL AND APL, AND VICE VERSA, HAS MAINTAINED OPERATIONAL INDEPENDENCE, WHILST ENABLING HIGH LEVEL PARTICIPATION AND CONTRIBUTION TO THE BROADER R&D AND EDUCATION AND TRAINING SCENES AND DIRECTIONS ACROSS BOTH ORGANISATIONS.

The coordination, conduct and delivery of the annual Green Paper, and preparation of the subsequent research priorities, for the Australian pork industry is a principal function of the Chief Scientist. By working with the Pork Industry Insight Panel (PIIP), the resulting independent, non-binding paper focuses on the current state of the industry and at that moment in time provides a snapshot of the Australian pork industry. The research priorities derived from this paper are provided to research providers to assist them with achieving their research strategy.

Following face-to-face workshops for the 2023 and 2024 Green Papers, a 'lite touch' workshop was held online with the PIIP on 18 September 2025. Over 95% of the 2024 PIIP attendees were present at the 2025 workshop. The focus of this workshop was to identify key changes that should be made to the 2024 Green Paper and aspects that were missing in previous Green Papers. Thank you to all those involved, and especially Margo Andrae (APL) and Dr Charles Rikard-Bell (APRIL) for their support.

Stemming from this process, the major R&D outcomes and findings from the 2025 Green Paper were presented to the joint Boards' meeting held in Canberra in February 2026. Subsequently the following research priorities were written:

- Environment and Emissions: Delivering practical & meaningful outcomes that improve overall industry sustainability including emissions reduction & odour, & progressing nutrient & water management from effluent; Changing the paradigm in environmental/ effluent research from a cost of production/compliance issue to an opportunity for industry growth & improved productivity.
- Feeding and Nutrition: Nutritional strategies & interventions that reduce herd feed conversion efficiency & contain feeds costs in the face of increasing competition for traditional raw materials.
- Human Capacity and Society: building & retaining a resilient, diverse & skilled rural & regional workforce.
- Data and Information: exploiting the benefits of artificial intelligence for more efficient & profitable pig production, processing, & data & information analyses.
- Pig Genetics: enhancing the rate of genetic improvement in the Australian pork industry while maintaining current or better health status.
- Pig Care and Wellbeing: providing novel tools or approaches to support continuous improvement & assessment of pig care & wellbeing & demonstrate the positive welfare credentials of Australian pork.

- Pig Health and Antimicrobial Stewardship: delivering novel technologies & approaches to mitigate risks & production impacts of infectious diseases, enhance EAD preparedness, & further reduce antibiotic use.
- Pig Processing and Meat Quality: Ensuring a sustainable processing sector & increasing the share of domestic fresh meat consumption & export market value.
- Retail: increasing share of meat consumption.

Together with Dr Rikard-Bell and Dr Rebecca Morrison (General Manager, Research, Innovation and Extension, APL) we activated the R&D priorities through a joint call for Expressions of Interest for Industry Priority Projects between APRIL and APL in September 2025, and a call for Transformation Projects (APRIL) in July 2025. Furthermore, APRIL made a call for Innovation Projects in March 2026. Providing such relevant assistance and advice as Chief Scientist, in this instance and more extensively to other members of the Australian pork industry, is important.

Throughout the reporting period, I have explained the "Green Paper process" at seminars held at industry pork days throughout the country. The positive feedback that we have received will contribute to developing this activity as we go forward.

The Australian Pork Industry Education and Training Committee, including the APRIL Executive Officer, the APL General Manager (Research, Innovation and Extension), and the Chief Scientist as *ex officio* members, has functioned well with the first joint APL/APRIL call for new applicants released late in 2025 for both undergraduate and postgraduate awards, and also the APRIL Industry Placement Program and Post-Doctoral Fellowship Scheme awards.

In May 2026, I had the honour of welcoming students supported by the Australian Pork Industry to the student activities associated with the Food with Purpose conference on the Gold Coast. It was also good to remember some basic nutrition in presenting at the *Young Pig Handlers and Youth Education Day – Corrigin* (WA) in June 2026. It has been a pleasure to work with all students in the pig industry.

… A SNAPSHOT OF CHANGES OVER TIME IN RESEARCH INFRASTRUCTURE AND PERSONNEL PERTINENT TO THE AUSTRALIAN PORK INDUSTRY WAS COMPLETED AND WILL BE PRESENTED TO INDUSTRY

Together with Dr Charles Rikard-Bell, I attended the Pathways & Partnerships: Agriculture, Animal & Veterinary Bioscience Industry Night on 23 September 2025, at The University of Sydney. It was an excellent opportunity to share our knowledge with the students and answer their questions about careers in the pork industry and further study opportunities.

As Chief Scientist, I chair the Post-Project Management Committee (PPMC) for the CRC-P, *Eliminating pig tail removal to improve welfare and industry sustainability* (the Tails CRC-P), which has overseen the transfer of funds to APRIL to be administered on relevant projects and training. I look forward to seeing continued work in this area.

The Chief Scientist is also expected to consider national and international areas of interest to the Australian pork industry. As part of this work a snapshot of changes over time in research infrastructure and personnel pertinent to the Australian pork industry was completed and will be presented to industry. Having attended the 2025 International Conference on Pig Livability in the USA, relevant feedback was delivered to producers through the Pork and Talk forums held in March and April this year.

I have been honoured to represent the Australian pork industry at various meetings including APSA 2025 where together with the APSA President, Dr Kate Plush, I gave the Welcome address.

I continue to communicate with industry about various topics related to pork production both internationally and nationally, including through '5 Things You Might Have Missed', and the APRIL and APL newsletters. An overview of my activities is available in "The Chief Scientist for the Australian Pork Industry: An overview of activities: August 2024 to June 2025".

For their guidance and ongoing support during this period, I am grateful to Dr Tony Peacock (APRIL Chair) and Mr Andrew Baxter (APL Chair). I would also like to thank Dr Charles Rikard-Bell and Dr Rebecca Morrison for discussions and interactions, along with many others in the Australian pork industry who have given support, feedback and encouragement during the reporting period.

Dr John Pluske
Chief Scientist for the Australian Pork Industry

MESSAGE FROM THE EXECUTIVE OFFICER

IN THE 2025–26 REPORTING PERIOD APRIL HAS HAD ANOTHER VERY PRODUCTIVE YEAR IN RESEARCH AND DEVELOPMENT, EDUCATION AND TRAINING AND EXTENSION AND COMMERCIALISATION ACTIVITIES FOCUSSING ON OUR PRIORITIES AND DELIVERABLES TO ENSURE THE SUSTAINABILITY OF AUSTRALIAN PORK PRODUCTION.

This is the second year of APRIL operating under the participant model and execution of research priorities under the guidance of the Green Paper. The organisation includes seven gold, three bronze participants and six organisations with ordinary membership.

During this reporting period the Craig Mostyn group agreed to join APRIL as a gold member, and we look forward to welcoming them into the organisation in July 2026 and their future involvement in APRIL activities. The recently established Corporate Partner level also welcomes MSD who joined APRIL this year.

APRIL operates on a 3-year strategic planning cycle. This annual report presents the 2026–2029 Strategic Plan that will guide APRIL's philosophies and investments over the period. The Strategic Plan sought feedback and comment during the consultation processes, and is constructed around five strategic Pillars that have been developed in consultation with APRIL Participants and Members, as follows:

- **Pillar 1:** Further developing the APRIL business.
- **Pillar 2:** Industry relevant commercialisation activities for the Australasian pork industry.
- **Pillar 3:** Effective management and delivery of transformational, innovative and commercially relevant research and development for the Australasian pork industry.
- **Pillar 4:** Effective management and delivery of education and training for the Australasian pork industry.
- **Pillar 5:** Connecting with participants and the Australasian pork industry.

The Strategic Plan (see pages 12–17) outlines each theme's supporting programs, key result areas and the enablers required to deliver the Strategic Plan over the course of the next three years.

The APRIL Research and Development Advisory Committee (RDAC) had a busy year meeting five times in this reporting period. Eligibility for a seat on the RDAC requires the organisation to be either a gold participant and/or an ordinary member of APRIL. There are currently 10 members of the committee which is chaired by the Chief Scientist for the Australian Pork Industry, Dr John Pluske. The key R&D priorities identified in the 2024 Green Paper and endorsed by APRIL and APL boards in the first quarter of 2025 were applied to the Transformational and Industry Priority project calls. The APRIL board endorsed three key focus areas for the transformational call which opened in July and closed in October 2025:

- **Priority #2** Pig Care and Wellbeing.
- **Priority #3** Pig Health, Biosecurity and Antimicrobial Stewardship.
- **Priority #5** Pig Processing.

A total of three transformational projects were received by APRIL for the RDAC Committee to review. Two of the projects were recommended to proceed to a full project proposal covering R&D Priority #2 and #5 and because of the nature of these proposals, involving multiple organisations and dependence on different funding sources the applications are ongoing and expected to be finalised in early 2027. The RDAC requested the third project resubmit for consideration at a later meeting.

APRIL and APL held a joint call for expressions of interest (EOI) for Industry Priority Projects which opened September 1st with the EOI's to be lodged via the PigConnect. An additional two priority areas were included for the Industry Priority project call which closed at the end of September:

- **Priority #6** Feed and Nutrition
- **Priority #8** Data and Information

A total of 29 EOIs were received of which the RDAC recommended 10 EOIs to progress towards full research proposals to be lodged by early November and assessed in February 2026. The RDAC recommended five Industry Priority Projects to the APRIL Board which were subsequently approved:

1. *Beyond Current Porcine Circovirus Vaccine Protection: Decoding Viral Escape, Tracking Circulating Strains, and Developing Targeted Vaccine*. Murdoch University (Priority #3)
2. *Feasibility of Developing a Novel ELISA for Swine Dysentery and Colitis in Australian Pigs.* Murdoch University (Priority #3)
3. *Transforming the management of intestinal parasites and antiparasitic resistance in Australian pigs.* The University of Melbourne (Priority #3)
4. *Feeding technology for farrowing pens to improve piglet survival.* (Priority #2, #6)
5. *Optimise synthetic to total lysine ratio to reduce total heat production.* (Priority #6)

The call for Innovation Projects in March 2026 referred to the 2024 Green Paper in which the RDAC recommended and the Board approved eight innovation projects:

1. *Mechanisms of methane inhibition by low-cost additives in piggery effluent. University of Queensland.*
2. *Fine tune dietary iodine levels for weaner pigs. JBS Pork Australia.*
3. *Insight in the quality of life of pigs. University of Western Australia.*
4. *WeightWise: Camera-powered liveweight prediction for smarter sorting. JBS Pork Australia.*
5. *Decoding Porcine Rotavirus Co-infection Dynamics in Neonatal and Post-Weaning Diarrhea in Pigs. Murdoch University.*
6. *RightOn Silo: Getting the right feed to the right silo – RFID digital "handshake" system industry demonstration. JBS Pork Australia.*
7. *Proof of Concept: Semi Supervised AI for Behaviour Discovery around farrowing. Adelaide University / SARDI*
8. *Development of a tissue culture for screening A. pleuropneumoniae vaccine candidates. University of Queensland.*

APRIL is indebted to the efforts of all reviewers of project submissions throughout the year, a total of 39 projects were reviewed by over 300 reviewers of which 86 were external. This underlines the robust process and maintains the high quality of applications and subsequent research within APRIL. The round of innovation project proposals were reviewed for the first time through the PigConnect portal which received positive feedback from reviewers.

The Pork Industry Insight Panel (PIIP) chaired by the Chief Scientist met online in September 2025 to identify changes required for the 2025 Green Paper (See Chief Scientist report, page 7) which were subsequently endorsed by the APRIL and APL Boards at their joint meeting in May 2026.

A key pillar in the 2026–2029 Strategic Plan is investment in education and training and to assist with human capacity building in the Australian pork industry. Together with APL, APRIL established the Australian Pork Industry Education and Training Committee (APIETC), to reflect the overall education, training and research interests of both organisations. The APIETC provides strategic oversight, direction and approval for scholarships and awards that support tertiary and non-tertiary education and training opportunities across both organisations. The committee met for the first time in July 2025 and established the terms of reference and discussed the future value of awards. The committee is chaired by Professor Frank Dunshea (APRIL Board Member) and includes Professor Robert van Barneveld and Dr Jessica Craig (APRIL Board Members); Ms Rowena Davis and Dr Rebecca Athorn (APL); and ex-officio members of the committee are The Chief Scientist (Dr John Pluske), APL General Manager Research, Innovation and Extension (Dr Rebecca Morrison) and APRIL Executive Officer (Dr Charles Rikard-Bell).

A TOTAL OF 29 EOIs WERE RECEIVED OF WHICH THE RDAC RECOMMENDED 10 EOIs TO PROGRESS TOWARDS FULL RESEARCH PROPOSALS TO BE LODGED BY EARLY NOVEMBER AND ASSESSED IN FEBRUARY 2026

In the 2026–2029 strategic plan (see pages 12–17) APRIL has committed over $300,000 per annum to education and training which marks a significant increase in funds. The APIETC has recommended that the PhD stipend award be increased to $45,000 per annum for 3 years with up to $5,000 per annum operating costs and Post-Graduate Top-Up scholarships will be up to the equivalent (full) stipend amount of $45,000 per annum for a maximum of 3 years. Additionally, the Industry Placement Program and Post Doctoral Fellowship Scheme awards will be increased to $45,000 per annum. A list of the APRIL Awards is found in the Education and Training Report (page 73). These award values are more in keeping with the cost of living and are geared to attract high calibre post graduate students.

In September 2025 APL and APRIL combined a call for Education and Training Awards for commencement in the 2026 academic year with applications to go through the PigConnect portal. All candidates were evaluated by the APIETC. Under the participant model APRIL awards are only available to APRIL Participants with the rights and benefits applying according to an organisation's tier of participation. This year APIETC received 24 applications across all tertiary categories and APRIL supported a total of 10 awards. Three APRIL candidates received the Postdoctoral Fellowships award, Dr Ghazanfar Abbas (University of Melbourne), Dr Shewli Mukerji (Murdoch University) and Dr Maria Grassino (University of Queensland). Dr Katelyn Tomas (JBS Pork Australia) received the Industry Placement Program award. Three candidates received PhD Top-Up awards Mr Chandra Shaker Chouhan (Murdoch University), Ms Elahe Soltani (Adelaide University), Mr Thien Van (Adelaide University) and Mr Jianuo Xu (University of Melbourne) received a research support award. Finally, two Doctor of Veterinary Medicine Awards were granted to Adelaide University applicants, Ms. Cheuk Yin Tsang and Ms. Celestine Ong.

APRIL at present supports 17 undergraduate and postgraduates across Australian universities (page 72). Congratulations to APRIL-supported students from the University of Queensland Dr Elisabet Garcia-Puig whose Doctor of Philosophy thesis *Physiology of bitter taste receptors in porcine gastrointestinal tract* was conferred in October 2025; and Dr Astrid del Rocio Coba Cedeno whose Doctor of Philosophy thesis *Heat tolerance (HT) in lactating sows: dietary strategies, metabolic biomarkers and microbiome signature* was conferred in June 2026. Additionally, awardee of the Industry Placement Program (IPP), Dr Samantha Sterndale (WestPork) completed her placement in this reporting period.

The APRIL AGM and Stakeholders Day followed the Australasian Pig Science Association (APSA) Conference and provided members with an opportunity to hear more about APRIL funded projects, investments, and strategic direction. The event was held on the 20th of November at the RACV Club in Melbourne, with over 65 members in attendance. The APRIL AGM resolved several items this year, congratulations go to the re-elected Professor Robert van Barneveld and Professor Frank Dunshea as Directors of the Company. A vote of thanks for her commitment and dedication from the Chair and APRIL Board to Ms Su McCluskey, who decided to step down from the APRIL Board after two 3-year terms as Director and Chair of the Audit and Risk Committee. Finally, congratulations to Mr Matthew Norton who was elected as an Independent Director of APRIL at the AGM.

Following the AGM, the APRIL Chair, Dr Tony Peacock opened The Stakeholder Forum in which Dr Charles Rikard-Bell provided an update on the APRIL Activities and Developments over the past 12 months and emphasised the opportunities taken to work alongside APL in calls for Research and Development as well as Education and Training whilst maintaining a distinct difference between the two organisations. The Chief Scientist provided an outline of the workings of the Green Paper and how it will shape the road ahead in R&D as well as providing an interesting and informative description of the facilities within Australia that are providing the Research, Development and Education and how this impacts where research is carried out and the pipeline of personnel into the industry. A selection of APRIL Innovation projects highlighted at the Stakeholder forum included a presentation by Dr Katelyn Tomas (JBS Pork Australia) on the potential use of unique biomarkers found in the brain associated with affective states such as stress (Project 5A–113). Dr Kate Plush presented a project lead by the research team at SunPork Group, involving the positive effects of a coarser gestational diet on piglet development in utero (Project 5A–111) and Dr Jeremy Cottrell from the University of Melbourne provided an update on how placentophagy (feeding placenta back to sows) influences lactation output in the immediate postpartum period (Project 5A–119). An overview of the Transformational Project ARC Linkage – LP190101161 *How to Make Antimicrobials in Pig Feed Redundant, Naturally* was presented by the lead investigator Professor Eugeni Roura (The University of Queensland). Dr Sophie Ward chaired the Education and Training session and further outcomes from this project were also shared by three UQ PhD students, Paul Bogere, Xianyi Liu and Viet Hai Tran involved in the project through three-minute video updates which were innovative and well executed. Cintia Amaral (PhD student, Murdoch University) also provided a 3-minute video on her research of objective technologies to measure carcass composition. APRIL's IPP awardee Dr Samantha Sterndale (WestPork) provided excellent insights and learnings from this very popular program. Dr Valeria Torok (SARDI) shared the outcomes from the Industry Priority project 6A–105 *Treated bio-secure mixed food waste as a feed ingredient in pig diets*. The commercialisation update, by Dr Charles Rikard-Bell highlighted the ongoing success of AusScan Online, its developments over the past ten years nationally and globally and the importance of the enterprise to the APRIL organisation. The meeting closed with the presentation of the APRIL Enterprise Award and congratulations went to A H M Musleh Uddin from Adelaide University for his application *Shifting farrowing to working hours enhances neonatal supervision and viability*.

THIS REPORTING YEAR SAW A TOTAL OF SIX INNOVATION PROJECTS AND THREE INDUSTRY PRIORITY PROJECTS COME TO COMPLETION

This reporting year saw a total of six innovation projects and three industry priority projects come to completion. They are as follows:

- 5A–108: *What sensory attributes are most critical for consumer evaluation within an Australian Pork eating quality program.* (The University of Melbourne)
- 5A–117: *Use of an inhibin vaccine to increase litter size in pigs.* (SARDI)
- 5A–118: *Understanding the impact of climate on the boar and progeny through sperm non-coding RNA.* (The University of Melbourne)
- 5A–120: *Dietary lecithin and inulin improved growth performance and eating quality of pork.* (The University of Melbourne)
- 5A–122: *Can the provision of silage at weaning improve sow welfare and subsequent reproduction?* (SunPork Group)
- 5A–124: *Postnatal strategies to increase myofibre proliferation.* (JBS Pork Australia)
- 6A–101: *Heat tolerance in lactating sows: Dietary strategies, metabolic biomarkers and microbiome signature.* (The University of Queensland)
- 6A–102: *Hot and bothered! Long term impacts of late pregnancy heat stress on sows and progeny.* (SunPork Group)
- 6A–105: *Food waste to pig feed – safe and bio-secure.* (SARDI, Fight Food Waste CRC)

Summaries and the Final Reports of these research projects may be found on the APRIL website. Additionally, APRIL has extended outcomes from some of these projects at the APRIL-APL "Pork and Talk" roadshows held in Toowoomba, QLD (13th February); Perth, WA (13th March); Cootamundra, NSW (19th March); Tailem Bend, SA (27th March) and Bendigo, Victoria (17th April). Dr Sophie Ward and Ms Ashlee Adams APRIL and APL Extension Officers have done an excellent job in producing project summaries suitable for publication in the APRIL Newsletters (September and December 2025; March 2026) and the Australian Pork News (APN). The extension of APRIL research using various formats such as short videos, interviews with researchers, the APRIL newsletter, APN and face to face presentations to producer audiences has been extremely well executed by the APRIL and APL extension team.

I am very grateful to the APRIL staff in Dr Sophie Ward (Extension Officer) and more recently Ms Ashlee Adams (replacing Sophie while on maternity leave), Ms Sally Vardy the Company Secretary who's experience in governance is invaluable, and Mr Geoff Crook continues to support as a Contracts Officer. APRIL has also been very fortunate to have had access to the excellent services of Dr Jo Pluske with respects to project management. I would also like to thank Dr John Pluske for his help and guidance and for Chairing the RDAC during a very busy year with respects to research calls. To the staff at APL in particular Ms Kelly Goh, Dr Rebecca Morrison and Ms Margo Andrae for their assistance, advice and working with APRIL throughout 2025–26. Finally, thanks to the APRIL Chair, Dr Tony Peacock, and APRIL Directors for their support, and encouragement during this year, it has been much appreciated.

Dr Charles Rikard-Bell
Executive Officer, APRIL

STRATEGIC PL

KEY OBJECTIVES OF APRIL

TO ACHIEVE APRIL'S VISION AND MISSION, APRIL HAS DEFINED THE FOLLOWING KEY OBJECTIVES THAT FORM THE FOUNDATIONS OF APRIL'S STRATEGIC PLAN (2026–2029):

Be a thought leader, strategic enabler, and strategic co-funder of research and development, education and training, and commercialisation activities for the benefit of the Australasian pork industry.

Act as a catalyst for innovation in the Australasian pork industry through strategic investments in research and development, education and training, and commercialisation activities.

Manage income arising from commercialisation activities, and generate further commercialisation activities and income.

Re-invest commercial income in research activities, and education and training, relevant to the Australasian pork industries.

Expand the total pool of funding available for research and development, education and training, and commercialisation.

Assist and be aligned with Australian Pork Limited in growing the overall science, infrastructure, and human capacity base in the industry.

PLAN SUMMARY

CORE VALUES OF APRIL

TO ACHIEVE THESE KEY OBJECTIVES, APRIL WILL APPLY THE FOLLOWING CORE VALUES:

INNOVATION

APRIL always looks for industry solutions.

FOCUS

APRIL's participants and the Australasian pork industry are its highest priorities.

EXCELLENCE

APRIL strives for the best quality in research and development, education and training, and commercialisation activities and opportunities.

NETWORKS

APRIL will collaborate locally, nationally and internationally to enhance capacity to solve local challenges and meet goals.

OPPORTUNITY

APRIL will take considered risks to achieve desired outcomes.

COMMUNICATION

APRIL will build strong relationships through open communications.

DEDICATION

APRIL staff and the APRIL Board are driven to deliver the APRIL Strategic Plan on behalf of the Australasian pork industry.

APRIL'S STRATEGIC PILLARS

BASED ON APRIL'S KEY OBJECTIVES AND CORE VALUES, THE FOLLOWING CORE STRATEGIES HAVE BEEN DEVELOPED:

PILLAR 1: FURTHER DEVELOPING THE APRIL BUSINESS

ACTIVITIES	KEY DELIVERABLES	IMPLEMENTATION
1.1 Seek additional investment to deliver APRIL's activities	• Define and optimise the mechanism in which APRIL can capture unused statutory cap.	Ongoing
	• Leverage APRIL investment in research and commercialisation by stakeholder co-investment in applicable projects.	Ongoing
	• Increase Participant and Corporate Partner revenue of APRIL: – At least two new Ordinary Members / or Participants by February 2028 (over December 2025 Participant Model). – Additional revenue (up to $100,000 per annum) from non-membership activities, including from external strategic investment of cash reserves.	Ongoing
1.2 Nurture and grow collaborative alliances	• Review Participant model rights and benefits and to ensure APRIL can deliver appropriately and sustain support.	2027
	• Grow relationships/partnerships with relevant investors to advance progress in mutually beneficial activities.	Ongoing
1.3 Consultation with Chief Scientist	• Identify external opportunities for co-investment in APRIL activities and where feasible, and where appropriate, drive the bid process.	Ongoing
	• Monitor major external funding programs and strategically apply for funds as an applicant or as a co-applicant with e.g., a member or participants: – Development/submission of at least two major Transformational Projects application (> 5:1 project leverage on APRIL funds) to an external funding body, per annum.	Ongoing
	• Exploit APRIL's 'freedom to operate' and strong collaborative culture among members and participants to seek investment in its project portfolio from non-traditional funding sources.	Ongoing

PILLAR 2: INDUSTRY RELEVANT COMMERCIALISATION ACTIVITIES FOR THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY DELIVERABLES	IMPLEMENTATION
2.1 Be the single point of contact, referral and guidance for commercialisation activity in Australia	• Formalise an agreement and processes with Australian Pork Limited to become the single point of contact, referral and guidance for commercialisation activities in Australia. • APL commercial enterprises to be transferred over to APRIL management.	Ongoing Ongoing
2.2 Support a viable, innovative and expanding commercialisation business	• Effectively continue to manage current commercialisation arrangements to ensure they are sustainable and providing a return to APRIL: – Commercialisation income > $450,000 per annum, by 2029. – At least one new product/service successfully commercialised and generating revenue for APRIL, by 2027. • Initiate APRIL endorsed technology: – Become an independent body to verify a brand through high quality comparative research. – Create APRIL Smart brand with associated license opportunities through endorsements, to enhance investment and product adoption into the industry, and permit an acceptable financial return to APRIL. • Communicate a commercialisation report as a Standing item at each APRIL Board meeting.	Ongoing Ongoing Ongoing
2.3 Ensure commercialisation processes are efficient and are generating optimal returns	• Commercialisation project criteria to be re-vamped and be more attractive to non-participants (less restrictive). • Manage, utilise and maintain expertise through long term programmed commercial studies in key APRIL enterprises to improve and enhance: – AusScan Pig DE, Broiler AME and Reactive Lysine calibrations for global markets. – Sow Block enrichment studies for local, USA, and European markets. • AusScan succession planning: – Training / support services through a prospective commercial partner. – Management of data, Early Harvest reports and informatics. • Reinvest commercial income from investment in product development in applicable APRIL activities.	Ongoing Ongoing Ongoing
2.4 Support for Commercialisation Projects	• Implement annual Commercialisation project calls that increase APRIL's commercialisation pipeline and lead to greater commercial returns to APRIL and potential benefits to industry. • Three new projects launched by 2028. • Reinvest up to $100,000 per annum into new product development.	Ongoing Ongoing Ongoing
2.5 Continued engagement with growAG	• Continue engagement with growAG to promote commercialisation opportunities arising from R&D activities and ad hoc commercial opportunities.	Ongoing

PILLAR 3: EFFECTIVE MANAGEMENT AND DELIVERY OF TRANSFORMATIONAL, INNOVATIVE AND COMMERCIALLY RELEVANT RESEARCH AND DEVELOPMENT FOR THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY DELIVERABLES	IMPLEMENTATION
3.1 Review the APRIL R&D Activities as defined by the relevant Green Paper activities	• Review research investment to ensure an appropriate portfolio of Transformational, Innovation, and Commercialisation Projects, with > 60% of the available funds for R&D directed to Transformational Projects. • Reassessed targets for investment after each funding round and adjust targets accordingly, e.g., balance strategic research domains with research opportunities, enable continuation of completed projects having high potential for industry outcomes, assessment of APRIL commercial income versus direct industry benefits.	2026, and then annually Annually
3.2 Initiate key Transformational Projects for the Australasian pork industry	• Ensure at least two Transformational Projects, for longer-term, collaborative, inter- and multi-disciplinary 'big picture' projects, are prepared and submitted annually, with major external funding support sought where possible, in priorities to be determined.	Ongoing
3.3 Support for Innovation Projects	• Funding support annually (20–30% of applicable funds) for smart, innovative and 'out of the box' projects that stimulate change and innovation in the industry. • Project criteria requiring reassessment and to have a greater weighting on "innovation" and 'the idea" and to reduce emphasis on commercial partners and pathways.	Annually 2027

PILLAR 4: EFFECTIVE MANAGEMENT AND DELIVERY OF EDUCATION AND TRAINING FOR THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY DELIVERABLES	IMPLEMENTATION
4.1 Assist with human capacity building in the Australasian pork industry	• Make annual investments (>$300K per annum) into maintaining and building education and training for the industry, to support undergraduate and postgraduate students and the Industry Placement Program (IPP): – Offer at least two full scholarship Master or PhD awards per annum. – Two undergraduate students completed an Honours project by June 2027, with at least one Honours students completing a project per year thereafter. – Two DVM or BSc/BVMS students completed a project by June 2027, with at least two DVM or BSc/BVMS students completing a project per year thereafter. – Four postgraduate students working on APRIL or APRIL-related projects being trained by 2027, and each year thereafter. – A minimum of three IPP awardees embedded in industry organisations at any one time. – A minimum of three Post Doc awardees embedded in Participant Universities at any one time. • Support micro-credentials (certifications of specific training and skills) such as: – A minimum of two TAFE Certification in Pigs awardees by 2027. – A minimum of three Internships through APRIL Participants by 2027.	Ongoing Ongoing
4.2 Support for Kickstart program	• Ongoing support for the Kickstart program, to provide funding to assist with the preparation and submission of a specific, targeted and agreed major external funding application (or applications) in partnership with APRIL and other partners.	Ongoing
4.3 Support for APRIL Enterprise Award	• Ongoing support for annual APRIL Enterprise Award to support on-farm creativity and innovation for practical application.	Annually

PILLAR 5: CONNECTING WITH PARTICIPANTS AND THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY DELIVERABLES	IMPLEMENTATION
5.1 Implement an effective and appropriate communication plan	• Provide an appropriate communication framework that effectively disseminates APRIL activities, and engages Participants/Members to deliver associated outcomes.	Reviewed annually
5.2 Develop activities that are collaborative and inclusive across the member and stakeholder base	• All projects to involve at least one Participant organisation. • Maintain the Board Director-Ordinary Member buddy system to enable one-on-one communication with Ordinary Members (4–5 times annually). • Invite Members and key stakeholders to attend the APRIL Annual Stakeholder Day (and other events as appropriate) to extend latest results and receive direct feedback on outcomes and progress. • Provide an APRIL update at APL Delegates' Forum events/annual joint APRIL–APL Board discussion (at least once annually).	Ongoing Ongoing Ongoing Ongoing
5.3 Present updates of APRIL's activities and progress at producer and scientific forums	• Present on APRIL activities and outcomes to representatives of a wide member and producer base in Australia through industry seminars/meetings. • Utilise participant expertise in extension and communication of outcomes from APRIL R&D, Education & training and commercialisation activities: – Present at a minimum of two member-based conferences per annum, from March 2027.	Ongoing Ongoing
5.4 Participate in strategic sponsorship/partnerships	• Raise and reinforce APRIL's contributions to the Australasian pork industry by providing strategic sponsorship or partnerships (e.g., APSA conference, State field/industry days, member events).	Ongoing
5.5 Keep industry and stakeholders informed of APRIL's activities and outcomes	• Provide timely and relevant media releases to the rural press including at least 10 articles per annum in the APL monthly newsletter (or equivalent). • Write a quarterly newsletter to all members/Participants and stakeholders. • Maintain a LinkedIn page with regular updates on APRIL activities. • Ensure stakeholder contact lists are updated annually. • Conduct strategic/targeted scientific seminars and updates (two per year, from March 2026). • Financial support for selected peer-reviewed publications in internationally recognised journals (up to five papers supported per year, to a total value of $7,500).	Ongoing Ongoing Ongoing Ongoing Ongoing Ongoing
5.6 Maintain an independent website for information and promotion of APRIL activities	• Maintain the APRIL website for communication of research, education and training and commercialisation outcomes, and APRIL news, and maintain links to the Pork CRC website.	Ongoing
5.7 Review and dissemination of project success	• For applicable projects and where appropriate and robust mechanisms exist, evaluate the return on investment into APRIL for the pork industry.	Ongoing

COMMERCIALIS
REPORT

ISATION

THE APRIL BOARD DIRECTS COMMERCIAL DECISIONS REGARDING IP AND STRATEGY, SUBSEQUENTLY THE COMMERCIALISATION AND ADOPTION ACTIVITIES ARE REPORTED DIRECTLY TO THE APRIL BOARD. IN TERMS OF COMMERCIALISATION REVENUE AND ACTIVITIES, THE FOLLOWING OUTCOMES AND OPPORTUNITIES WERE ACHIEVED AND/ OR DEVELOPED IN THE REPORTING PERIOD:

AUSSCAN ONLINE

In this reporting period APRIL in collaboration with AB Vista launched an AusScan marketing campaign "10 Years of Bringing Precision to Variability" to celebrate 10 years operating as a commercial enterprise (Figure 1). There was a total of four LinkedIn posts which resulted in 275 engagements (likes, comments, reposts and clicks) and approximately 6,000 impressions (the number of times the LinkedIn post is displayed on users' screen). The posts exceeded the normal LinkedIn benchmark results which is excellent considering the niche audience the campaign targeted.

The total scans for this financial year was down on last year's record number by 3.8% with a total of 86,165 representing the second highest year on record. So another good year! AB Vista scans totalled 47,416 and the AusScan Integrators totalled 38,749 (Figure 2). As has been the case since launching in 2015 AusScan Online remains the dominant contributor to APRIL's commercialisation income stream for this reporting period.

Through APRIL, the enterprise continues to provide valuable reports to the animal feed industry including monthly cereal grain characteristics (Early Harvest Reports), technical updates on cereal calibrations, and the advancement of calibration studies to enhance the accuracy of the layer hen apparent metabolizable energy (AME) cereal predictions and the upgrade of the Pig DE calibration, is expected to be completed in November 2026. There have been several enquiries regarding signing onto AusScan Online this year which have resulted from attendance at the Feed for Purpose conference held at the Gold Coast in April this year. I visited some key feed mills and producers who are considering the service for the next harvest.

APRIL continues to provide the AusScan Early Harvest Reports which are initially emailed to Nutritionists and Feed industry personnel and later published in the Australian Pork News. These reports are monthly and include November 2025 through to April 2026. The reports provide the trends on cereal quality traits such as mean energy, protein and moisture values. This year the mean values for each variable and grain type across all regions were derived from 1,457 Barley 8,762 wheat and 98 Sorghum samples (Table 1). This represents over 10,000 scans contributing to the 2025–26 Early harvest reports.

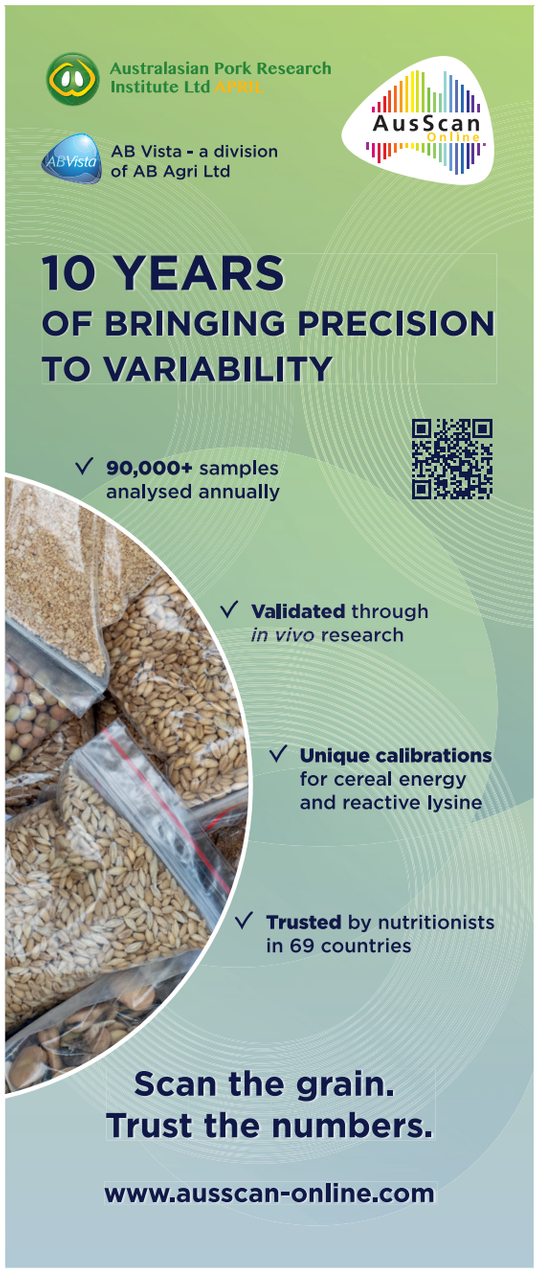


FIGURE 1

AusScan Campaign, 2026 Banner.

FIGURE 2

Total scans for AusScan Online for each Financial Year.

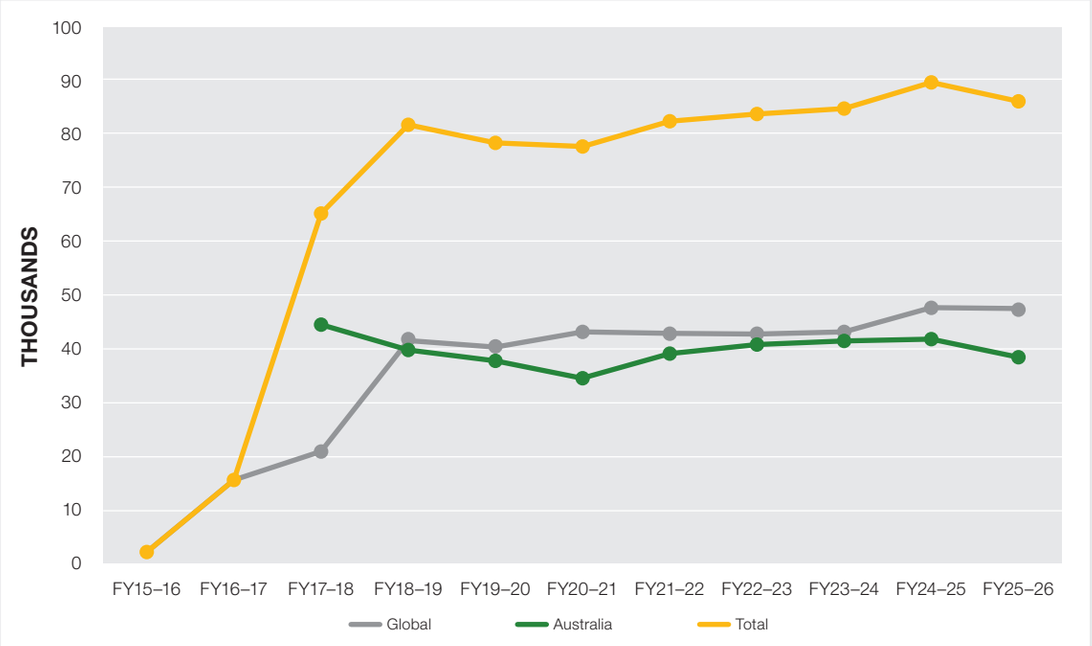


TABLE 1

Mean values for Pig faecal DE, Pig ileal DE, Protein % and Moisture % for Barley, Wheat and Sorghum samples using AusScan Online NIR calibrations for the 2025–26 season.

GRAIN	SAMPLE NUMBER	PIG FAECAL DE (MJ/kg)	PIG ILEAL DE (MJ/Kg)	PROTEIN %	MOISTURE %
Barley	1,457	12.71	10.25	10.19	10.60
Wheat	8,762	13.79	11.74	11.78	10.02
Sorghum	98	14.43	11.55	9.37	12.64

The mean pig faecal DE values for barley were significantly different between the regions as was also indicated in the previous 2 seasons, showed little variation within a region which includes the outliers (denoted by coloured symbols outside the quartile markers). The range was 4.1 MJ/kg across all regions compared to 2.9 and 2.2 MJ/Kg in the previous 2024–25 and 2023–24 seasons respectively and excluding outliers the range this harvest period was 1.7 MJ/kg (Figure 3). As has been noted in previous seasons, the mean pig faecal DE values for wheat are similar across all regions with a range of approximately 4.2 MJ/kg (including outliers). Although when outliers are excluded the range in predicted DE values reduced to approximately 0.7 MJ/kg (Figure 4). Excluding outliers, the protein % of barley (Figure 5) showed variation within regions and between regions whereas wheat (Figure 6) showed variation within a region and less variation between regions. Outliers are included in the energy graphs to indicate the importance of scanning grains for this key economic parameter.

Additionally, this reporting period AusScan reviewed the variation in reactive lysine for canola meal and soybean meal. The mean values of key quality parameters for soybean (1,213 samples) and canola meal (687 samples) were calculated from AusScan calibrations (Table 2).

TABLE 2

Mean values for Protein %, Moisture %, Total and Reactive Lysine for Soybean and Canola Meals for the 2025–26 season.

PROTEIN MEAL	SAMPLE NUMBER	PROTEIN %	MOISTURE %	TOTAL LYSINE (g/Kg)	REACTIVE LYSINE (g/Kg)
Soybean	1,213	45.84	11.45	25.44	22.22
Canola	687	37.30	10.75	21.22	20.05

FIGURE 3

Distribution of Pig Faecal DE (MJ/kg) by region for barley samples from November 2024 through to April 2025 as predicted by AusScan Online.

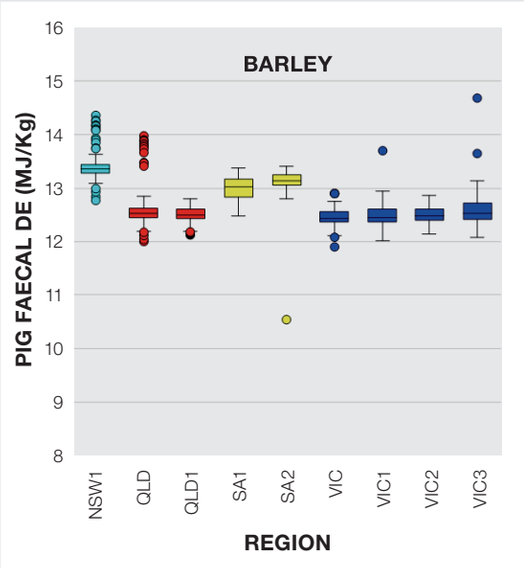


FIGURE 4

Distribution of Pig Faecal DE (MJ/kg) by region for wheat samples from November 2024 through to April 2025 as predicted by AusScan Online.

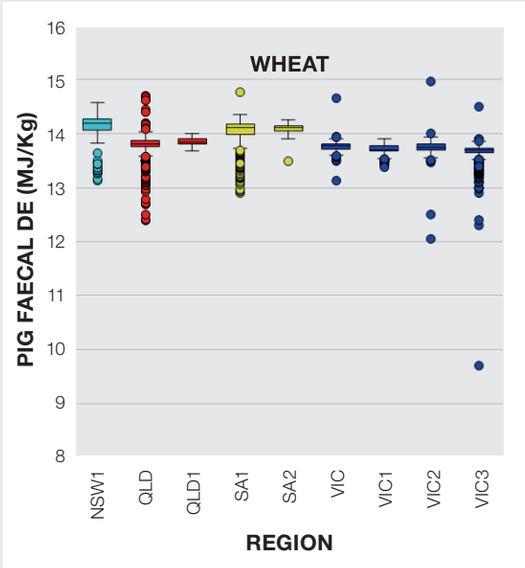


FIGURE 5

Distribution of Protein (%) by region for barley samples from November 2025 through to April 2026 as predicted by AusScan Online.

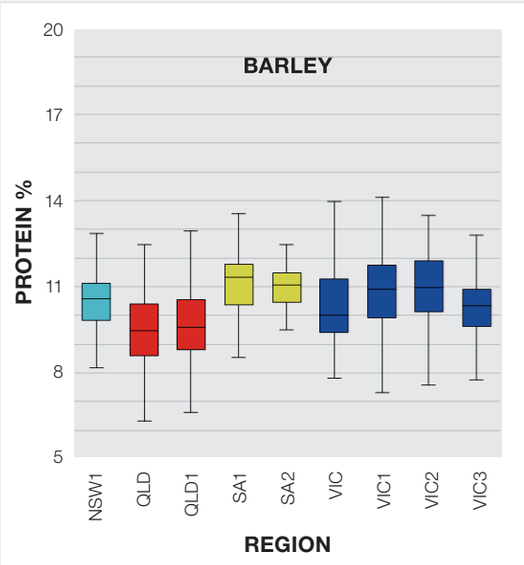
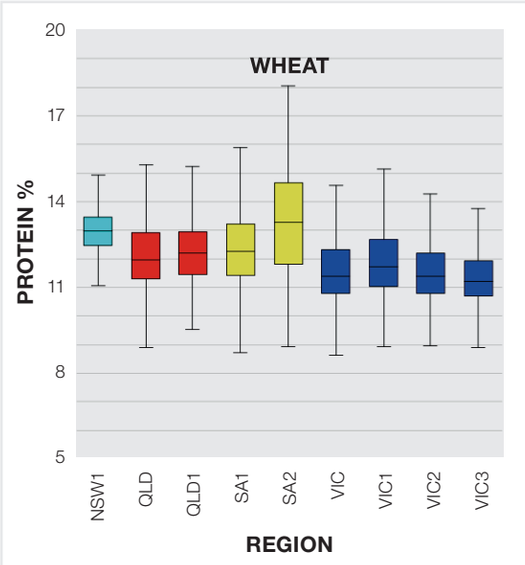


FIGURE 6

Distribution of Protein (%) by region for wheat samples from November 2025 through to April 2026 as predicted by AusScan Online.



Variation in reactive and total lysine values from November 2025 to April 2026 are shown in Figures 7 and 8. The reactive lysine calibrations are internationally recognised and represent approximately 80% of AusScan overseas scans. The calibration offers a critical assessment of the quality of protein meal sample (soybean or canola) particularly how much heat damage has occurred and what amount of lysine is available (reactive lysine) to the animal. Thus, a vital tool for nutritionists and feed formulators.

FIGURE 7

Distribution of Total and Reactive Lysine (g/Kg) by region for Soybean Meal samples from November 2025 through to April 2026 as predicted by AusScan Online.

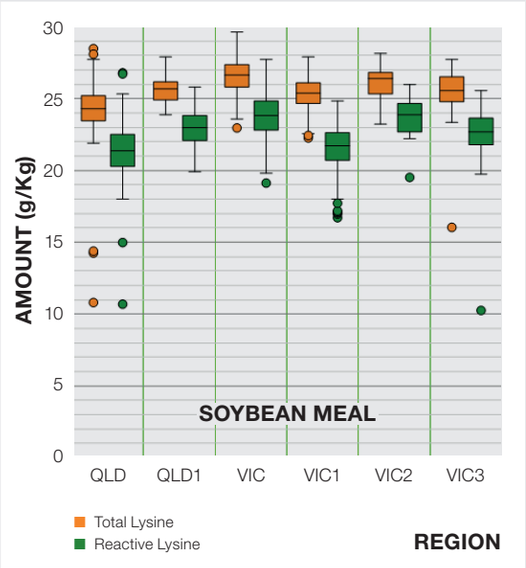
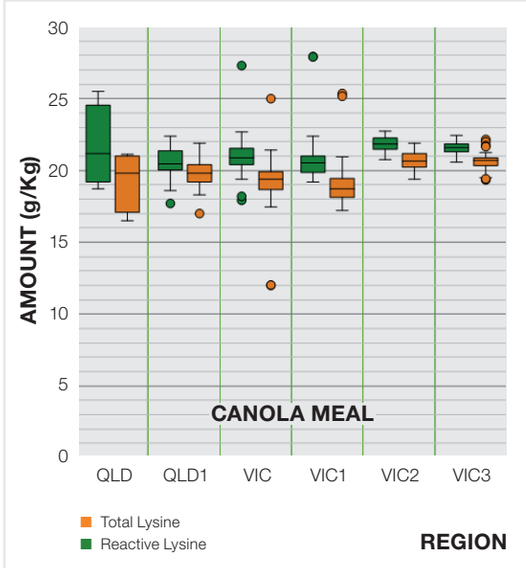


FIGURE 8

Distribution of Total and Reactive Lysine (g/Kg) by region for Canola Meal samples from November 2025 through to April 2026 as predicted by AusScan Online.



In Australia we have a consistent stream of ingredient data from AusScan back to APRIL to provide reports to support nutritionists in the Australian livestock industry. I was invited to present "The Sharing of NIR Data – Feed Variability and Challenges" at the AB Vista Swine Seminar, held in Melbourne in November. The presentation underlined the steps required before high-quality data can be utilised. AusScan has implemented a quality assurance scheme "Ingot Check" to provide users with peace of mind that their NIR machines and the calibrations applied are consistently performing. The scheme has been running for over 7 years. This was key to increasing uptake and scan volumes in the Australian industry, as sufficient scan numbers are required to produce meaningful reports. APRIL now provides a regional overview of grain quality traits across Australia, with over 12,000 cereal and protein meal samples analysed in the Early Harvest collection period. Next year we will be including reactive lysine output for canola and soybean meal as part of the Early Harvest report. I would like to thank all the Australian laboratories and feed mills for their collaboration in providing the data for these reports.

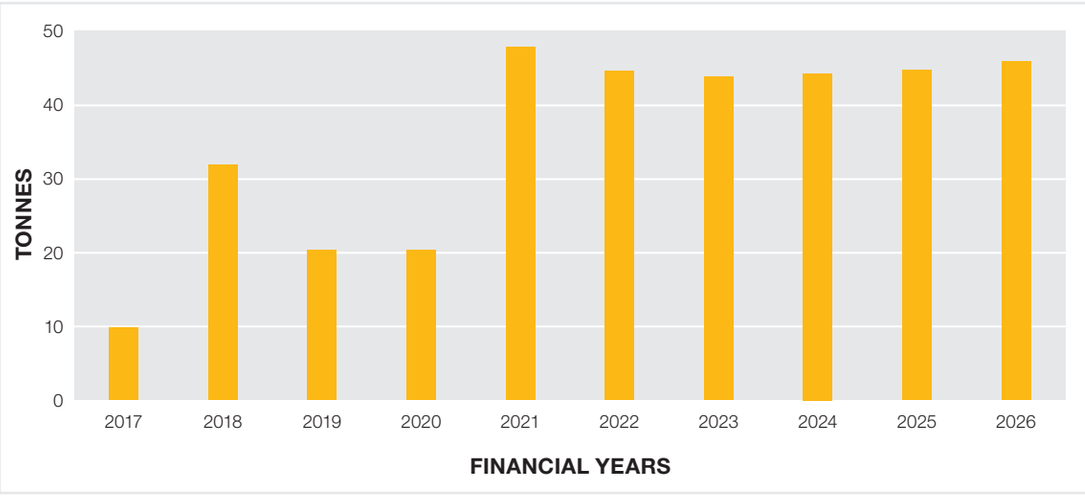
BARASTOC SWINE BLOCK

The Barastoc Swine Block sales have remained consistent over the past 6 years ranging between 45 to 50 tonne per annum which was approximately double the annual sales levels achieved in the first 3 years after launch (Figure 9). In this reporting period a total of 48.4 t was sold, the second highest total since launch in 2017. The swine block is an interesting product with the increase in volume of sales 5 years ago also coinciding with improved strategic use of the block by "hanging" rather than fixated or loose in the pen, which results in a slower replacement rate, masking the true uptake.

The Canadian patent application (#2973626 *Product and method for providing enrichment and facilitating expression of natural behaviors in pigs* was granted on the 19th January 2026. The European (Divisional) Patent Application No. 23214063 is still under examination as of August 2026.

FIGURE 9

Annual Barastoc Swine Block sales (Tonnes) by each Financial year from 2017 to 2026.



APRIL PIPELINE

NCG SUPPLEMENTATION

The International Patent Application No. PCT/AU2024/050124 for NCG supplementation for enhancement of growth performance, carcass backfat and meat quality of finisher pigs was officially published on the 29 August 2024. This year we have received an International Preliminary Report on Patentability (IPRP), in which the claims for reducing backfat thickness in immunocastrated male pigs is considered novel, and we will need to argue the "inventive step" closer to the time of examination. It may be one to two years before the Australian and New Zealand applications are examined.

NOVEL ANTIMICROBIAL SUSCEPTIBILITY TESTING (AST) PLATES A COMMERCIALISATION STUDY WITH AQUILA SCIENTIFIC

The project is led by Professor Sam Abraham (Murdoch University). A unique Commercialisation project, **7C-009**: *Commercialisation of potential outcomes from Novel Antimicrobial Susceptibility Testing plates* will involve developing a proprietary brand of 96 well plates with long shelf life that can be shipped and stored at room temperature for diagnostic testing and surveillance. During this reporting period, additional quality control (QC) testing was performed on plates manufactured for Rhodococcus equi, and all isolates were successfully tested on the manufactured plates.

The project experienced some delays due to regulatory and compliance requirements associated with packaging, validation, and finalisation of the manufacturing workflow. Shelf-life testing identified that penicillin-based drugs were degrading over time, while the other antimicrobials assessed remained stable. As such a new vacuum sealing system to improve packaging performance and reduce degradation risk during storage has been installed.

The final stage of the project now focuses on optimising and calibrating low-temperature vacuum drying conditions, validating the new packaging workflow against likely ISO and TGA compliance requirements, and assessing packaging materials for oxygen and light protection. This packaging material assessment is also being undertaken with input from Prof. Sanjay Garg (Adelaide University). The project is expected to be completed by the end of 2026.

AT PRESENT APRIL HAS 16 INNOVATION PROJECTS ACTIVE AND SIX ARE MOVING THROUGH THE CONTRACT PROCESS, AND MAY OFFER FUTURE COMMERCIALISATION OPPORTUNITIES TO ADD TO THE APRIL PIPELINE

FIGURE 10

Aquila R. equi plates getting packaged for external lab testing.

COMMERCIALISATION OPPORTUNITIES

The APRIL Industry Priority Project **6A–106b** *Precision monitoring of reproductive state via development of pen side mucus testing and continuous remote monitoring* was reported in the last annual report as making progress towards commercialising the outcomes. The technology can now be applied to enable an accurate indicator of Oestrus when compared to ultrasound, and the detection of pregnancy as early as day 18 of gestation. It is also possible that the technology can also be applied to predicting the onset of farrowing. This year the group were able to obtain the required summertime data set which is key to progressing a provisional patent application and commercialisation as conventional methods of oestrous detection become difficult over summer. APRIL also provided a letter of support to the parties for Australian Economic Accelerator (AEA) grant in March this year as it be an attractive pathway towards commercialisation. Unfortunately, after the application was lodged, the parties were notified that no future rounds of AEA funding will be awarded beyond the 2025–26 financial year due to federal budget repair measures.

At present APRIL has 16 Innovation projects active and six are moving through the contract process (see EO Report), and may offer future commercialisation opportunities to add to the APRIL pipeline. The AgriFutures team continue to create connections with research bodies, marketing groups and potential partners that may enhance current and future APRIL commercial projects. The AgriFutures website GrowAg.com provides opportunities to communicate APRIL research calls to a much wider audience.

STRATEGIC PLAN DELIVERABLES

A summary of progress against the Strategic Plan deliverables is provided below:

PILLAR 2: INDUSTRY RELEVANT COMMERCIALISATION ACTIVITIES FOR THE AUSTRALASIAN PORK INDUSTRY

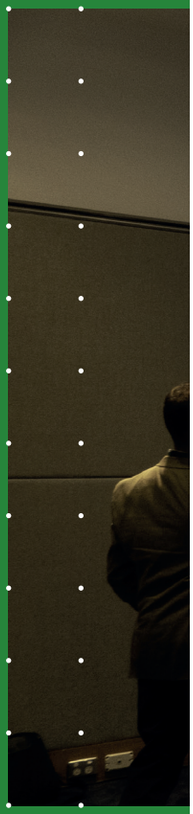
ACTIVITIES	KEY OUTCOMES / DELIVERABLES	2026 STATUS
2.1 Be the single point of contact, referral and guidance for commercialisation activity in Australia	Formalise an agreement and processes with Australian Pork Limited to become the single point of contact, referral and guidance for commercialisation activities in Australia.	🟡 Not achieved this year – ongoing
	APL commercial enterprises to be transferred over to APRIL management.	🟡 Not achieved this year – ongoing
2.2 Support a viable, innovative and expanding commercialisation business	Effectively continue to manage current commercialisation arrangements to ensure they are sustainable and providing a return to APRIL:	
	• Commercialisation income > $450,000 per annum, by 2029.	🟢 In progress
	• At least one new product/service successfully commercialised and generating revenue for APRIL, by 2027.	🟢 In progress
	Initiate APRIL endorsed technology:	
	• Become an independent body to verify a brand through high quality comparative research.	🟡 Not achieved this year – ongoing
	• Create APRIL Smart brand with associated license opportunities through endorsements. to enhance investment and product adoption into the industry, and permit an acceptable financial return to APRIL.	🟡 Not achieved this year – ongoing
	Communicate a commercialisation report as a Standing item at each APRIL Board meeting.	✔ Achieved for the year – ongoing
2.3 Ensure commercialisation processes are efficient and are generating optimal returns	Commercialisation project criteria to be re-vamped and be more attractive to non-participants (less restrictive).	🟢 In progress
	Manage, utilise and maintain expertise through long term programmed commercial studies in key APRIL enterprises to improve and enhance:	
	• AusScan Pig DE, Broiler AME and Reactive Lysine calibrations for global markets.	🟢 In progress
	• Sow Block enrichment studies for local, USA, and European markets.	🟢 In progress
	AusScan succession planning:	
	• Training / support services through a prospective commercial partner.	🟢 In progress
	• Management of data, Early Harvest reports and informatics.	🟢 In progress
	Reinvest commercial income from investment in product development in applicable APRIL activities.	🟡 Not achieved this year – ongoing
2.4 Support for Commercialisation Projects	Implement annual Commercialisation project calls that increase APRIL's commercialisation pipeline and lead to greater commercial returns to APRIL and potential benefits to industry.	🟡 Not achieved this year – ongoing
	Three new projects launched by 2028.	🟡 Not achieved this year – ongoing
	Reinvest up to $100,000 per annum into new product development.	🟡 Not achieved this year – ongoing
2.5 Continued engagement with growAG	Continue engagement with growAG to promote commercialisation opportunities arising from R&D activities and ad hoc commercial opportunities.	✔ Achieved for the year – ongoing

COMMUNICATIO
REPORT

INTRODUCTION

APRIL's communication framework, as part of its Strategic Plan (2026–2029), has continued to evolve ensuring that all stakeholders are provided with relevant and timely information. During the reporting period, extensive dissemination of information through in-person presentations at producer and industry-related events, attendance at conferences and meetings, via media such as APRIL NEWS and the Australian Pork Newspaper, and through publications, has occurred.

Of note, the communications framework contains mechanisms for Members and other stakeholders to provide feedback to APRIL management and to the Board. The Strategic Plan puts communication at the heart of APRIL's operations and extension agenda, with Pillar 5 devoted to connecting with our stakeholders.



ION

Australasian Pork Research Institute Ltd
APRIL
Working Together - At being Different
Green Paper
R & D Priorities :
Innovation Call
Transformational Call
Industry Priority EOI
Education and Training
1 PhD; 2 PhD top-ups
Australian Pork Industry Education and Training Committee
Extension Activities
12 APN Articles
3 Newsletters
Workshops / Presentations
Unique NIR Calibrations
Online Service

THROUGHOUT THE 2025–26 REPORTING PERIOD, APRIL CONTINUED TO KEEP STAKEHOLDERS INFORMED AND ENGAGED THROUGH REGULAR INDUSTRY COMMUNICATIONS. DR SOPHIE WARD'S DUAL ROLE (50/50 SPLIT) AS EXTENSION OFFICER FOR BOTH APRIL AND APL WAS EVIDENT IN THE AMOUNT OF STAKEHOLDER ENGAGEMENTS THAT APRIL WAS INVOLVED IN AND THE DEPTH OF THAT INVOLVEMENT. IN FEBRUARY 2026, MS ASHLEE ADAMS STEPPED IN SEAMLESSLY TO MANAGE SOPHIE'S COMMUNICATIONS AND EXTENSION RESPONSIBILITIES WHILST ON MATERNITY LEAVE.

COMMUNICATION ACTIVITIES

ANNUAL STAKEHOLDERS DAY 2025

The 2025 Annual Stakeholder Forum was held in Melbourne on the 20th November, bringing together over 65 APRIL participants and their guests from across the pork industry. The forum showcased updates from a range of current and emerging research projects, including:

Innovation Projects

- *Brain measures of positive welfare in pigs* (5A–113), presented by Dr Katelyn Tomas.
- *Placentophagia: investigating its effect on sow and piglet performance in confined and loose housing systems* (5A–119), presented by Dr Lauren Hemsworth.
- *Escaping the daily grind – coarser ground diets for improved fetal growth* (5A–111), presented by Dr Kate Plush.

Transformational/Priority Projects

- *How to make antimicrobials in pig feed redundant, naturally* (ARC-LP190101161), presented by Prof Eugeni Roura.
- *Food waste to pig feed – Safe and Bio-secure* (6A–105), presented by Dr Valeria Torok.

Dr Rikard-Bell provided a commercialisation update, while Prof Paul Verma presented findings from *Precision monitoring of reproductive state via development of pen side mucus testing and continuous remote monitoring* (6A–106a). Representing APRIL's education, training and extension activities, Dr Sophie Ward introduced several students who shared snapshots of their research projects. The day concluded with an update from Industry Placement Program (IPP) recipient Dr Samantha Sterndale, who reflected on her IPP experience at Westpork, from learning the different KPIs for breeders and growers, becoming the APIQ manager across all Westpork sites, to presenting her PhD completion seminar at Murdoch University.

AUSTRALASIAN PORK SCIENCE ASSOCIATION (APSA) NOVEMBER 2025

APRIL had strong representation across this 3-day event in Melbourne. Dr Sophie Ward presented the Tail Biting Decision Support Tool to assess welfare risks during production stage transitions. Presentations from APRIL included: Jessica Craig's (JBS Pork Australia) work on alternative creep area heat sources, Patrick Hurley's (SunPork Group) work on comparable performances of the Maternity Ring versus farrowing crates, and Paul Bogere's (The University of Queensland) findings on slow growing piglets feed consumption habits.

PORK N TALKS 2026

Through Dr Sophie Ward's dual extension role across APRIL and APL, APRIL maintained a strong presence in the 2026 Pork n Talk roadshow series. Held across five states, the roadshows focused on the theme "Farrowing House Success" and provided a valuable platform for sharing research outcomes with producers, researchers and stakeholders. APRIL-supported research included Dr Katelyn Tomas (current APRIL IPP recipient, JBS Pork Australia) who shared findings from her creep feeding literature review in New South Wales and Victoria and Dr Max Muller, who discussed how his nutrition research is contributing to improved farrowing performance in Queensland.

Across all states, Prof John Pluske, Chief Scientist for the Australian Pork Industry, provided insights from the International Conference on Pig Liveability held in Nebraska in November 2025.

Dr Charles Rikard-Bell also presented findings from several recently completed projects within the Farrowing House theme, including:

- *Heating up the house: Evaluating the effect of novel heating and monitoring systems on the productivity, welfare and economics of farrowing houses* (5A–116), Dr Jessica Craig, JBS Pork Australia.
- *Escaping the daily grind – coarser ground diets for improved fetal growth* (5A–111), Dr Kate Plush.
- *How to make antimicrobials in pig feed redundant, naturally* (ARC Linkage Project), Paul Bogere.
- *The use of thermographic technology to detect reproductive state in sows and improve piglet performance in a commercial farrowing house* (6A–104), Dr Jessica Craig.
- *Identifying Knowledge Gaps and Strategies to Improve Progeny Uniformity of Pigs* (6A–109), Dr Fan Liu.

Attendees were also given a snapshot preview of upcoming APRIL-supported research, including:

- *Salt Enrichment Blocks for Lactating Sows* (5A–134), Dr Lauren Staveley.
- *Effects of Feeding Ammonium Chloride to Sows on Piglet Growth and Survival* (5A–136), Prof Kiro Petrovski.
- *Hot and Bothered! Long term impacts of late pregnancy heat stress on sows and progeny* (6A–102), Dr Kate Plush.
- *Rethinking piglet creep feeder design to meet enrichment definitions* (5A–131), James Langley.

TALKING AGTECH WORKSHOP

Unfortunately, the planned *Talking AgTech* workshop was cancelled due to heightened activist activity during the latter half of 2025. The event was intended to showcase emerging technologies relevant to pork production, including APRIL's Tail Biting Decision Support Tool.

APRIL NEWSLETTERS

APRIL published four newsletter editions during the 2025–26 reporting period, with an audience reaching more than 300 industry stakeholders. The newsletter continues to be an important communication channel, featuring research project updates, researcher profiles and interviews, industry event reports, extension activities, upcoming research opportunities and funding calls and reminders for upcoming industry events and announcements.

AUSTRALIAN PORK NEWSPAPER

Across the reporting period, APRIL's articles in the monthly Australian Pork Newspaper showcased the breadth of research, innovation and people driving progress within the Australian pork industry. Across the 12 articles submitted, the content focused on practical research outcomes for producers, while also highlighting emerging innovation projects, Education and Training awardees, and the achievements of key researchers making a difference. Articles celebrated industry milestones such as the 10 year anniversary of AusScan, promoted APRIL-funded initiatives and events. Collectively, these articles helped communicate research outcomes, share industry knowledge and increase awareness of APRIL's investment into research, development, education and innovation.

WEBSITE

APRIL continues to maintain and update its website to ensure information, resources and links remain accurate, relevant and accessible to industry stakeholders. Throughout 2025–26, the website served as an important communication platform featuring news articles, project updates and key industry announcements. Content included updates on recently completed research projects, promotion of Enterprise Award application rounds, information on APIETC Scholarship and Awards, and announcements relating to APRIL's Industry Placement Program (IPP). The website also plays a key role in knowledge transfer by ensuring final project reports and research summaries are made available to industry in a timely manner.

SUPPORTING PIG INDUSTRY RESEARCH VIA AI TOOL

APRIL has partnered with Australian Pork Limited to pilot a secure AI-powered search platform designed to improve access to pork industry research and knowledge. Unlike publicly available AI tools that draw information from across the internet, this platform only sources information from a dedicated database of trusted APRIL and APL research. This ensures users receive responses based on verified industry research and evidence. The platform has the potential to unlock access to more than three decades of Australian pork industry research, creating a powerful and efficient knowledge-sharing resource for producers, researchers and industry stakeholders. Following development and testing throughout the year, the platform is now live and available for use.

ATTENDANCE AT PRODUCER AND SCIENTIFIC FORUMS

2025:

- 22 August: PORKSA Day, Dr Charles Rikard-Bell presented.
- 23 September: Pathways & Partnerships: Agriculture, Animal & Veterinary Bioscience Industry Night, University of Sydney. Dr Charles Rikard-Bell and Dr John Pluske attended.
- 14–16 October: Australian Pig Veterinarian Conference, Melbourne. Dr Sophie Ward presented, APRIL exhibitors booth.
- 17–19 November 2025: APSA Australian Pig Science Association, Melbourne. Dr Sophie Ward presented, Dr Charles Rikard-Bell attended.
- 20 November 2025: AB Vista Swine Seminar, Melbourne. Dr Rikard-Bell presented Sharing Of NIR Data (Feed Variability & Challenges).
- 26 November: End Food Waste Australia CRC-P, Melbourne. Dr Charles Rikard-Bell invited as guest panellist.

2026:

- 13 February 2026: APL Pork n Talk Forum, Toowoomba. Dr Charles Rikard-Bell presented on recently completed and ongoing farrowing house.
- 17–18 February: Evoke Ag, Melbourne. Dr Charles Rikard-Bell and Ashlee Adams attended, joint exhibitor booth with APL.
- 13 March: APL Pork n Talk Forum, Perth. Dr Charles Rikard-Bell presented on recently completed and ongoing farrowing house research.
- 19 March: APL Pork n Talk Forum, Cootamundra. Dr Charles Rikard-Bell presented on recently completed and ongoing farrowing house research.
- 27 March: APL Pork n Talk Forum, Adelaide. Dr Charles Rikard-Bell presented on recently completed and ongoing farrowing house research.
- 12–14 May: Food with Purpose Conference, Gold Coast. Dr Charles Rikard-Bell and Ashlee Adams attended, APRIL exhibitor booth.

STRATEGIC PLAN DELIVERABLES

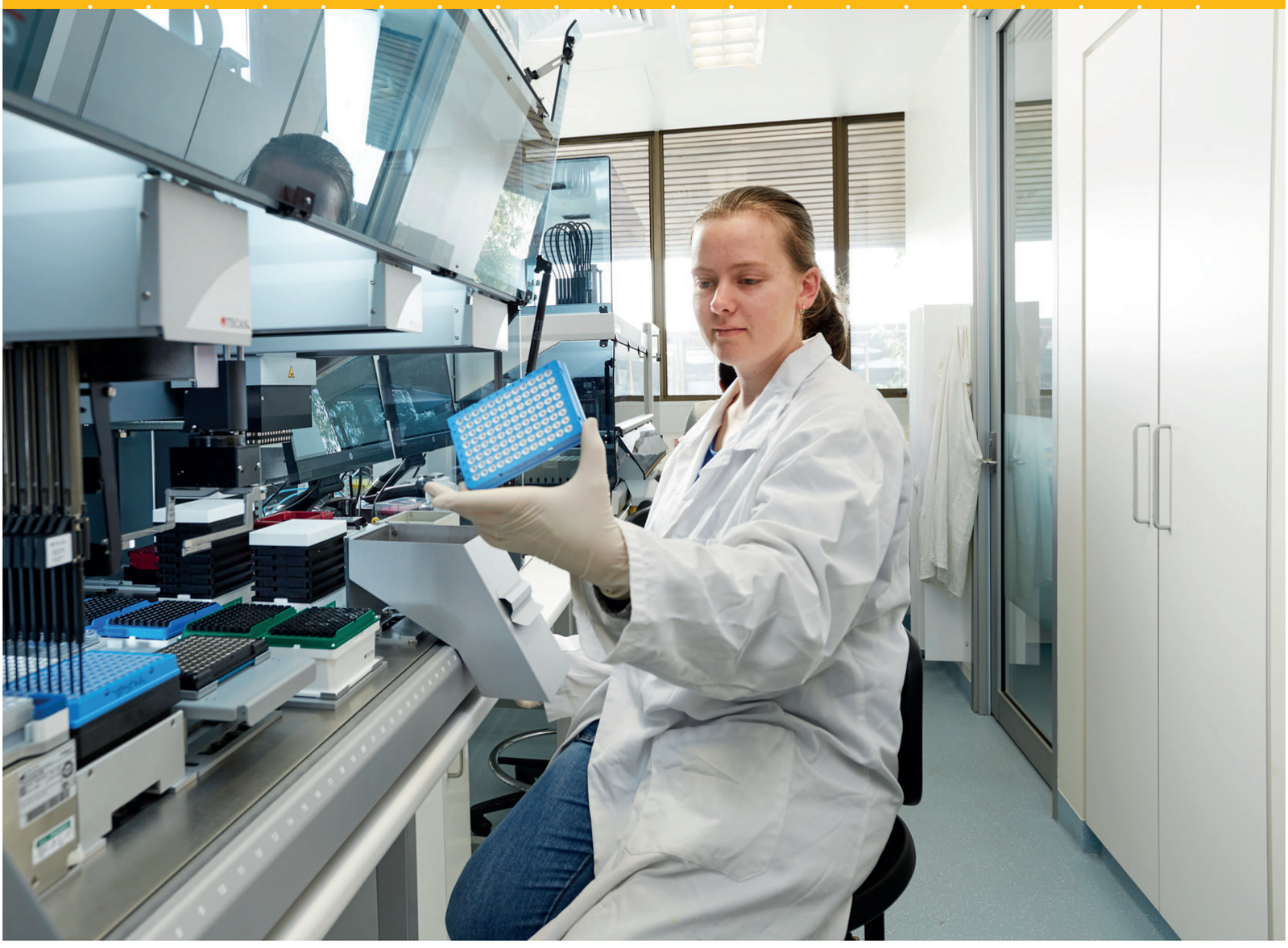
A summary of progress against the Strategic Plan deliverables is provided below:

PILLAR 5: CONNECTING WITH PARTICIPANTS AND THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY OUTCOMES/DELIVERABLES	2026 STATUS
5.1 Implement an effective and appropriate communication plan	Provide an appropriate communication framework that effectively disseminates APRIL activities, and engages Participants/Members to deliver associated outcomes.	✔ Achieved for the year – ongoing
5.2 Develop activities that are collaborative and inclusive across the member and stakeholder base	All projects to involve at least one Participant organisation.	✔ Achieved for the year – ongoing
	Maintain the Board Director-Ordinary Member buddy system to enable one-on-one communication with Ordinary Members (4–5 times annually).	✔ Achieved for the year – ongoing
	Invite Members and key stakeholders to attend the APRIL Annual Stakeholder Day (and other events as appropriate) to extend latest results and receive direct feedback on outcomes and progress.	✔ Achieved for the year – ongoing
	Provide an APRIL update at APL Delegates' Forum events/annual joint APRIL–APL Board discussion (at least once annually).	✔ Achieved for the year – ongoing
5.3 Present updates of APRIL's activities and progress at producer and scientific forums	Present on APRIL activities and outcomes to representatives of a wide member and producer base in Australia through industry seminars/meetings.	✔ Achieved for the year – ongoing
	Utilise participant expertise in extension and communication of outcomes from APRIL R&D, Education & training and commercialisation activities.	✔ Achieved for the year – ongoing
	• Present at a minimum of two member-based conferences per annum, from March 2027.	✔ Achieved for the year – ongoing
5.4 Participate in strategic sponsorship / partnerships	Raise and reinforce APRIL's contributions to the Australasian pork industry by providing strategic sponsorship or partnerships (e.g., APSA conference, State field/industry days, member events).	✔ Achieved for the year – ongoing
5.5 Keep industry and stakeholders informed of APRIL's activities and outcomes	Provide timely and relevant media releases to the rural press including at least 10 articles per annum in the APL monthly newsletter (or equivalent).	● Partly achieved this year – ongoing
	Write a quarterly newsletter to all members/Participants and stakeholders.	✔ Achieved for the year – ongoing
	Maintain a LinkedIn page with regular updates on APRIL activities.	✔ Achieved for the year – ongoing
	Ensure stakeholder contact lists are updated annually.	✔ Achieved for the year – ongoing
	Conduct strategic/targeted scientific seminars and updates (two per year, from March 2026).	✔ Achieved for the year – ongoing
	Financial support for selected peer-reviewed publications in internationally recognised journals (up to five papers supported per year, to a total value of $7,500).	✔ Achieved for the year – ongoing
5.6 Maintain an independent website for information and promotion of APRIL activities	Maintain the APRIL website for communication of research, education and training and commercialisation outcomes, and APRIL news, and maintain links to the Pork CRC website.	✔ Achieved for the year – ongoing
Review and dissemination of project success	For applicable projects and where appropriate and robust mechanisms exist, evaluate the return on investment into APRIL for the pork industry.	● Not achieved this year – ongoing

PROGRESS AGAINST PILLAR 3

EFFECTIVE MANAGEMENT AND DELIVERY OF TRANSFORMATIONAL, INNOVATIVE AND COMMERCIALLY RELEVANT RESEARCH AND DEVELOPMENT FOR THE AUSTRALASIAN PORK INDUSTRY



APRIL'S PROGRESS AGAINST THE KEY OUTCOMES AND DELIVERABLES FROM PILLAR 3: EFFECTIVE MANAGEMENT AND DELIVERY OF TRANSFORMATIONAL, INNOVATIVE AND COMMERCIALLY RELEVANT RESEARCH AND DEVELOPMENT FOR THE AUSTRALASIAN PORK INDUSTRY IS SET OUT BELOW, AND EXPLAINED FURTHER IN THE FOLLOWING RESEARCH REPORTS.

PILLAR 3: EFFECTIVE MANAGEMENT AND DELIVERY OF TRANSFORMATIONAL, INNOVATIVE AND COMMERCIALLY RELEVANT RESEARCH AND DEVELOPMENT FOR THE AUSTRALASIAN PORK INDUSTRY

ACTIVITIES	KEY OUTCOMES/DELIVERABLES	2026 STATUS
3.1 Review the APRIL R&D Activities as defined by the relevant Green Paper activities	Review research investment to ensure an appropriate portfolio of Transformational, Innovation, and Commercialisation Projects, with > 60% of the available funds for R&D directed to Transformational Projects.	● Partly achieved this year – ongoing
	Reassessed targets for investment after each funding round and adjust targets accordingly, e.g., balance strategic research domains with research opportunities, enable continuation of completed projects having high potential for industry outcomes, assessment of APRIL commercial income versus direct industry benefits.	✔ Achieved
3.3 Support for Innovation Projects	Ensure at least two Transformational Projects, for longer-term, collaborative, inter- and multi-disciplinary 'big picture' projects, are prepared and submitted annually, with major external funding support sought where possible, in priorities to be determined.	● In progress
2.3 Support for Innovation Projects	Funding support annually (20–30% of applicable funds) for smart, innovative and 'out of the box' projects that stimulate change and innovation in the industry.	✔ Achieved
	Project criteria requiring reassessment and to have a greater weighting on "innovation" and 'the idea" and to reduce emphasis on commercial partners and pathways.	● Not due this year

ENSURE AT LEAST TWO TRANSFORMATIONAL PROJECTS, FOR LONGER-TERM, COLLABORATIVE, INTER- AND MULTI-DISCIPLINARY 'BIG PICTURE' PROJECTS, ARE PREPARED AND SUBMITTED ANNUALLY, WITH MAJOR EXTERNAL FUNDING SUPPORT SOUGHT WHERE POSSIBLE, IN PRIORITIES TO BE DETERMINED

RESEARCH REI

TRANSFORMAT PROJECTS

WHAT IS A TRANSFORMATIONAL PROJECT?

APRIL Transformational Projects address major issues for the Australasian pork industry that, if successfully implemented, are likely to result in a step-change. Transformational Projects are highly collaborative, multi-disciplinary, and by their very nature require considerable resources and time to execute. Consequently, Transformational Projects require significant external investment and are targeted at, but not restricted to, the Australian Research Council schemes and the Cooperative Research Centre-Project (CRC-P) scheme.

EPORT
TIONAL

IN THE STRATEGIC PLAN 2019–2022, APRIL IDENTIFIED TWO KEY THEMES FOR TRANSFORMATIONAL PROJECTS AS FOLLOWS:

KEY THEMES

6.1.1 ENHANCED ANTIMICROBIAL STEWARDSHIP IN THE AUSTRALASIAN PORK INDUSTRY THROUGH TARGETED REDUCTION OF IN-FEED MEDICATIONS WITHOUT ADVERSE HEALTH CONSEQUENCES

Judicious use of antibiotics is a high priority for the Australasian pork industry. One of the best ways to reduce total use of antibiotics in pig production systems is to limit the use of in-feed medications. When antibiotics are included in feed, every pig on that feed receives a dose whether they need it or not, and dosage continues until the batch of feed is consumed. Arguably, this contributes to elevated overall use of antibiotics, an increased number of doses per pig and potentially an increase in the mg of active constituent administered per kg of pork produced. While antibiotic use in agriculture has not contributed significantly to antimicrobial resistance to date, the Industry does have an obligation to minimise any chance that application of antibiotics in pork production systems renders any registered agents or high or medium importance ASTAG (Australian Strategic and Technical Advisory Group on Antimicrobial Resistance)-classified antibiotics unsuitable for use in human medicine.

This priority has been identified as a transformational project because of the multidisciplinary nature of the challenge. Reduction of in-feed medications will potentially require a higher reliance on vaccines, novel use of other nutritional mechanisms to control disease, enhanced capacity to apply pulse water medications, better systems for disease surveillance, capacity for targeted individual pig treatments, better piggery hygiene, higher health status herds and sources of genetics and, if in-feed antibiotics are not used, systems that allow efficient and targeted application of other antibiotics.

6.1.2 ELIMINATION OF THE NEED FOR TAIL DOCKING IN AUSTRALASIAN PORK PRODUCTION SYSTEMS

Tail biting is an insidious and costly manifestation that can occur without warning and indiscriminately within commercial pork production systems. Occurrence extends across the entire industry. The cause of tail biting is not understood but is likely to be an interaction between behaviour, environment, management, nutrition, housing and health status, among others, with no one factor necessarily contributing more than another. Costs of tail biting extend to compromised pig welfare, negative behavioural traits, sub-optimal growth rates and feed conversion efficiency, carcase damage and loss of a potentially marketable product (i.e., the tail). Current interventions for the control of tail biting are generally effective yet inconsistent but involve the removal of a portion of the tail shortly after birth without the use of anaesthesia. Other invasive husbandry procedures such as teeth-clipping and ear notching have largely been eliminated from many production systems already, and there is increasing pressure to cease tail docking.

However, to date, the industry has resisted without any alternative approach to eliminate tail biting. As a priority, the pork industry should be focussed on understanding the causal factors and interactions that contribute to tail biting with a view to eliminating or managing these factors, as opposed to investing in research that justifies tail docking based on minimal pain responses or through the introduction of anaesthesia options. The significant current and future costs of tail biting and its management should not be underestimated, nor should the multi-faceted challenge of understanding the causal factors, which is why APRIL has identified elimination of the need for tail docking in commercial production systems as a transformational project.

FUTURE KEY PRIORITIES

As a result of the green paper process, the following key priorities have been identified for future Transformational projects:

1. PIG CARE AND WELLBEING

Expected outcomes:
Providing novel tools or approaches to support continuous improvement and assessment of pig care and wellbeing and demonstrate the welfare credentials of Australian pork.

Key research areas:
- Generation of a suite of suitable biomarkers indicating positive welfare attributes at end of life.
- Enrichment and management strategies to prevent tail biting.
- Objective assessment of pig care and wellbeing.

2. PROCESSING

Expected outcomes:
Ensuring a sustainable processing sector for the future.

Key research areas:
- Maintaining CO_2 as the primary stunning gas in Australia.
- Avoiding foreign object contamination in carcases.

3. DATA AND INFORMATION

Expected outcomes:
Exploiting the benefits of technologies with existing and future information for more efficient and profitable pig production, processing, and understanding of market trends.

Key research areas:
- Automatic capture and use of data (eg. smart sensors, digital technologies, AI) for more efficient and cost-effective building and pig management, eg. slaughter weight.
- Use of AI technologies to reduce piglet mortality/ enhance piglet and sow welfare at farrowing and during lactation, with different farrowing systems.

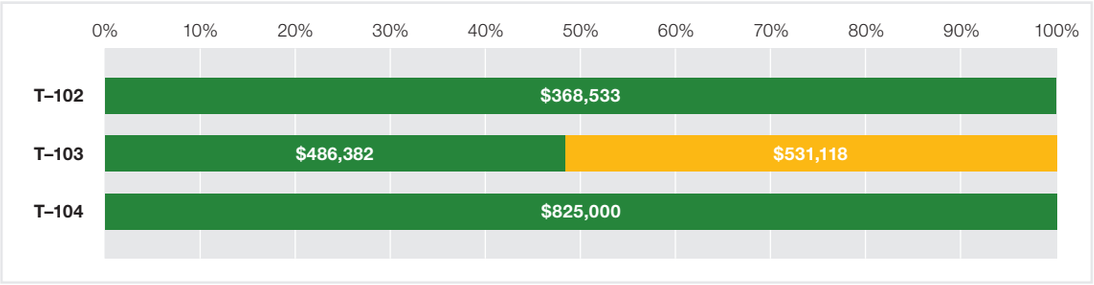
During the year, APRIL approved two new Transformational projects in the areas of R&D Priority *Pig Care and Wellbeing* and *Pig Processing.*

The nature of these complex proposals involves multiple organisations and are generally dependent on other funding sources and so the applications are ongoing and expected to be finalised in 2027.

PROJECTS

NO.	PROJECT NAME	LEAD PARTY
T–101	Pathways to rearing pigs with tails to maximise returns to pork producers	The University of Queensland
T–102	How to make antimicrobials in pig feed redundant, naturally	The University of Queensland
T–103	Novel approaches for combatting critically important antimicrobial resistance development in livestock	Murdoch University
T–104	Eliminating pig tail removal to improve welfare and industry sustainability	SunPork Pty Ltd

TRANSFORMATIONAL PROJECT COMMITMENTS



T–101: PATHWAYS TO REARING PIGS WITH TAILS TO MAXIMISE RETURNS TO PORK PRODUCERS AND T–104: ELIMINATING PIG TAIL REMOVAL TO IMPROVE WELFARE AND INDUSTRY SUSTAINABILITY

In March 2020, APRIL (as Lead Party) submitted a Round 9 CRC-P application Pathways to rearing pigs with tails to maximise returns to pork producers. The application involved researchers from The Universities of Queensland, Melbourne and New England, as well as strong industry involvement from Rivalea (Australia) Pty Ltd., SunPork Farms, and Australian Pork Limited. Unfortunately, the round was extremely competitive (8% success rate) and APRIL's application was unsuccessful. APRIL met with the collaborators and determined that a new CRC-P application should be submitted. A new submission Eliminating pig tail removal to improve welfare and industry sustainability was made to the Round 11 CRC-P funding round led by SunPork Pty Ltd. We were informed on 7 September 2021 that this application was successful. The application requested, and received, an Australian Government cash investment of $2,892,374 over three years, which combined with the project partners' cash contribution of $1,638,742 ($750,000 plus GST from APRIL), was able to leverage an additional $3,345,078 of combined in-kind contributions from the partners. This represents an overall leverage for APRIL of ~10.5:1. Partners in the project are APRIL, Australian Pork Limited, PIC Australasia P/L, Rivalea (Australia) P/L, RSPCA Australia, The University of Melbourne, The University of Queensland, and the University of New England. This was a good outcome directly addressing one of APRIL's two Transformational Project themes for the Industry, and demonstrating again the value of APRIL in driving large scale industry collaborations. The project has been completed and further details can be found in APRIL's 2025 Annual Report.

THE APPLICATION REQUESTED, AND RECEIVED, AN AUSTRALIAN GOVERNMENT CASH INVESTMENT OF $2,892,374 OVER THREE YEARS, WHICH COMBINED WITH THE PROJECT PARTNERS' CASH CONTRIBUTION OF $1,638,742 ($750,000 PLUS GST FROM APRIL), WAS ABLE TO LEVERAGE AN ADDITIONAL $3,345,078 OF COMBINED IN-KIND CONTRIBUTIONS FROM THE PARTNERS

T–102: HOW TO MAKE ANTIMICROBIALS IN PIG FEED REDUNDANT, NATURALLY

In July 2020, the Australian Research Council (Linkage scheme) announced that it has supported The University of Queensland-administered project 'How to make antimicrobials in pig feed redundant, naturally'. Other organisations involved in the successful grant are The University of Melbourne, the SunPork Group, DSM Nutritional Products, and APRIL.

Chief Investigators in the project are Professor Eugeni Roura (The University of Queensland), Professor Frank Dunshea (The University of Melbourne), Professor Mike Gidley (The University of Queensland), and Associate Professor Pat Blackall (The University of Queensland).

Total cash funding for the four-year project was $1,931,233, with the Australian Research Council contributing $852,000 and partners contributing an additional $1,079,233, of which $368,533 derives from APRIL.

The total value of the project (cash plus in-kind contributions) was $3,835,847.

Again, this is a great example of APRIL partnering with its members to successfully leverage external funding for a major research project of critical industry-wide importance. Research work in the project is progressing well, with there being regular management meetings between partners including updates from the PhD students involved in the program.

T–103: NOVEL APPROACHES FOR COMBATTING ANTIMICROBIAL RESISTANCE IN AUSTRALIAN PIGS: EXPLORING NATURE'S ANTIMICROBIAL ARSENALS, NATURALLY DERIVED FEED ADDITIVES AND NATURAL BACTERIAL FLORA TO COMBAT RESISTANT BACTERIA

The overarching aim of this project, led by Professor Sam Abraham at Murdoch University, is to determine the origin, transmission pathways and public health impact of newly emergent, critically important antimicrobial-resistant (CIA-R) *Escherichia coli* in pigs in order to develop novel control strategies for the pork industry.

This project expects to use advanced high throughput robotics and genomics to understand the extent of the AMR in pigs, significantly maximising the impact of novel integrated control strategies based on nature's antimicrobial arsenal. Using naturally derived feed additives, phages, and natural bacterial flora, the outcomes will enhance our understanding of AMR in pigs and aid in the development of commercially viable solutions. The anticipated outcomes will address one of the most pressing and globally significant animal and public health issues at the moment, namely the development and dissemination of resistance to last-line human use antimicrobials in food-producing animals.

Partners in this 3-year project are Murdoch University, CHM Alliance Pty Ltd., Australian Pork Limited, Feedworks Pty Ltd., Rivalea (Australia) Pty Ltd. and Tecan Australia Pty Ltd.

TRANSFORMATIONAL PROJECT: T–103

NOVEL APPROACHES FOR COMBATTING ANTIMICROBIAL RESISTANCE IN AUSTRALIAN PIGS

PROJECT LEADER:
Professor Sam Abraham (Murdoch University)

PROJECT COLLABORATORS:
Australian Pork Limited, Feedworks Pty Ltd, JBS Pork Australia Pty Ltd (formerly Rivalea (Australia) Pty Ltd), SunPork Group and Tecan Australia Pty Ltd

PROJECT STATUS:
In progress

BACKGROUND

Australia restricts the use of critically important antimicrobials (CIAs) in food animals, yet CIA-resistant *E. coli* can still reach piggeries through people, wild birds, feed, water and insects. Once a resistant clone settles into a herd, reducing antibiotic use alone will not remove it.

T–103 was established to measure how widespread these resistant bacteria are in Australian pigs and to develop natural, antibiotic-free ways to remove them. The project combines high-throughput robotics and genomics at Murdoch University's Antimicrobial Resistance and Infectious Diseases (AMRID) Laboratory with three of nature's tools: bacteriophages (phages), viruses that kill only their target bacteria; competitive-exclusion *E. coli* (CEC), harmless gut strains that take up space so resistant bacteria cannot return; and naturally derived feed additives.

The project addresses APRIL's transformational priority of enhanced antimicrobial stewardship. Its overarching aim is to understand the origin, spread and public health importance of CIA-resistant *E. coli* in pigs, and to use that knowledge to build practical control strategies the industry can adopt on farm.

PROJECT SUMMARY

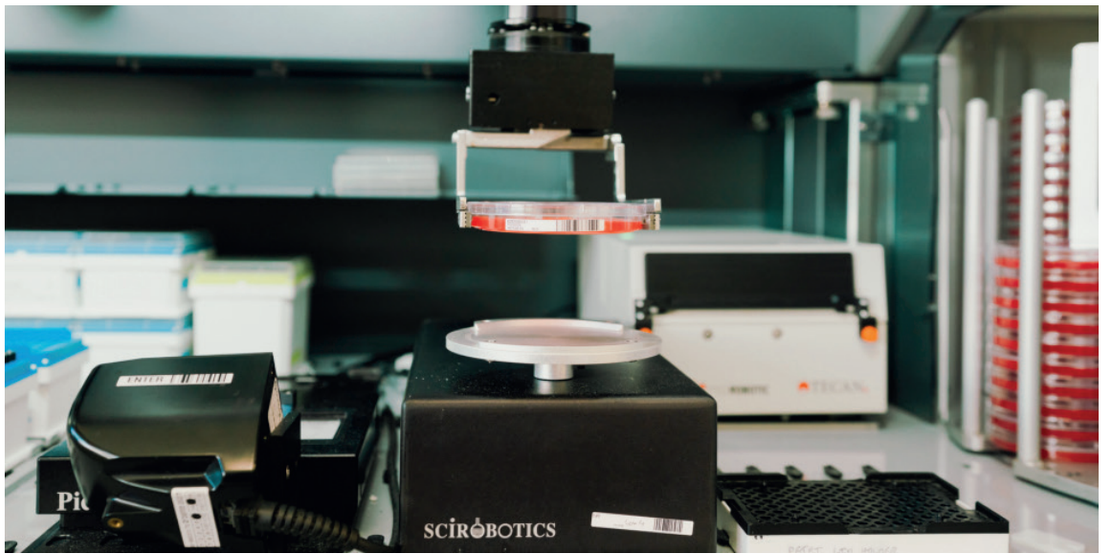
Preliminary results from the national survey provide one of the most detailed current pictures of antimicrobial resistance (AMR) on Australian pig farms. Resistance was common to several antimicrobial classes registered for use in Australian pigs, particularly tetracyclines, beta-lactams (represented by ampicillin) and trimethoprim-sulfonamides, while lower levels of resistance were detected to apramycin and florfenicol.

The good news is that resistance to antibiotics considered critically important for human health, such as fluoroquinolones, third-generation cephalosporins, colistin and carbapenems, was extremely rare or not detected at all. Where these rare resistant ***E. coli*** were found, the survey identified them as priority targets for intervention: fluoroquinolone-resistant strains ST744 and ST167, and extended-spectrum beta-lactamase (ESBL)-producing strains such as ST1629. Final analysis of the survey data is under way.

Samples were collected by veterinarians from free-range, all-in/all-out, continuous-flow and breeding operations. Alongside pig faeces, the team tested feed, water, effluent, vermin and farm environment samples to understand where resistant bacteria may enter and persist. All samples were processed within 24 hours of arrival using Murdoch University's Robotic Antimicrobial Susceptibility Platform (RASP; Figure 11), which made testing on this scale possible.

FIGURE 11

The RASP robotic platform automatically images and counts bacteria on agar plates.



TRANSFORMATIONAL PROJECT: T–103

NOVEL APPROACHES FOR COMBATTING ANTIMICROBIAL RESISTANCE IN AUSTRALIAN PIGS

PROJECT SUMMARY *continued*

In the laboratory, the lead ST744 phage reduced the target strain by 8.7 log_{10} within 48 hours. Used alone, the phage allowed resistant bacteria to regrow; combined with CEC, it prevented regrowth. A second phage showed strong activity against ESBL-producing ST1629 (Figure 12).

Twenty commensal *E. coli* candidates were screened for competitive exclusion. The leading strains grow quickly, carry no virulence or toxin genes, remain susceptible to key antimicrobials and naturally produce compounds that suppress competing *E. coli*, making them suitable partners for phage.

A 64-pig pilot trial showed that the phage survives dosing, persists in the gut and spreads between pigs, valuable traits for herd-level use. Because the phage also reached untreated pigs in adjacent pens, future trials will house control groups in fully separated rooms. A confirmatory controlled trial at Murdoch University will be followed by matched case-control trials on commercial farms.

Project outputs are expected to give producers a practical, antibiotic-free tool to clear CIA-resistant *E. coli* from their herds. Once finalised, the national baseline will also provide independent evidence that CIA resistance is rare in Australian pigs, supporting the industry's reputation for responsible antimicrobial use, public health assurance and market access.

This transformational project is a strong collaboration between Murdoch University, APRIL, Australian Pork Limited, Feedworks, JBS Pork Australia, SunPork Group, and technology partner Tecan, bringing laboratory automation, genomics and on-farm expertise together to address a problem no single organisation could solve alone.

PROJECT LEADER, SAM ABRAHAM SAID "THE CANDIDATES ARE BUILT AND THE LAB EVIDENCE IS STRONG. NOW WE PROVE IT IN PIGS, THEN ON COMMERCIAL FARMS"

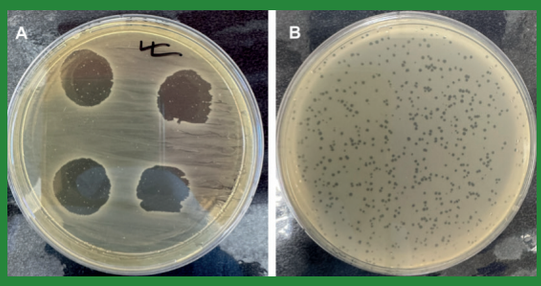


FIGURE 12

Phage killing resistant ***E. coli****. (A) Clear zones where phage killed the bacteria. (B) Each clear spot marks bacteria killed by a single phage.*

PROJECT ACHIEVEMENTS

- A national AMR survey of weaner pigs completed: 54 farms, 1,549 faecal samples and more than 6,000 *E. coli* isolates, with final analysis under way.
- Preliminary results show resistance to antibiotics critically important for human health is extremely rare or not detected.
- Confidential AMR index reports returned to every participating farm.
- A phage bank of more than 50 lytic phages, with cocktails shortlisted against the priority resistant strains.
- Twenty safe commensal *E. coli* candidates selected for competitive exclusion.
- A high-throughput robotics and genomics workflow established for large-scale AMR surveillance in pigs.
- Laboratory evidence that phage eliminates fluoroquinolone-resistant ST744 and that adding CEC stops it regrowing.
- A pilot pig trial showing the phage survives dosing, persists and spreads between pigs, with clear design improvements for the next trials.
- Outputs include a paper accepted in *Veterinary Microbiology* (Rahman et al.) and a second phage manuscript in preparation.
- PhD training through the project, including PhD candidate Mr Ashiqur Rahman.

RESEARCH REPORT INNOVATION PROJECTS

WHAT IS AN INNOVATION PROJECT?

The overall purpose of APRIL Innovation Projects is for the support of “out of the box” ideas for smart, new approaches to tackle current and emerging challenges for the Australasian pork industry.

Innovation Projects must demonstrate originality, uniqueness and creativity, establish new concepts or challenge existing ones, address significant challenges or critical barriers to progress, and be able to improve or apply new theoretical concepts, methodologies or tools that will benefit industry.

BRUKER

PROJECTS

APRIL has invested in the following Innovation Projects, with the following aims:

5A–101 REAL TIME, IN-FIELD WATER TESTING

PROJECT LEADER: DR LOUISE EDWARDS, (EX) RIDLEY AGRIPRODUCTS PTY LTD

- To determine if portable spectral-based hardware is compatible for the development of a real-time, in-field multi-parameter water testing device.

5A–102 INSECT MEAL FROM PORK PROCESSING DERIVED MATERIAL

PROJECT LEADER: DR KRISTY DIGIACOMO, THE UNIVERSITY OF MELBOURNE

- To measure the growth performance of black soldier fly larvae (BSF) on a range of pork processing waste varying in nutrient content to optimise waste substrates for BSF bioconversion.
- To measure the nutrient composition of BSF and frass fertilizer derived from pork processing waste.
- To evaluate any microbial risks associated with insect meal derived from pork processing waste.
- To evaluate any chemical risks (such as heavy metals) associated with insect meal derived from pork processing waste.

5A–103 DEVELOPMENT OF A *STREPTOCOCCUS SUIS* VACCINE VIA MEASUREMENT OF IMMUNE RESPONSES TO FOUR DIFFERENT *STREPTOCOCCUS SUIS* VACCINE PREPARATIONS, USING AN AUSTRALIAN CPS2 ST25 STRAIN

PROJECT LEADER: DR MARK O'DEA, MURDOCH UNIVERSITY (NOW DPIRD, WA)

- Produce the precursor to a vaccine combination targeting the major strains of *S. suis* associated with disease in Australia.
- Adopt serologic monitoring to better determine the effect of vaccines in a more robust manner than clinical signs alone.
- Determine the effectiveness of different bacterial inactivation methods, which have had little exploration in *S. suis* vaccine production, and which may have more effect in maintaining antigen structure and potency.

5A–104 LOW DOSE DIETARY STRATEGIES IN LATE GESTATION TO ENHANCE BORN ALIVE AND PIGLET SURVIVAL AND PERFORMANCE

PROJECT LEADER: DR JESSICA CRAIG, RIVALEA (AUSTRALIA) PTY LTD

- To evaluate the effects of supplementation of 0.5% arginine and three novel feed additives, B-hydroxy ß-methyl butyrate (HMB), N-Carbamylglutamate (NCG), and Calcium nitrate, on litter characteristics at birth when fed from day 90 of gestation.
- To assess each treatment for piglet vitality, number of still born, number born alive and weaned as well as subsequent reproductive performance of all sows.
- Provide the industry with effective strategies for improving the efficiency of reproduction and progeny performance.

5A–105 ORAL MEANS OF INCREASING ENDOGENOUS GROWTH HORMONE LEVELS AND ENHANCING THE PERFORMANCE AND CARCASS CHARACTERISTICS OF GROWING PIGS

PROJECT LEADER: DR FAN LIU, RIVALEA (AUSTRALIA) PTY LTD

- Validate the effects of NCG and HMB supplementation at two levels (0.15% and 0.3%) when fed to finisher pigs from live weight 60–100 kg for feed intake, growth rate and feed efficiency.
- Validate the effects of NCG and HMB supplementation to enhance commercial carcass traits (carcass weight, dressing percentage, loin muscle depth and back fat thickness) and IGF-1 secretion.
- Determine whether NCG is more potent than feeding arginine itself in increasing blood arginine concentration by measuring arginine plasma levels in control; 1% arginine supplementation and the NCG treatments.
- Determine for treatments that significantly alter either increased growth, feed efficiency, loin eye depth or reduced backfat thickness the magnitude of change in plasma amino acid profiles, and urea nitrogen.

5A–107 USING ALGAL EXTRACTS TO IMPROVE WEANER GROWTH PERFORMANCE AND DIGESTIBILITY

PROJECT LEADER: ROBERT PARKES, RIDLEY AGRIPRODUCTS PTY LTD

- Analyse the effect of supplementing weaner pig diets with different algal extracts on:

  1. Growth, feed efficiency and rate of digestion.
  2. The incidence of diarrhoea.
  3. The change in gut microbial populations and inflammation response markers, when compared to conventional weaner pig diets.

5A–108 WHAT SENSORY ATTRIBUTES ARE MOST CRITICAL FOR CONSUMER EVALUATION WITHIN AN AUSTRALIAN PORK EATING QUALITY PROGRAM?

PROJECT LEADER: PROFESSOR FRANK DUNSHEA, THE UNIVERSITY OF MELBOURNE

- Investigate what are the most critical sensory attributes influencing acceptability (overall liking) of Australian pork with Australian consumers.
- Identify what attributes should be used within an Australian pork eating quality program.
- Assess the effectiveness of the Check all that apply (CATA) rapid sensory method for discriminating sensory properties between six different Australian pork products.

5A–109 INVESTIGATING THE IMPACT OF CIRCULATING CREATINE CONCENTRATIONS IN GESTATION ON VITALITY AND SURVIVABILITY OF LOW BIRTH WEIGHT PIGLETS

PROJECT LEADER: DR TANYA NOWLAND, SARDI

In human pregnancies, maternal creatine levels correlate positively with foetal growth, with low levels linked to foetal growth restriction and reduced birthweight, due primarily to

impaired placental blood flow and metabolism. Previously, it has been demonstrated that supplementing sows with creatine or guanidinoacetic acid (GAA) in late gestation improved piglet viability, particularly when birthweight is below 1.1 kg. This project will determine the relationship between circulating creatine concentrations in pregnant sows and piglet birthweight and survival. The impact of increasing circulating creatine by dietary strategies on piglet birthweight, within litter variation in birthweight and piglet survival, will also be established.

5A–110 REAL TIME DETECTION OF DEEP TISSUE ABSCESSES IN CARCASES USING LEAN MEAT YIELD ESTIMATION

PROJECT LEADER: DR DARRYL D'SOUZA, CHM ALLIANCE PTY LTD (SUNPORK)

APRIL agreed to a request from the Lead Party to cancel this project in 2022 due to technical issues preventing the project from proceeding.

5A–111 ESCAPING THE DAILY GRIND – COARSER GROUND DIETS FOR IMPROVED FOETAL GROWTH

PROJECT LEADER: DR KATE PLUSH, CHM ALLIANCE PTY LTD (SUNPORK)

Diets are processed into fine particle sizes to increase digestibility. This is especially important for the growing pig where feed conversion ratio drives profitability, and in lactating sows where high dietary energy is required for milk production. However, there is a paucity of information on the impact of particle size in gestating sow diets. A coarser grind size will enhance hind gut fermentation, a process which involves the production of butyrate. The impact of increased circulating butyrate concentrations in sows is unknown, but in rats it has been shown to improve foetal growth. This experiment has been designed to determine if a coarser grind size fed to sows throughout gestation improves foetal growth, improving piglet weight and reducing variation at birth.

5A–112 NOVEL ASPIRIN SUPPLEMENTATION DURING GESTATION TO IMPROVE FARROWING RATE AND PIGLET BIRTH WEIGHT OF SOWS MATED IN SUMMER

PROJECT LEADER: DR FAN LIU, RIVALEA (AUSTRALIA) PTY LTD

Sows mated in summer have an increased abortion rate and produce an increased percentage of born-light piglets (≤1.1 kg), which compromises the efficiency of the pig industry and affects supply and market compliance. We propose to trial the supplementation of a low-dose of aspirin (240 ppm; sodium salicylate), a pharmaceutical intervention commonly used for improving conception and foetal development in humans, during the first 80 days of gestation as a strategy to improve farrowing rate and piglet birth weight of multiparous sows mated in summer. If effective, aspirin supplementation could be developed as an economical intervention to alleviate summer infertility and improve piglet birth weight for the pig industry.

5A–113 BRAIN MEASURES OF POSITIVE WELFARE IN PIGS

PROJECT LEADER: PROFESSOR ALAN TILBROOK, THE UNIVERSITY OF QUEENSLAND

"Quality of life" is a central concept in the welfare of production animals. To determine an animal's quality of life, we must understand how the animal's brain processes life experiences. This project is the first attempt to identify objective indicators of brain function in pigs. The project will contribute to the assessment and improvement of pig welfare by providing quantitative biological measures (biomarkers) of brain function during positive and negative experiences. The project will enable development of non-invasive biomarkers, which the Australasian pork industry can use to inform day-to-day management decisions and continuously improve the welfare of pigs.

PROJECT 5A–114 SMART SENSORS FOR ANIMAL WELFARE MONITORING

PROJECT LEADER: ASSOCIATE PROFESSOR ABEL SANTOS, THE UNIVERSITY OF ADELAIDE

This project builds on the findings of APRIL project A1–106 *A lab on a chip for real time pain and animal welfare biomarker measurement,* which successfully developed multiplexed, cheap, portable on-chip sensing technologies to rapidly detect and assess multiple pain and welfare biomarkers in pigs. The technology enables high-throughput label-free detection, quantification, and molecular fingerprinting of biomarkers in biological samples.

The objective of this project is to verify and assess measures from manufactured plasmonic chips relative to previously analysed samples obtained from pigs by the South Australian Research and Development Institute. This will permit optimisation of concentrations of relevant biomarkers of pain and welfare in pigs.

Objective quantification of relevant biomarkers in biological fluids reflecting welfare states is central to improving animal health and welfare standards. Such information has potential to provide the industry with an evidence-informed, decision-making approach for safe, economical, rational, and sustainable assessment of physiological and affective states in pigs related to pain and welfare.

PROJECT 5A–115 IMPROVING THE FERTILITY OF EXTENDED SEMEN

PROJECT LEADER: ASSOCIATE PROFESSOR MARK NOTTLE, THE UNIVERSITY OF ADELAIDE

Artificial insemination (AI) is used in more than 90% of the Australian pig herd. Successful AI involves the collection of semen which is then diluted with extender to produce multiple doses which is then used for up to 5 days. However, AI pregnancy rates are generally lower than natural mating. This is because semen extenders are relatively simple and do not mimic seminal plasma or the female reproductive tract, where sperm undergo their final maturation.

The aim of the present study is to improve boar sperm function by adding factors found in semen back to commercial extenders.

The project is measuring a range of sperm parameters for up to 5 days after collection to mimic the use of extended semen commercially. The more promising factors will then be examined *in vitro* to determine effects on fertilisation and embryo development. Those that show an effect will then be examined in small scale insemination studies, before progressing to larger on-farm trials.

Part of this work was undertaken by Ms Kaitlin Beltakis, an Honours Student at The University of Adelaide, who was awarded an APRIL Honours Scholarship.

PROJECT 5A–116 HEATING UP THE HOUSE: EVALUATING THE EFFECT OF NOVEL MONITORING AND HEATING SYSTEMS ON THE PRODUCTIVITY, WELFARE AND ECONOMICS OF FARROWING HOUSES

PROJECT LEADER: DR MARIA JORQUERA-CHAVEZ, RIVALEA (AUSTRALIA) PTY LTD

Investigation of novel ways to allow real time monitoring of pigs and innovative sustainable heating sources are required to ensure pork production systems are future proof. This project will further investigate the use of thermal imagery technology and FarrowCam (real time monitoring of farrowing) to evaluate health and welfare of sows and survival of piglets. These technologies will be implemented and tested in a project investigating the impact heat lamps have on the thermal comfort of sows and piglets, comparing the overall performance of the conventional heat lamps that are widely used in Australian piggeries, and two new heating-source options (ANIHEATER® and Hog Hearth® Heat Mats).

Due to the positive results reported in several countries, these two new heating methods are expected to provide better thermal conditions for piglets and sows, and to have a lower cost of maintenance than the conventional heat-lamps. This project will provide pork producers with detailed information about novel monitoring devices and more cost-effective heating-sources to be used in farrowing houses, ensuring increased productivity and sustainability.

PROJECT 5A–117 USE OF AN INHIBIN VACCINE TO INCREASE LITTER SIZE IN PIGS

PROJECT LEADER: PROFESSOR PAUL VERMA [AFFILIATE PROFESSOR (THE UNIVERSITY OF ADELAIDE) AND SCIENCE PROGRAM LEADER – PIGS AND POULTRY (SARDI)]

Average litter sizes born in Australia remain lower than those observed in other pork-producing countries, largely as a consequence of restrictions associated with germplasm importation. One method with demonstrated litter size increase in other species, such as sheep, is vaccination against inhibin. Attenuation of the biological activity of inhibin, that regulates the production of follicle stimulating hormone (FSH), leads to an increase in circulating FSH and, consequently, the ovulation rate.

Studies conducted previously in gilts reported marked improvements in reproductive performance following vaccination against inhibin. This project proposes to extend these preliminary results and further assess the efficacy of inhibin vaccination on aspects of reproductive outcomes, thereby offering a possible means to increase fecundity in the herd.

PROJECT 5A–118 UNDERSTANDING THE IMPACT OF CLIMATE ON THE BOAR AND PROGENY THROUGH SPERM NON-CODING RNA

PROJECT LEADER: DR JEREMY COTTRELL, THE UNIVERSITY OF MELBOURNE

The expression of sperm small-noncoding RNAs (sncRNAs) is influenced by the environment. It is hypothesised that challenging events, such as seasonal heat stress, can influence sperm sncRNAs to compromise reproductive and progeny performance. Measurement of sncRNAs could potentially provide a useful selection tool for reducing the seasonality of reproductive performance.

This project will quantify seasonal variation in sperm sncRNAs between high genetic merit boars from a commercial nucleus facility in the summer and cooler months against progeny performance from single-sire matings. The anticipated outcomes of this project will be improved reproductive and progeny performance of the Australian pork industry.

PROJECT 5A–119 PLACENTOPHAGIA: INVESTIGATING ITS EFFECT ON SOW AND PIGLET PERFORMANCE IN CONFINED AND LOOSE HOUSING SYSTEMS

PROJECT LEADER: DR LAUREN HEMSWORTH, THE UNIVERSITY OF MELBOURNE

Placentophagia is a behaviour observed in most female terrestrial eutherian mammals, consisting of the ingestion of some or all of the placental components expelled during parturition. Although sows will consume the placenta if given the opportunity, intensive pig production systems often prevent ingestion of afterbirth due to either its removal following parturition or confinement housing systems that prevent the sow from accessing it.

The relevant literature suggests that ingestion of the placenta may provide a range of benefits for both the sow and her piglet, via endocrine, analgesic and (or) nutritional effects. These benefits may include greater maternal behaviour through increased sow-piglet interactions, improved postpartum sow recovery, increased milk production and piglet growth and survival. The proposed discovery study aims to better understand the incidence and impacts of placentophagia in pigs.

PROJECT 5A–120 NUTRITIONAL STRATEGIES TO INCREASE INTRAMUSCULAR FAT

PROJECT LEADER: PROFESSOR FRANK DUNSHEA, THE UNIVERSITY OF MELBOURNE

Selection for reduced fatness has inadvertently resulted in Australian pork having a very low concentration of intramuscular fat (IMF), with possible negative implications for pork eating quality. A meta-analysis identified that

collagen concentration is negatively related to beef eating quality, and further work from this laboratory has also shown that collagen content is negatively related to objective pork tenderness, particularly in leg muscles.

Previous work supported by the Pork CRC demonstrated that dietary inulin, a polysaccharide (fructan) from chicory, increased visible marbling, whilst lecithin (glycerophospholipids) decreased collagen concentrations in loins from pork. The loin has similar IMF but lower collagen than leg muscles, hence, this project will use these two dietary strategies to improve the eating quality of a pork.

PROJECT 5A–121 AUTOMATIC ADJUSTMENT OF GESTATING SOW LIVE WEIGHT

PROJECT LEADER: DR DAVID CADOGAN, FEEDWORKS PTY LTD

The innovation in this project will be to use newly-developed software to automatically optimise sow weight during gestation depending on their parity and genotype, which will be conducted by using the ideal weight range set by the PIC genetic company. The optimisation of body weight is predicted to produce 1 pig per sow per year and improve number of sows retained in the herd by 10%.

5A–122 CAN THE PROVISION OF SILAGE AT WEANING IMPROVE SOW WELFARE AND SUBSEQUENT REPRODUCTION?

PROJECT LEADER: DR LAUREN STAVELEY, CHM ALLIANCE PTY LTD / SUNPORK FARMS

Weaning is arguably a stressful period for a sow, as not only is she separated from her piglets but is also mixed with numerous other sows in a new environment and fed a new diet, with feed intake often limited.

A potential strategy to lessen the negative welfare implications weaning can have on sows is to provide enrichment. This not only provides distraction but also induces satiety, which is proven to reduce aggression in gestating sows. Studies have shown that increased glucose and roughage offered prior to mating can have positive effects on reproductive outcomes. This project aims to identify if the provision of silage offered to sows at weaning improves both welfare and productive outcomes.

5A–123 MUM ISN'T HOME: IDENTIFYING GAPS IN KNOWLEDGE IN CREEP FEEDING AND DEVELOPING NOVEL SOLUTIONS TO IMPROVE POST-WEANING ADJUSTMENT IN PIGLETS

PROJECT LEADER: DR MARIA JORQUERA-CHAVEZ, RIVALEA (AUSTRALIA) PTY LTD

For pigs in commercial conditions, the abrupt weaning process not only involves the mother-piglet separation, but also a profound modification of piglets' feeding, feeding habits, environment, and social interactions. This complex period leads to stressful changes for piglets, becoming a great concern for producers and researchers. This project aims to investigate strategies to improve piglets' performance and wellbeing around weaning. This project will investigate (i) the main scientific gaps about the role that creep feeding has in the performance of piglets around weaning transition and its effect in their lifetime performance; and (ii) whether factors such as the characteristics of the creep feeding, the impacts of weaning age and parity, the farrowing environment (pen type etc.), and the time/frequency they offered to young piglets impact their survival and growth rate around weaning.

Ultimately, this project proposes an investigation about novel and inexpensive creep feeding techniques that could facilitate the learning process in piglets, which would consequently trigger eating behaviours that promote growth, reduce piglets' stress and improve their survival during the weaning transition. This would not only improve weaners' welfare, but also the productivity of piggeries. This project will provide science-based, industry-relevant information that could assist the management around weaning transition.

5A–124 POSTNATAL STRATEGIES TO INCREASE MYOFIBRE PROLIFERATION FOR IMPROVING LEAN TISSUE DEPOSITION

PROJECT LEADER: DR FAN LIU, RIVALEA (AUSTRALIA) PTY LTD

Lean meat deposition is positively related with the total myofibre number of pigs. Challenging the classical theory that the myofiber number is fixed by late gestation, some studies showed the myofibre number increases with the proliferations of tertiary myofibre during the first four weeks after birth, implying a novel time window for interventions. We propose to investigate the effects of two oral strategies during the suckling phase to increase myofibre number postnatally. The successful strategy may improve the muscle deposition rate of pigs with positive implications to lean growth, feed efficiency, carcass value, and meat quality.

5A–125 IMPROVING THE FERTILITY OF EXTENDED PIG SPERM

PROJECT LEADER: ASSOCIATE PROFESSOR MARK NOTTLE, THE UNIVERSITY OF ADELAIDE

Artificial insemination (AI) is used in more than 90% of the Australian pig herd. AI involves the collection of semen which is then diluted with extender to produce multiple doses which is then used for up to 5 days. However, AI pregnancy rates are generally lower than natural mating. This is because semen extenders are relatively simple and do not include factors in seminal plasma which are thought to be important in sperm function (motility) and quality. We have recently shown that certain factors found in the female reproductive tract and in seminal fluid, can markedly improve the fertility of extended pig sperm. We have also shown that these increases improve embryo development following in vitro fertilisation. This is the first time to our knowledge that treated sperm has been shown to improve embryo development, providing a novel approach for improving the fertility of extended semen. The aim of the present study is to determine whether the factor under investigation can improve the fertility of extended pig semen.

5A–126 A NOVEL APPROACH FOR AN IMPROVED MYCOPLASMA HYOPNEUMONIAE VACCINE

PROJECT LEADER: ASSOCIATE PROFESSOR FARHID HEMMATZADEH, THE UNIVERSITY OF ADELAIDE

Pigs in Australia continue to suffer from enzootic pneumonia, despite vaccination and antibiotic therapy.

Mycoplasma hyopneumoniae (MHP) has been detected in more than 75% of enzootic pneumonia cases.

The aim of this project is to develop an effective, commercialisation-ready, improved vaccine using a cell culture-based system.

5A–127 COMBATING OEDEMA DISEASE IN AUSTRALIAN PIGS: INVESTIGATING HOST SUSCEPTIBILITY AND ASSESSING VACCINE POTENTIAL OF GUT-ADAPTED E.COLI CLONES

PROJECT LEADER: PROFESSOR SAM ABRAHAM, MURDOCH UNIVERSITY

The proposal aims to combat oedema disease in Australian pigs by investigating host susceptibility and assessing vaccine potential of gut-adapted E. coli clones.

5A–128 EVALUATION OF AN ORAL FLUID-BASED ROBOTIC DIAGNOSTIC AND PROGNOSTIC APPROACH AIMED AT DEVELOPING ARTIFICIAL INTELLIGENCE (AI)- GUIDED INNOVATIVE HEALTH MONITORING STRATEGIES IN PIGS

PROJECT LEADER: DR JASIM UDDIN, MURDOCH UNIVERSITY

This project aims to develop and validate an ELISA panel using a rapid, high-throughput robotic platform to detect disease-specific immune responses and general health indicator biomarkers in pigs through pen-based oral fluid samples collected via cotton ropes.

5A–129 TARGETING THE INTRA-FOLLICULAR ENVIRONMENT TO IMPROVE OOCYTE QUALITY AND EMBRYO DEVELOPMENT

PROJECT LEADER: DR JAMEE DALY, THE UNIVERSITY OF ADELAIDE

Over the last decade, the reproductive efficiency of the Australian Pork industry has improved substantially. So much so, that to push our efficiencies further and rival those in major pig producing countries, we need more targeted protocols to fine tune reproduction. Specifically, targeting the narrow weaning-to-mating interval to improve reproductive rate, through improved oocyte quality, embryo viability and uterine receptivity. Supplementation of compounds that will optimise the follicular fluid environment directly impact the number of total born piglets. Identifying differences in follicular fluid composition between high and low producing sows, and supplementation with these identified compounds will enhance reproductive output.

5A–130 IR PROTOCOL FOR MYCOTOXIN RISK MANAGEMENT IN FEED

PROJECT LEADER: DR MARTA NAVARRO, THE UNIVERSITY OF QUEENSLAND

This innovation project serves as a proof-of-concept to demonstrate that Infrared (IR) technology can rapidly detect mycotoxins in grains on-farm. Wheat and sorghum and key mycotoxins such as zearalenone, fumonisins, and DON will be used to validate IR spectroscopy. Success will enable commercialisation, integrating chemometric models into a user-friendly traffic-light system for real-time risk assessment. Portable IR devices will undergo field validation, allowing on-site monitoring to reduce feed-related losses, improve productivity, and support sustainability.

5A–131 RETHINKING PIGLET CREEP FEEDER DESIGN TO MEET ENRICHMENT DEFINITIONS

PROJECT LEADER: JAMES LANGLEY, CHM ALLIANCE PTY LTD

This project aims to create a novel creep feed delivery system, utilizing a piglet's natural motivation to forage and root. A delivery system that allows and encourages natural behaviours may result in an increase in creep feed intake, resulting in healthier piglets at weaning, improved post-weaning performance, and improved welfare. If successful, this innovation could replace traditional creep feeders within farrowing accommodation and encourage creep feed intake through the piglet's natural expression of these exploratory behaviours.

5A–132 EARLY DETECTION OF APP OUTBREAK IN PIGS HOUSED IN LARGE GROUPS USING COMPUTER VISION TECHNOLOGY

PROJECT LEADER: DR FAN LIU, JBS PORK AUSTRALIA PTY LTD

Actinobacillus Pleuropneumonia (APP) is a main respiratory disease that causes grower/finisher pig losses in Australia. The short incubation time of this bacteria and large group size of pigs to be monitored (e.g., 100 pigs in a pen) pose challenges to a timely administration of antibiotics during an outbreak. Early detection of the APP infection and timely antibiotics administration can reduce mortality and shorten medication duration.

Computer vision-based disease alerts may make earlier and more reliable predictions for APP outbreaks. This project aims to develop a computer vision-based algorithm for predicting APP outbreaks on a pen basis using behavioural features of pigs housed in a large group.

5A–133 USE OF AN INHIBIN VACCINE TO INCREASE OVULATION RATE IN PIGS

PROJECT LEADER: PROFESSOR PAUL VERMA, THE UNIVERSITY OF ADELAIDE

The average litter size in Australia is 11.20 with limited increase seen over time due to restrictions with germplasm import to Australia. One method with demonstrated improvements in litter size in mammals is vaccination against inhibin. Inhibin is a hormone, that regulates the production of follicle stimulating hormone (FSH), attenuation of biological activity of which, leads to an increase in circulating FSH and consequentially ovulation rate. Therefore, vaccination against inhibin should lead to increased fecundity. Preliminary pig studies overseas reported ~35% increase in ovulation and in-utero development rates, however a previous study undertaken by this group using porcine inhibin didn't validate the studies mentioned, likely the result of an inadequate response to vaccination. We aim to immunise with bovine inhibin in this study to overcome the barrier posed by -self-recognition by the immune system, and assess impact on ovulation rate.

5A–134 SALT ENRICHMENT BLOCKS FOR LACTATING SOWS

PROJECT LEADER: DR LAUREN STAVELEY, CHM ALLIANCE PTY LTD

This study explores the role of oxytocin in fluid balance regulation and its potential benefits for periparturient sows through voluntary salt intake. Providing a salt lick block during farrowing may stimulate oxytocin release, enhancing muscle contractions for farrowing, milk letdown, and prolonged colostrogenesis. Increased colostrum availability could improve piglet immunity and survival rates. Additionally, salt blocks may offer enrichment, fulfilling sows' natural salt cravings while supporting welfare.

5A–135 DEVELOPMENT OF A "SPINYCTERIN" VACCINE AGAINST ROTAVIRUS A

PROJECT LEADER: DR GEMMA ZERNA, LA TROBE UNIVERSITY

Rotaviruses (RV) are a significant cause of diarrhea in Australian piglets, leading to reduced growth rates and increased mortality. The severity of disease depends on the RV genotype, which includes A, B, and C types, with diverse G and P groups. This genetic diversity and potential for recombination pose challenges for vaccine development. However, recent sequencing of Australian RV genotypes provides a foundation for a multi-epitope consensus vaccine. This project focuses on developing a vaccine targeting RV A, incorporating unique and conserved epitopes across G and P groups. Using our innovative "Spinycterin" platform, this vaccine aims to enhance piglet health, reduce production losses, and boost sustainability in the pork industry.

5A–136 EFFECTS OF FEEDING AMMONIUM CHLORIDE TO SOWS ON PIGLET GROWTH AND SURVIVAL

PROJECT LEADER: ASSOCIATE PROFESSOR KIRO PETROVSKI, THE UNIVERSITY OF ADELAIDE

High stillbirth and pre-weaning piglet mortality rates strongly correlate with prolonged farrowing durations and higher parity sows. Prolonged farrowing often occurs in older sows, likely a consequence of impaired uterine muscle contractility from a lower blood calcium content. This project aims to investigate the effects of an ammonium chloride (NH_4Cl) supplement in late pregnancy sow diets on farrowing duration and piglet performance.

Expected outcomes include improved colostrum quality and milk yield, decreased farrowing duration with reduced stillbirths, and increased piglet survival and growth.

5A–137 OPTIMISING WATER INTAKE IN WEANER PIGS FOR EFFECTIVE IN-WATER MEDICATION DELIVERY

PROJECT LEADER: DR MARTA NAVARRO, THE UNIVERSITY OF QUEENSLAND

This project aims to enhance the palatability of medicated water for post-weaning piglets using a systematic double-choice approach. Many therapeutic drugs and solubilising agents have aversive taste properties, leading to inconsistent intake and compromised treatment efficacy. By testing a range of flavouring solutions—including pH adjusters, bitter blockers, and palatability enhancers—we seek to improve acceptance and ensure reliable medication consumption. This approach enables precise dosing, optimises therapeutic outcomes, and supports piglet health and welfare. Findings from this study will provide evidence-based strategies for improving oral medication delivery in pig production systems.

5A–138 UNLOCKING THE NUTRITIONAL VALUE OF AUSTRALIAN CANOLA SEED AND WHOLE SOYBEANS IN PIG DIETS

PROJECT LEADER: PROFESSOR EUGENI ROURA, THE UNIVERSITY OF QUEENSLAND

The Australian pork industry has a high reliability on imported soybean meal (SBM). Retailers are calling for a sustainable source of soybean in pig feeds that does not contribute to deforestation and/or greenhouse gas (GHG) emissions. Locally produced canola and soybean offer a potentially viable alternative but whole seeds fail to meet digestibility requirements in pigs. This project aims to develop novel cost-effective processing strategies that will unlock the nutritional value of locally produced canola/soybean seeds facilitating their use in pig feed formulations.

5A–139 MECHANISMS OF METHANE INHIBITION BY LOW-COST ADDITIVES IN PIGGERY EFFLUENT

PROJECT LEADER: CASSANDRA GEORGE, CHM ALLIANCE PTY LTD (SUNPORK)

This project aims to conduct novel research to clarify underlying mechanisms important for optimising additives for abatement of methane from piggery effluent and to develop novel tailored additives and dosing strategies to maximise abatement. The project data will also support future amendments to carbon credit legislation.

5A–140 DEVELOPMENT OF A TISSUE CULTURE FOR SCREENING A. PLEUROPNEUMONIAE VACCINE CANDIDATES

PROJECT LEADER: DR CONNY TURNI, UNIVERSITY OF QUEENSLAND

Actinobacillus pleuropneumoniae remains a significant burden in the pig industry, making effective vaccine development a priority. Current approaches are costly and rely on limited early-stage testing, while existing in vivo models, such as mice, are unsuitable for this host-specific pathogen. This project addresses the gap by developing a physiologically relevant ex vitro model using primary porcine bronchial epithelial cells cultured at an air–liquid interface. This system will enable efficient preliminary screening of vaccine candidates.

5A–141 DECODING PORCINE ROTAVIRUS CO-INFECTION DYNAMICS IN NEONATAL AND POST-WEANING DIARRHEA IN PIGS

PROJECT LEADER: DR JASIM UDDIN, MURDOCH UNIVERSITY

Neonatal (scours) and post-weaning diarrhea (PWD) are major health challenges in pig production worldwide,arising from complex interactions among pathogens, host, and environmental factors. Although bacteria,particularly *Escherichia coli*, are traditionally considered primary causative agents, they are not detected in a significant (>30%) proportion of diarrhea cases, warranting investigation beyond the current understanding. Despite increasing research in recent years on viral pathogens, particularly rotavirus, as contributors to piglets cours and PWD, studies in Australia remain limited. This project aims to elucidate bacterial–viral co-infection dynamics in diarrhea in piglets and weaners to improve health outcomes, inform rotavirus control and vaccine strategies, and support antimicrobial stewardship.

5A–142 PROOF-OF-CONCEPT: SEMI-SUPERVISED AI FOR BEHAVIOUR DISCOVERY AROUND FARROWING

PROJECT LEADER: DR BRYONY TUCKER, ADELAIDE UNIVERSITY

This proof of concept project will develop a machine learning system that automatically discovers and classifies sow behavioural patterns in standard farrowing crates using semi supervised video analysis.

5A–143 WEIGHTWISE: CAMERA-POWERED LIVEWEIGHT PREDICTION FOR SMARTER SORTING

PROJECT LEADER: DR JESSICA CRAIG, JBS PORK AUSTRALIA PTY LTD

This project will use existing on-farm CCTV footage to develop and validate computer-vision algorithms that predict pig liveweight at sale, enabling more accurate drafting and sorting in large-group pens.

5A–144 RIGHTON SILO: GETTING THE RIGHT FEED TO THE RIGHT SILO – RFID DIGITAL “HANDSHAKE” SYSTEM INDUSTRY DEMONSTRATION

PROJECT LEADER: DR JESSICA CRAIG, JBS PORK AUSTRALIA PTY LTD

This project will develop and demonstrate an RFID “digital handshake” that prevents incorrect feed deliveries by enabling unloading only when the truck/load is authorised for the target silo.

5A–145 INSIGHT IN THE QUALITY OF LIFE OF PIGS

PROJECT LEADER: PROFESSOR DOMINIQUE BLACHE, UNIVERSITY OF WA

This project aims to test whether a spectroscopic methodology on different media can be used to identify welfare states in pigs. The project will contribute to the assessment and improvement of pig welfare by providing a quantitative biological measure of brain activity during positive and negative experiences. The project will enable the development of non-invasive tools that the Australian pork industry can use to inform day-to-day management decisions and continuously improve the welfare of pigs.

5A–146 FINE TUNE DIETARY IODINE LEVELS FOR WEANER PIGS

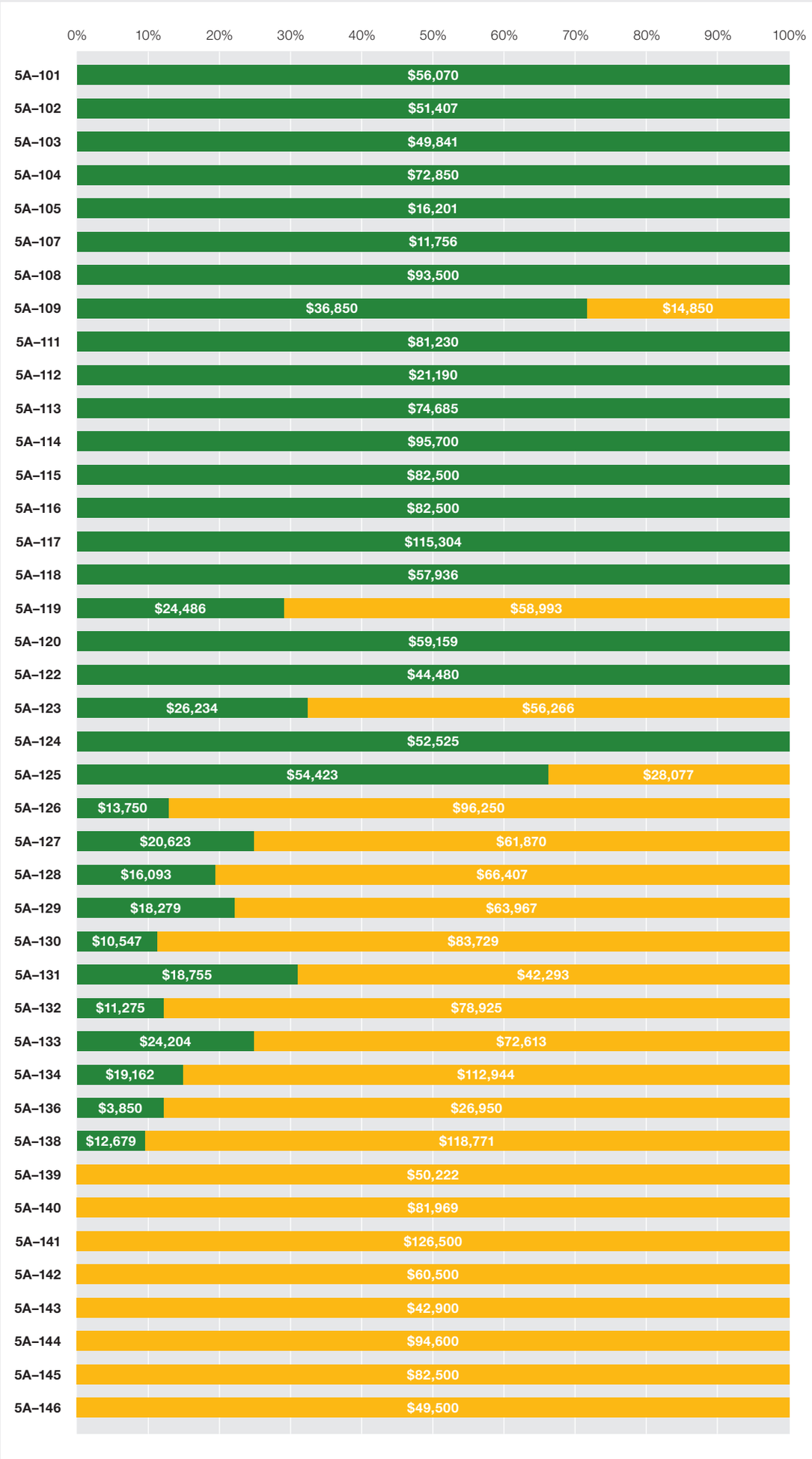
PROJECT LEADER: DR FAN LIU, JBS PORK AUSTRALIA PTY LTD

The aim of this project is to further finetune the iodine concentration for weaner pigs to optimise iodine level and serve as a cost-effective nutritional strategy to improve weaner and life-time performance.

NO.	PROJECT NAME	LEAD PARTY
5A–101	Real time, in-field water testing	Ridley Agriproducts Pty Ltd
5A–102	Insect meal from pork processing derived material	The University of Melbourne
5A–103	Development of a *Streptococcus suis* vaccine via measurement of immune responses to four different *Streptococcus suis* vaccine preparations, using an Australian cps2 ST25.strain	Murdoch University
5A–104	Low dose dietary strategies in late gestation to enhance born alive and piglet survival and performance	Rivalea (Australia) Pty Ltd
5A–105	Oral means of increasing endogenous GH levels and enhancing the performance and carcass characteristics of growing pigs	Rivalea (Australia) Pty Ltd
5A–107	Using algal extracts to improve weaner growth performance and digestibility	Ridley Agriproducts Pty Ltd
5A–108	What sensory attributes are most critical for consumer evaluation within an Australian Pork eating quality program?	The University of Melbourne
5A–109	Investigating the impact of circulating creatine concentrations in gestation on vitality and survivability of low birth weight piglets	SARDI
5A–110	Real time detection of deep tissue abscesses in carcases using lean meat yield estimation	CHM Alliance Pty Ltd (SunPork Solutions)
5A–111	Escaping the daily grind – coarser ground diets for improved foetal growth	CHM Alliance Pty Ltd (SunPork Solutions)
5A–112	Novel aspirin supplementation during gestation to improve farrowing rate and piglet birth weight of sows mated in summer	Rivalea (Australia) Pty Ltd
5A–113	Brain measures of positive welfare in pigs	The University of Queensland
5A–114	Smart Sensors for Animal Welfare Monitoring	The University of Adelaide
5A–115	Improving the fertility of extended semen	The University of Adelaide
5A–116	Heating up the house: Evaluating the effect of novel heating and monitoring systems on the productivity, welfare and economics of farrowing houses	Rivalea (Australia) Pty Ltd
5A–117	The use of inhibin vaccine to increase litter size in pigs	The University of Adelaide
5A–118	Understanding the impact of climate on the boar and progeny through sperm non-coding RNA	The University of Melbourne
5A–119	Placentophagia: investigating its effect on sow and piglet performance in confined and loose housing systems	The University of Melbourne
5A–120	Nutritional strategies to increase intramuscular fat.	The University of Melbourne
5A–121	Automatic adjustment of gestating sow live weight	Feedworks Pty Ltd
5A–122	Can the provision of silage at weaning improve sow welfare and subsequent reproduction?	CHM Alliance Pty Ltd (SunPork Solutions)
5A–123	Mum isn't home: Using sows' vocalisations and artificial-sound stimuli as novel strategies to improve post-weaning adjustment in piglets	Rivalea (Australia) Pty Ltd
5A–124	Postnatal strategies to increase myofibre proliferation for improving lean tissue deposition	Rivalea (Australia) Pty Ltd

NO.	PROJECT NAME	LEAD PARTY
5A–125	Improving the fertility of extended pig sperm	The University of Adelaide
5A–126	A Novel Approach for an Improved Mycoplasma hyopneumoniae Vaccine	The University of Adelaide
5A–127	Combating Oedema Disease in Australian Pigs: Investigating Host Susceptibility and Assessing Vaccine Potential of Gut-Adapted E.coli Clones	Murdoch University
5A–128	Evaluation of an Oral Fluid-based Robotic Diagnostic and Prognostic Approach Aimed at Developing Artificial Intelligence (AI)- guided Innovative Health Monitoring Strategies in Pigs	Murdoch University
5A–129	Targeting the intra-follicular environment to improve oocyte quality and embryo development	The University of Adelaide
5A–130	IR protocol for mycotoxin risk management in feed	The University of Queensland
5A–131	Rethinking piglet creep feeder design to meet enrichment definitions	CHM Alliance Pty Ltd
5A–132	Early detection of APP outbreak in pigs housed in large groups using computer vision technology	JBS Pork Australia Pty Ltd
5A–133	Use of an inhibin vaccine to increase ovulation rate in pigs	The University of Adelaide
5A–134	Salt enrichment blocks for lactating sows	CHM Alliance Pty Ltd
5A–135	Development of a “Spinycterin” vaccine against Rotavirus A	La Trobe University
5A–136	Effects of feeding ammonium chloride to sows on piglet growth and survival	The University of Adelaide
5A–137	Optimising water intake in weaner pigs for effective in-water medication delivery.	The University of Queensland
5A–138	Unlocking the nutritional value of Australian canola seed and whole soybeans in pig diets	The University of Queensland
5A–139	Mechanisms of methane inhibition by low-cost additives in piggery effluent	CHM Alliance Pty Ltd
5A–140	Development of a tissue culture for screening A. pleuropneumoniae vaccine candidates	University of Queensland
5A–141	Decoding Porcine Rotavirus Co-infection Dynamics in Neonatal and Post-Weaning Diarrhea in Pigs	Murdoch University
5A–142	Proof-of-Concept: Semi-Supervised AI for Behaviour Discovery around farrowing	Adelaide University
5A–143	WeightWise: Camera-powered liveweight prediction for smarter sorting	JBS Pork Australia Pty Ltd
5A–144	RightOn Silo: Getting the right feed to the right silo – RFID digital “handshake” system industry demonstration	JBS Pork Australia Pty Ltd
5A–145	Insight in the quality of life of pigs	University of WA
5A–146	Fine tune dietary iodine levels for weaner pigs	JBS Pork Australia Pty Ltd

APRIL INNOVATION PROJECT COMMITMENTS



FEATURE PROJECT: 5A–108

WHAT SENSORY ATTRIBUTES ARE MOST CRITICAL FOR CONSUMER EVALUATION WITHIN AN AUSTRALIAN PORK EATING QUALITY PROGRAM

PROJECT LEADER:
Professor Frank Dunshea

PROJECT PARTICIPANTS:
Frank R. Dunshea, Xiying Li, Robyn D. Warner, Robert JE Hewitt, Minh Ha, Darryl N. D'Souza (The University of Melbourne and The Sunpork Group)

AIMS AND OBJECTIVES

1. Compare the carcass traits, chemical properties, and eating quality of pork from different lines and muscles.
2. Determine the effects of pH, collagen characteristics, and IMF on pork eating quality.
3. Find the most important sensory attributes contributing to consumer evaluation of Australian pork.

KEY FINDINGS

These studies found that genetic lines and muscle can impact pH, collagen characteristics, IMF and eating quality of pork. These studies confirmed that flavour was the most important sensory attribute in consumer evaluation of Australian pork, followed by tenderness. A maternal Duroc line exhibited the highest IMF content; however, consumers preferred pork from a pure terminal Large-White type line. The Landrace line received the lowest sensory scores. In the first study, IMF was positively related to objective measures of eating quality. However, relationships with sensory eating quality, while positive, were less pronounced in the second study. The small effects may be due to the low range in IMF encountered in this study, and further work is needed with a wider range in IMF. In the first objective meat quality study, total muscle collagen was positively correlated with chewiness, hardness, and shear force. However, in the second study conducted three years later, collagen characteristics had little influence on pork sensory eating quality. Nevertheless, the sensory scores for the SM were higher than those for LTL, possibly due to its higher pH and collagen solubility. The check-all-that-apply (CATA) method effectively differentiated between muscle and line, but the biometric approach had limited performance. Future studies can focus on breeding strategies or nutrition interventions to improve pork flavour.

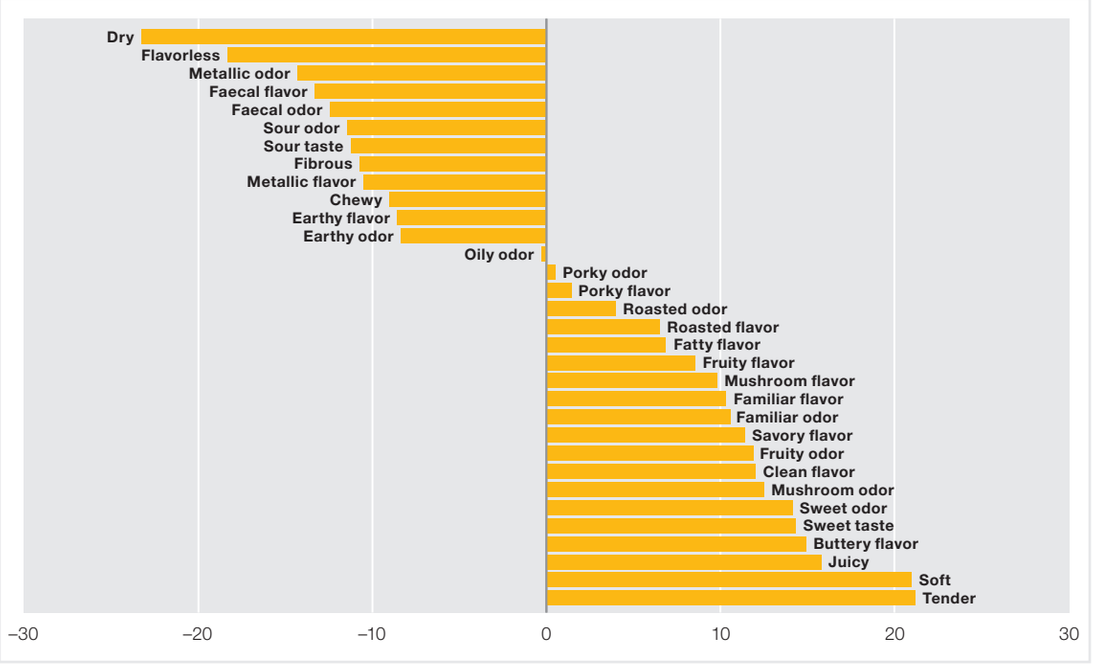
APPLICATIONS TO INDUSTRY

The following recommendations have been made:

1. Genetic selection should include measures of eating quality to improve the eating quality of Australian pork. These may include increasing pH, improving flavour, reducing muscle collagen and increasing IMF.
2. Nutritional strategies to improve pork eating quality need to be investigated. These may include increasing pH, improving flavour, reducing muscle collagen and increasing IMF.
3. On-farm and off-farm practices to reduce low pH should be employed to pork improve eating quality.
4. Characteristics of optimal pork flavour need to be determined to maximise pork eating quality.
5. The check-all-that-apply (CATA) method should be incorporated in future pork sensory studies.

FIGURE 13

Penalty lift analysis of check-all-that-apply terms



FEATURE PROJECT: 5A–120

DIETARY LECITHIN AND INULIN IMPROVED GROWTH PERFORMANCE AND EATING QUALITY OF PORK

PROJECT LEADER:
Professor Frank Dunshea

PROJECT PARTICIPANTS:
Frank R. Dunshea, Xiying Li, Robyn D. Warner, Fan Liu, Helen Grigg, Ashlee Adams and Henny Akit (The University of Melbourne, JBS Pork Australia & Universiti Putra)

AIMS AND OBJECTIVES

1. Determine the effects of sex, dietary lecithin and inulin on growth performance and carcass traits of pigs.
2. Determine the influence of sex, dietary lecithin and inulin supplement on physicochemical and sensory properties of pork.

KEY FINDINGS

Dietary supplementation of 2% inulin and 0.8% lecithin to pigs had limited effects on growth performance and carcass traits, although dietary lecithin improved FCR. However, dietary inulin increased intramuscular fat (IMF) content, especially in the *Biceps femoris* (BF), resulting in improved tenderness and flavour in both the *Longissimus thoracis et lumborum* (LTL) and BF. Additionally, check-all-that-apply (CATA) results showed that LTL from immunocastrated males supplemented with inulin were less dry and fibrous. On the other hand, lecithin supplementation increased collagen solubility, mostly in LTL. Lecithin supplementation increased roasted flavour and tenderness of LTL from immunocastrated males. Dietary supplementation of inulin and lecithin has the potential to alter muscle composition and thus improve the eating quality of pork. Future studies can be conducted on the mechanism(s) of the effects of inulin and lecithin on meat quality.

APPLICATIONS TO INDUSTRY

The following recommendations have been made:

1. Further research should be conducted to determine whether the improved eating quality in response to inulin is an effect specific to inulin or whether other less expensive and more readily available fibre sources could have similar benefits.
2. Dietary lecithin may be used as a strategy to improve the flavour eating quality of pork.
3. The CATA method should be incorporated in future pork sensory studies.

TABLE 3

Probability of off-flavor and success (purchase intent and quality grading) of pork biceps femoris *(BF) and* longissimus thoracis et lumborum *(LTL) from pigs of two sexes fed on different diets.*

	CASTRATE				FEMALE				*P* VALUES[1]					
Lecithin (Le)	0		0.8%		0		0.8%							
Inulin (In)	0	2%	0	2%	0	2%	0	2%	Sex	In	Le	Sex*In	Sex*Le	Le*In
BF														
n	59	90	80	78	120	90	89	109						
Probability of no off-flavor	0.970 ± 0.0198	0.961 ± 0.0218	0.990 ± 0.0074	0.989 ± 0.0078	0.984 ± 0.0096	0.971 ± 0.0172	0.985 ± 0.0100	0.970 ± 0.0163	0.12	0.32	0.11	*0.089*	0.23	0.30
Probability of success (purchase intent)[2]	0.177 ± 0.0590	0.190 ± 0.0497	0.200 ± 0.0546	0.331 ± 0.0708	0.304 ± 0.0563	0.291 ± 0.0622	0.258 ± 0.0586	0.316 ± 0.0600	*0.056*	0.18	0.48	0.56	0.14	0.37
Probability of success (quality grading)[3]	0.156 ± 0.0510	0.304 ± 0.0596	0.183 ± 0.0483	0.301 ± 0.0627	0.226 ± 0.0452	0.270 ± 0.0553	0.249 ± 0.0537	0.271 ± 0.0515	0.50	**0.016**	0.84	0.25	0.66	0.61
LTL														
n	60	90	80	80	120	90	90	110						
Probability of no off-flavor	0.982 ± 0.0130	0.976 ± 0.0147	0.990 ± 0.0071	0.984 ± 0.0107	0.986 ± 0.0085	0.985 ± 0.0102	0.980 ± 0.0126	0.981 ± 0.0112	0.68	0.48	0.39	0.53	0.25	0.66
Probability of success (purchase intent)[2]	0.247 ± 0.0695	0.307 ± 0.0641	0.320 ± 0.0688	0.327 ± 0.0698	0.264 ± 0.0524	0.213 ± 0.0532	0.235 ± 0.0565	0.303 ± 0.0585	*0.098*	0.57	0.26	0.94	0.60	0.53
Probability of success (quality grading)[3]	0.258 ± 0.0655	0.280 ± 0.0569	0.254 ± 0.0573	0.289 ± 0.0618	0.238 ± 0.0461	0.192 ± 0.0466	0.172 ± 0.0441	0.269 ± 0.0508	*0.062*	0.43	0.99	0.74	0.96	0.14

(1) Data are expressed as mean ± standard error. Data was analyzed by R with generalized linear mixed effects models. Fixed model = sex + lecithin + inulin + sex * lecithin + sex * inulin + lecithin * inulin, random model = day/participant + carcass. Bold numbers are statistically significant ($P < 0.05$). Italic numbers are close to significant ($P < 0.10$).

(2) Success – consumers selecting "4. I would probably buy it" and "5. I would definitely buy it".

(3) Success – consumers selecting "3. Better than everyday quality" and "4. Premium quality".

FEATURE PROJECT: 5A–122

CAN THE PROVISION OF SILAGE AT WEANING IMPROVE SOW WELFARE AND SUBSEQUENT REPRODUCTION?

PROJECT LEADER:
Dr Lauren Staveley (SunPork Group)

PROJECT PARTICIPANTS:
Dr Kate Plush, Sally Tritton, Robert Hewitt, Dr David Lines and Dr Darryl D'Souza (SunPork Group); Alison Leary (Lallemand Animal Nutrition)

AIMS AND OBJECTIVES

Silage and an enrichment block are suitable enrichment materials for sows, offering advantages over straw, which pose challenges in effluent blockages, cost and biosecurity risks. While previous studies have focused on group housed gestating sows, these materials may be particularly beneficial during the stressful wean to mate period, especially for sows that are group housed during this period. We hypothesised that the provision of enrichment, either silage or enrichment blocks, during the wean to mate period would reduce aggression, enhance affective state, and improve reproductive outcomes in a group mating system.

KEY FINDINGS

- Sows in both the Block and Silage treatment showed a reduced reaction to the adverse stimuli with a lower startle test score measured after six days of treatment application when compared to the Control.
- There was no difference in injury score (1.0 ± 0.06), wean to service interval (4.1 ± 0.06 days), conception rate (91%), or litter size (12.7 ± 0.19 pigs) between the three experimental treatments.

APPLICATIONS TO INDUSTRY

- Both Block and Silage provision were able to positively influence sow welfare during the stressful weaning to mating period.
- Further work is required to see if Silage provision can replace specialised diets, meeting both enrichment and nutritional requirements during this reproductive stage.

WE HYPOTHESISED THAT THE PROVISION OF ENRICHMENT, EITHER SILAGE OR ENRICHMENT BLOCKS, DURING THE WEAN TO MATE PERIOD WOULD REDUCE AGGRESSION, ENHANCE AFFECTIVE STATE, AND IMPROVE REPRODUCTIVE OUTCOMES IN A GROUP MATING SYSTEM

RESEARCH REPORT

INDUSTRY PRIORITY PROJECTS

WHAT IS AN INDUSTRY PRIORITY PROJECT?

APRIL has prioritised several industry challenges that if solved will assist in improving Australasian pork production. Industry Priority Projects are shorter-term, more focussed projects directed at solving these challenges through investments in collaborative research projects.

THE PRIORITY CHALLENGES THAT APRIL IDENTIFIED IN THE STRATEGIC PLAN 2019–2022 ARE:

- **Effective monitoring of foreign disease incursions in Australasia.**
- **Novel approaches to allow increased use of food wastes in pig diets.**
- **Making pigs more tolerant to heat.**
- **Improved water quality for use/re-use on-farm and in processing facilities.**
- **Alternate methods to control/eradicate endemic diseases.**
- **Development of real time monitoring and surveillance technologies under commercial conditions.**
- **Detecting sow reproductive state more efficiently and effectively.**
- **Establish pork as an integral part of a healthy lifestyle.**
- **Reducing variation in lifetime performance.**
- **Biodegradable packaging solutions for pork products.**
- **Heavier carcasses.**

FUTURE PRIORITIES

The 2023–2025 APRIL strategic plan focused on Innovation and Transformational projects, and so no Industry Priority Projects were contracted during this period.

The introduction of the Green paper process has once again identified priorities for Industry Priority Projects, and for 2025–26 these are:

PIG CARE AND WELLBEING

Expected outcomes: Providing novel tools or approaches to support continuous improvement and assessment of pig care and wellbeing and demonstrate the welfare credentials of the Australian pork industry.

- Objective assessment of pig care and wellbeing.
- Generation of a suite of suitable biomarkers indicating positive welfare attributes at end of life.
- Enrichment and management strategies to prevent tail biting.
- Feed additives/nutritional strategies for positive welfare attributes.

PIG HEALTH, BIOSECURITY AND ANTIMICROBIAL STEWARDSHIP

Expected outcomes: Delivering novel technologies and approaches to mitigate risks and production impacts of infectious diseases, enhance emergency animal disease preparedness, and reduce antimicrobial use.

- Limiting the use of in feed antibiotics and enhancing the effectiveness and efficacy of water medication (in accordance with the Australian Strategic and Technical Advisory Group on Antimicrobial Resistance (ASTAG)).
- New vaccines/new vaccine technologies/delivery technologies to tackle key diseases.
- Alternative vaccine delivery technologies to reduce needle use.

PIG PROCESSING

Expected outcome: Ensuring a sustainable processing sector for the future.

- Maintaining CO_2 as the primary stunning gas in Australia.
- Avoiding foreign object contamination in carcasses.

FEEDING AND NUTRITION

Expected outcome: Making positive contributions to lowering the overall cost of production.

- Rapid identification of poor-quality manufactured feed.
- Improved management of feed bin/silo allocation of feeds and management.
- Greater understanding of heat increment with respect to nutrient requirements.

DATA AND INFORMATION

Expected outcome: Exploiting the benefits of technologies with existing and future information for more efficient and profitable pig production and processing.

- Automatic capture and use of information (e.g., smart sensors, digital technologies, artificial intelligence for more efficient and cost-effective pig management).
- Use of artificial intelligence technologies for welfare assessment at critical production points including farrowing and lactation with different farrowing systems.
- Use of artificial intelligence technologies for welfare assessment at critical production points including processing.

PROJECTS

APRIL has invested in the following projects addressing the “Making pigs more tolerant to heat”, “Reducing variation in lifetime performance”, “Development of real time monitoring and surveillance technologies under commercial conditions,” “Detecting sow reproductive state more efficiently and effectively“ and “Novel approaches to allow increased food wastes in pig diets” priorities:

6A–101 HEAT TOLERANCE (HT) IN LACTATING SOWS: DIETARY STRATEGIES, METABOLIC BIOMARKERS AND MICROBIOME SIGNATURE

PROJECT LEADER: PROFESSOR EUGENI ROURA, THE UNIVERSITY OF QUEENSLAND

- Test selected dietary supplements to increase the heat tolerance of the lactating sow.
- Identify individual variations in metabolism between heat tolerant and less heat tolerant sows during lactation (metabolic and microbiome markers in resilient compared to the most vulnerable individuals).

6A–102 HOT AND BOTHERED! LONG TERM IMPACTS OF LATE PREGNANCY HEAT STRESS ON SOWS AND PROGENY

PROJECT LEADER: DR KATE PLUSH, SUNPORK FARMS

- Demonstrate that heat stress results in a longer duration of farrowing.
- Identify the impacts longer farrowing duration has on (a) the sow and (b) the piglet, and how this impacts long term performance.
- Test dietary/water additives for reducing farrowing duration during times of heat stress and determine the production advantages at a commercial level.
- Conduct a cost:benefit analysis and assessment of farrowing room cooling in the hotter months.

6A–103 EASING THE WEANING TRANSITION: LARGE PIGLETS FROM LARGE PELLETS

PROJECT LEADER: MR ROBERT HEWITT, SUNPORK FARMS

- Reduce weight variability around weaning through combining two complimentary technologies, large pellets and semi-moist extruded feed, to improve feed intake in the period immediately post-weaning, sustaining weight gain.

6A–104 USE OF THERMOGRAPHIC TECHNOLOGY TO DETECT REPRODUCTIVE STATE IN SOWS AND IMPROVE PIGLET PERFORMANCE IN A COMMERCIAL FARROWING HOUSE

PROJECT LEADER: DR JESSICA CRAIG, RIVALEA (AUSTRALIA) PTY LTD

- Identify the optimum position on the sow for surface temperature measurements in order to predict success in lactation of sows, their health status, as well as the viability of their piglets at birth.
- Early detection of at-risk piglets, farrowing difficulties, and/or MMA to provide producers with the tools for early intervention for sows and piglets at risk.

6A–105 FOOD WASTE TO PIG FEED – SAFE AND BIO-SECURE

PROJECT LEADER: DR VALERIA TOROK, SARDI
JOINT PROJECT WITH THE FIGHT FOOD WASTE CRC

- Address novel approaches to allow increased use of food wastes in pig feed.
- Identify food safety/biosecurity risks and strategies to mitigate perceived risks of utilising food waste streams into pig feed.
- Identify waste streams with the least variability in quality and quantity.
- Determine the economic feasibility of utilising food waste for pig feed in key regional production areas.

6A–106A PRECISION MONITORING OF REPRODUCTIVE STATE VIA DEVELOPMENT OF PEN SIDE MUCUS TESTING AND CONTINUOUS REMOTE MONITORING

PROJECT LEADER: PROFESSOR PAUL VERMA, SARDI

6A–106B PRECISION MONITORING OF REPRODUCTIVE STATE VIA DEVELOPMENT OF PEN SIDE MUCUS TESTING AND CONTINUOUS REMOTE MONITORING

PROJECT LEADER: ASSOCIATE PROFESSOR ROS BATHGATE, THE UNIVERSITY OF SYDNEY

These studies will be conducted in parallel and both projects will contribute to two priority areas: detection of sow reproductive state and development of real-time monitoring technologies.

There are three aims to the projects, namely:

1. In sows and gilts, to determine whether oestrus and ovulation are accurately identifiable by:
   i. changes in the concentration of ions in cervical mucus using Near InfraRed Spectroscopy (NIRS)
   ii. the use of accelerometers
   iii. alterations in the glycomic profile of cervical mucus using liquid chromatography-mass spectrometry.
2. To devise and implement an innovative oestrous detection protocol using NIRS cervical mucus analysis to compare conception and farrowing rates with conventional oestrus detection following either double or single dose artificial insemination.
3. In sows, to determine whether the glycomic profile of cervical mucus accurately detects:
   i. seasonal infertility
   ii. pregnancy status prior to 28 days post-insemination
   iii. the onset of parturition.

6A–107 DEVELOPING HIGH-THROUGHPUT MOLECULAR SCREENING TECHNIQUES TO DETECT RECIPROCAL TRANSLOCATION IN BOARS

PROJECT LEADER: PROFESSOR TARIQ EZAZ, THE UNIVERSITY OF CANBERRA

This project aims to identify diagnostic DNA markers associated with Reciprocal Chromosomal Translocations (RCTs) in boars. It will use new methodologies to identify single nucleotide polymorphisms and Presence-Absence markers linked with chromosome rearrangements and therefore associated with boar infertility.

The primary objective is to enable detection of RCTs cheaply in a high-throughput manner, enabling the widespread adoption of this technology, and reducing the incidence of low litter size. A secondary objective will see an expansion of the original screening conducted in APRIL project A3B–103 to additional genetic suppliers to detect the incidence of RCTs in the wider boar population.

6A–108 HOW LOW CAN YOU GO? OPTIMISING THE USE OF CALCIUM NITRATE (CAN) IN GESTATING SOW DIETS TO REDUCE PIGLET BIRTHWEIGHT VARIATION AND IMPROVE THEIR LIFETIME PERFORMANCE

PROJECT LEADER: DR JESSICA CRAIG, RIVALEA (AUSTRALIA) PTY LTD

This project will investigate the use of calcium nitrate (CAN) in sow diets to improve piglet birth weights and reduce variation in birth weight and lifetime performance.

Following on from a previous APRIL project (5A–104), the current project will aim to optimise strategies for the practical use of CAN and investigate three different timings of CAN supplementation in gestation (i.e., throughout gestation, late gestation from day 90 until farrowing, and the pre-farrowing transition period from entry to the farrowing house until farrowing), to discover the most cost-effective strategy for producers.

The use of a low-dose, low-cost feed additive in the form of CAN, over a relatively short period of time, is anticipated to increase birth weights and reduce birth weight variability. In turn, this is expected to reduce variation in carcass weights and result in heavier carcasses overall, reducing cost of production and improving profitability.

THE USE OF A LOW-DOSE, LOW-COST FEED ADDITIVE IN THE FORM OF CAN, OVER A RELATIVELY SHORT PERIOD OF TIME, IS ANTICIPATED TO INCREASE BIRTH WEIGHTS AND REDUCE BIRTH WEIGHT VARIABILITY

6A–109 REVIEW: IDENTIFYING KNOWLEDGE GAPS AND STRATEGIES TO IMPROVE PROGENY UNIFORMITY OF PIGS

PROJECT LEADER: DR FAN LIU, RIVALEA (AUSTRALIA) PTY LTD

Carcass weight and fatness are the two most important factors that determine the carcass value in the Australasian pig industry. Improving the uniformity of carcass weight at a given slaughter age and the uniformity of backfat at a given carcass weight can reduce sorting required for marketing, shorten the selling duration of a progeny batch and improve carcass compliance, thereby improving profitability.

The variation of carcass weight and backfat in a progeny batch are a reflection of different lifetime tissue deposition rates among individual pigs. The individual variation in tissue deposition rate of progeny pigs originates from multiple factors in the foetal, preweaning, weaner, and grower/finisher phases (Figure 14).

A Literature Review will be conducted to explore the key physiological and nutritional factors during the prenatal, neonatal, or postnatal phase that are associated with the individual variation of tissue growth. The outcome of the review will facilitate the potential development of a research program to reduce the within-batch variation of progeny pigs.

6A–110 BEYOND CURRENT PORCINE CIRCOVIRUS VACCINE PROTECTION: DECODING VIRAL ESCAPE, TRACKING CIRCULATING STRAINS, AND DEVELOPING A TARGETED VACCINE

PROJECT LEADER: DR JASIM UDDIN, MURDOCH UNIVERSITY

This project aims to survey, isolate, and sequence Porcine Circovirus from clinically affected and healthy pigs in Australia to identify and characterise circulating strains. The outcomes will provide high-resolution genomic data to support improved disease surveillance and risk assessment for the pig industry.

6A–111 FEASIBILITY OF DEVELOPING A NOVEL ELISA FOR SWINE DYSENTERY AND COLITIS IN AUSTRALIAN PIGS

PROJECT LEADER: PROFESSOR SAM ABRAHAM, MURDOCH UNIVERSITY

This project will determine whether a sensitive, specific and cost-effective ELISA (or ELISA panel) can be developed for *B. hyodysenteriae* using whole-cell, purified LPS and synthetic antigens.

6A–112 TRANSFORMING THE MANAGEMENT OF INTESTINAL PARASITES AND ANTIPARASITIC RESISTANCE IN AUSTRALIAN PIGS

PROJECT LEADER: DR ABDUL JABBAR, UNIVERSITY OF MELBOURNE

This project will deliver the first comprehensive, evidence-based understanding of intestinal parasites in commercial piggeries in Australia.

THE INDIVIDUAL VARIATION IN TISSUE DEPOSITION RATE OF PROGENY PIGS ORIGINATES FROM MULTIPLE FACTORS IN THE FOETAL, PREWEANING, WEANER, AND GROWER/ FINISHER PHASES

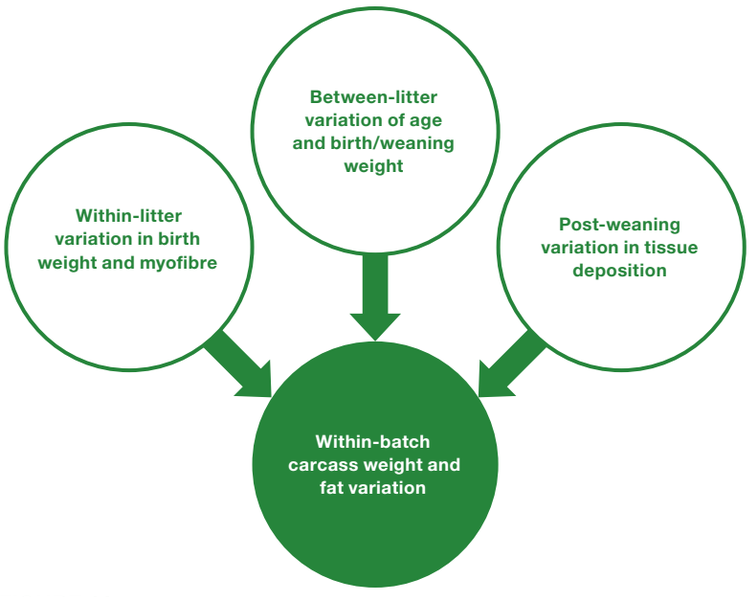


FIGURE 14

Sources of within-batch variation in pig carcasses.

6A–113 FEEDING TECHNOLOGY FOR FARROWING PENS TO IMPROVE PIGLET SURVIVAL

PROJECT LEADER: DR LAUREN STAVELEY, SUNPORK GROUP

Lactation feeding programs are designed to maximise sow feed intake in farrowing crates. Often sows have constant feed access to achieve this. This strategy may be inappropriate for piglet survival when crates are removed, and risk of piglet overlay is high. By only allowing sows in farrowing pens access to feed during set periods, we believe this training will remove overnight feed seeking behaviour, posture changes and piglet overlay. This will be the first study that delivers the most appropriate feeding strategy for piglet survival in free farrowing sows.

6A–114 OPTIMIZE SYNTHETIC TO TOTAL LYSINE RATIO TO REDUCE TOTAL HEAT PRODUCTION

PROJECT LEADER: DR FAN LIU, JBS PORK AUSTRALIA PTY LTD.

The project aims to establish an optimal synthetic amino acid: crude protein ratio in the finisher-phase diet based on energy retention efficiency and calculated fasting heat production. The finetuned synthetic amino acids: crude protein ratio is expected to favour the partitioning of net energy towards tissue deposition and to reduce fasting heat production.

NO.	PROJECT NAME	LEAD PARTY
6A–101	Heat Tolerance (HT) in lactating sows: dietary strategies, metabolic biomarkers and microbiome signature	The University of Queensland
6A–102	Hot and Bothered! Long term impacts of late pregnancy heat stress on sows and progeny	CHM Alliance Pty Ltd (SunPork)
6A–103	Easing the transition: large piglets from large pellets	CHM Alliance Pty Ltd (SunPork)
6A–104	The use of thermographic technology to detect reproductive state in sows and improve piglet performance in a commercial farrowing house	Rivalea (Australia) Pty Ltd
6A–105	Food waste to pig feed – Safe and Bio-secure	Fight Food Waste CRC
6A–106a	Precision monitoring of reproductive state via development of pen side mucus testing and continuous remote monitoring	SARDI
6A–106b	Precision monitoring of reproductive state via development of pen side mucus testing and continuous remote monitoring	The University of Sydney
6A–107	Developing high throughput molecular screening techniques to detect reciprocal translocation in boars [cancelled due to technical difficulties]	The University of Canberra
6A–108	How low CAN you go?: Optimising the use of calcium nitrate (CAN) in gestating sow diets to reduce piglet birthweight variation and improve their lifetime performance	Rivalea (Australia) Pty Ltd
6A–109	Review: Identifying knowledge gaps and strategies to improve progeny uniformity of pigs	Rivalea (Australia) Pty Ltd
6A–110	Beyond Current Porcine Circovirus Vaccine Protection: Decoding Viral Escape, Tracking Circulating Strains, and Developing a Targeted Vaccine	Murdoch University
6A–111	Feasibility of Developing a Novel ELISA for Swine Dysentery and Colitis in Australian Pigs	Murdoch University
6A–112	Transforming the management of intestinal parasites and antiparasitic resistance in Australian pigs	The University of Melbourne
6A–113	Feeding technology for farrowing pens to improve piglet survival	CHM Alliance Pty Ltd (SunPork Group)
6A–114	Optimize synthetic to total lysine ratio to reduce total heat production	JBS Pork Australia Pty Ltd

APRIL INDUSTRY PRIORITY PROJECT COMMITMENTS

FEATURE PROJECT: 6A–101

HEAT TOLERANCE IN LACTATING SOWS: DIETARY STRATEGIES, METABOLIC BIOMARKERS AND MICROBIOME SIGNATURE

PROJECT LEADER:
Prof. Eugeni Roura (The University of Queensland (UQ))

PROJECT PARTICIPANTS:
Dr. Maximiliano Muller (UQ), Dr. Marta Navarro (UQ), Dr. Xinle Tan (UQ), Dr. Guangli Feng (UQ), PhD Candidate Astrid Coba Cedeno (UQ), PhD Candidate Ruihong Dong (UQ)

AIMS AND OBJECTIVES

The main aim of this project was to improve the lactating sows' compensatory mechanisms to cope with high environmental temperatures via dietary manipulations.

Objectives:

1. Test selected dietary strategies (i.e., flavours, cooling agents and reduced dietary protein levels) to increase the heat tolerance of lactating sows.
2. Identify changes in metabolism and microbiome (i.e., biomarkers) associated with heat tolerance in lactating sows, that may explain individual variations.

KEY FINDINGS

- The use of a low protein diet improved the feed intake and reduced the sow's internal body temperatures and respiration rate.
- Pro-inflammatory molecules (e.g., arachidonic acid) and previously described heat stress biomarkers (e.g., cholesterol) were reduced in lactating sows fed a low protein diet, indicating reduced metabolic stress due to environmental hyperthermia when compared to those sows fed a standard protein diet.
- The low protein diet enhanced the gut microbiome vitamin B_{12} synthesis pathway (pivotal for ATP production and radical oxygen species detoxification), indicating this group was better adapted to cope with the metabolic stress produced by the high environmental temperatures.
- Long chain fatty acids, glycerophospholipids, mineralocorticoids and amino acids were the most abundant types of metabolites altered during heat stress. Consistent with these results, a negative correlation between the abundance of proteins related to AA and lipid metabolism in the liver and feed intake reduction during heat stress was identified.

APPLICATIONS TO INDUSTRY

- Low protein diets can be used in lactating sows to improve feed intake and reduce body temperatures during summer/hot weather conditions.
- Changes in the blood level of fatty acids, glycerophospholipids, mineralocorticoids and amino acids, such as tryptophan, arachidonic acid and pregnanolone, can be used as potential indices of heat tolerance in lactating sows to identify individuals at higher risk of heat stress.

FEATURE PROJECT: 6A–102

HOT AND BOTHERED!
LONG TERM IMPACTS OF LATE PREGNANCY HEAT STRESS ON SOWS AND PROGENY

PROJECT LEADER:
Dr Kate Plush (SunPork Group)

PROJECT PARTICIPANTS:
Darryl D'Souza, Sally Tritton (SunPork Group, Eagle Farm, QLD); Jeremy Cottrell, Frank Dunshea (The University of Melbourne, Parkville, VIC)

AIMS AND OBJECTIVES

This project investigated the hypothesis that heat stress at farrowing extends parturition duration by limiting the energy available for uterine contractions, and that this physiological disruption impairs sow reproductive health and neonatal piglet gut development. A secondary objective was to evaluate whether in-water supplementation with betaine or sanguinarine (an extract from Macleaya cordata) could ameliorate the negative effects of heat stress in a commercial farrowing setting.

KEY FINDINGS

- Cyclic heat stress during late gestation and farrowing (30°C daytime, 28°C overnight) dramatically increased stillbirth rates in gilts (33.3% vs. 2.3% in controls), with heat stress attributable to 93% of all stillbirths observed.
- Heat-stressed gilts showed elevated respiration rates, rectal and skin temperatures, substantially reduced feed intake, increased plasma cortisol, and altered acid-base balance. Umbilical cord rupture explained 55% of stillbirths, and for the first time, foetal hypoxia via reduced umbilical oxygen supply was identified as a key mechanism underlying heat stress-induced perinatal mortality.
- Maternal heat stress reduced small intestinal length and absolute brain weight in piglets at 48 hours of age, with reduced jejunal crypt depth also observed.
- Neither betaine nor sanguinarine supplementation delivered via in-water dosing improved farrowing performance or piglet survival in commercial experiments, most likely due to insufficient heat stress conditions at the experimental sites.

APPLICATIONS TO INDUSTRY

- Sows are highly susceptible to heat stress during parturition, with negative and lasting impacts on piglet morphology, survival and growth. Farrowing should be considered a priority period for thermal management interventions.
- Farrowing houses should be climate controlled to maintain ambient temperatures below 24°C. In-water supplementation with betaine or sanguinarine was not effective under the commercial conditions tested however, the practicality of in-water delivery systems warrants continued investigation, particularly in naturally ventilated farrowing houses.

EDUCATION AND TRAINING REPORT

SELECT EQUIP
DELEGATE
SARAH
JAMES
University of Adelaide
ROSA
NUNEZ
MILLY
PORK

APRIL EDUCATION AND TRAINING PROGRAM

APRIL is committed to helping build skilled human resources for the benefit of industry, whether it be through supporting tomorrow's researchers through undergraduate projects (e.g. Honours) and postgraduate support such as PhD scholarships and Doctor of Veterinary Medicine projects, or training highly skilled staff in pork production through the Industry Placement Program.

APRIL also supports researchers under the Post-Doctoral Fellowship Scheme which provides support to Universities to employ an early career research scientist focused on pork industry research.

During the year, APRIL joined with Australian Pork Limited to form the Australian Pork Industry Education and Training Committee (APIETC) to manage the overall education, training and research interests of both organisations. This Committee replaces APRIL's Education Advisory Committee. The APIETC met four times in this reporting period.

TOMORROW'S RESEARCHERS

As at 30 June 2026, APRIL has supported scholarships for the following undergraduate and postgraduate students:

…THE PHD STUDENTS INVOLVED IN THESE PROJECTS ARE WORKING ON REAL-WORLD ISSUES ON COMMERCIAL PRODUCTION UNITS…

STUDENT	UNIVERSITY	QUALIFICATION	STATUS
Brittany Silva	Murdoch University	DVM	Completed
Ryan Kristen	The University of Sydney	DVM	Completed
Bianca Hatze	The University of Sydney	DVM	Completed
Cheuk Yin Tsang	Adelaide University	DVM	Ongoing
Celestine Ong	Adelaide University	DVM	Ongoing
Eva Vidacs	The University of Melbourne	Honours	Completed
Suzanna Jones	Murdoch University	Honours	Completed
Stephanie Shields	The University of Sydney	Honours	Completed
Kaitlin Beltakis	The University of Adelaide	Honours	Completed
Amelia Sofra	The University of Melbourne	Honours	Completed
Tanishka Munjal	The University of Melbourne	Honours	Completed
Emma Goode	University of New England	MSc	Completed
Isabel Stanley	The University of Melbourne	MSc	Completed
Tanya Laird	Murdoch University	PhD	Completed
Elisabet Puig-Garcia	The University of Queensland	PhD	Completed
Abedin Abdallah	The University of Queensland	PhD	Ongoing
Katelyn Tomas	The University of Queensland	PhD	Completed
Rutu Galea	The University of Melbourne	PhD	Ongoing
Md Shariful Islam	University of New England	PhD	Ongoing
Soraya Leedham (nee Haynes)	Murdoch University	PhD	Completed
Viet Hai Tran	The University of Queensland	PhD	Completed
Xianyi Liu	The University of Queensland	PhD	Completed
Paul Bogere	The University of Queensland	PhD	Ongoing
Astrid del Rocio Coba Cedeno	The University of Queensland	PhD	Completed
Cintia Amaral	Murdoch University	PhD	Ongoing
Sarah James	The University of Adelaide	PhD	Ongoing
Ashiqur Rahman	Murdoch University	PhD	Ongoing
Wendy Izedonmwen	The University of Queensland	PhD	Ongoing
Thein Van	Adelaide University	PhD	Ongoing
Chandra Shaker Chouhan	Murdoch University	PhD	Ongoing
Elahe Soltani	Adelaide University	PhD	Ongoing
Jianuo Xu	The University of Melbourne	PhD	Ongoing

In addition, a number of projects involving APRIL funding also provide student support. Examples include the Australian Research Council-Linkage projects involving APRIL as a Partner Organisation, titled *Early stress experiences and stress resilience and emotionality in pigs* and *How to make antimicrobials in pig feed redundant, naturally*. The nature of these projects, directly involving industry, means that the PhD students involved in these projects are working on real-world issues on commercial production units, meaning not only do they gain a PhD but also are well equipped to enter the workforce having a greater understanding and appreciation of production.

INDUSTRY PLACEMENT PROGRAM

The 2026 APRIL IPP was awarded to Dr Katelyn Tomas (JBS Pork Australia Pty Ltd), a previous awardee of the APRIL Top-Up Scholarship. The IPP award aims to attract graduates with an interest in pork production as a career by co-sponsoring a position in a commercial pork production organisation or an affiliated business strongly aligned to pork production. The employer will receive $90,000 over the first two years of a three-year agreement, with APRIL to help cover salary and other costs associated with training the awardee. Katelyn's current research at JBS is focusing on investigating novel solutions to improve post-weaning adjustments in piglets.

As at 30 June 2026, APRIL has supported the following IPP students:

AWARDEE	EMPLOYER	STATUS
Sofie Pridgeon	CHM Alliance Pty Ltd (SunPork)	Completed
Dr Jessica Craig	Rivalea (Australia) Pty Ltd	Completed
Dr Lauren Staveley	CHM Alliance Pty Ltd (SunPork)	Completed
Dr Maria Jorquera-Chavez	Rivalea (Australia) Pty Ltd	Completed
Dr Nandi van Wyk	Apiam Animal Health Ltd/ Portec	Completed
Dr Maximiliano Muller	The University of Queensland	Completed
Samantha Sterndale	Westpork Pty Ltd	Completed
Patrick Hurley	CHM Alliance Pty Ltd (SunPork)	Terminated
Dr Katelyn Tomas	JBS Pork Australia Pty Ltd	Ongoing

POST DOCTORAL FELLOWSHIP SCHEME

2026 was the second year this newly formed Scheme has been available.

During the reporting period, APRIL has supported an additional three researchers via the Postdoctoral Fellowship Scheme Award. The scheme is aimed at researchers who have completed their research doctorate (or equivalent) to further develop their career.

As at 30 June 2026, APRIL has supported the following Post Doctoral Fellowship Scheme researchers:

AWARDEE	EMPLOYER	STATUS
Dr Bryony Tucker	South Australian Research and Development Institute	Ongoing
Dr Gemma Zerna	LaTrobe University	Ongoing
Dr Ghazanfar Abbas	The University of Melbourne	Ongoing
Dr Maria Grassino	The University of Queensland	Ongoing
Dr. Shewli Mukerji	Murdoch University	Ongoing

STUDENT PROFILE: DR GHAZANFAR ABBAS

HEALTHIER PIGS, STRONGER INDUSTRY: DR GHAZANFAR ABBAS' RESEARCH ON INTESTINAL PARASITES

GHAZ WAS AWARDED THE AUSTRALIAN PIG INDUSTRY EDUCATION AND TRAINING COMMITTEE (APIETC) POSTDOCTORAL FELLOWSHIP SCHEME AWARD, FUNDED BY APRIL THIS AWARD SUPPORTS INDIVIDUALS UNDERTAKING FURTHER CAREER DEVELOPMENT

With a background spanning veterinary practice, teaching, research and advanced study, Ghaz, as he prefers to be called, has developed extensive expertise in veterinary parasitology. His current research at the University of Melbourne focuses on improving the management of intestinal parasites and tackling antiparasitic resistance in Australian pigs, helping to support healthier animals and a more productive pork industry.

It was inspiring to learn about Ghaz's achievements, his passion for animal health and parasite control really comes through when he explains the impact his research can have on the industry. Ghaz was awarded the Australian Pig Industry Education and Training Committee (APIETC) Postdoctoral Fellowship Scheme Award, funded by APRIL this award supports individuals undertaking further career development. We caught up with Ghaz recently to hear about his journey and current projects…

1. YOUR PROJECT FOCUSES ON INTESTINAL PARASITES IN AUSTRALIAN PIGS. FOR READERS WHO MAY BE UNFAMILIAR WITH THIS AREA, CAN YOU EXPLAIN WHAT THESE PARASITES ARE AND WHY THEY MATTER FOR PIG HEALTH, WELFARE AND PRODUCTIVITY?

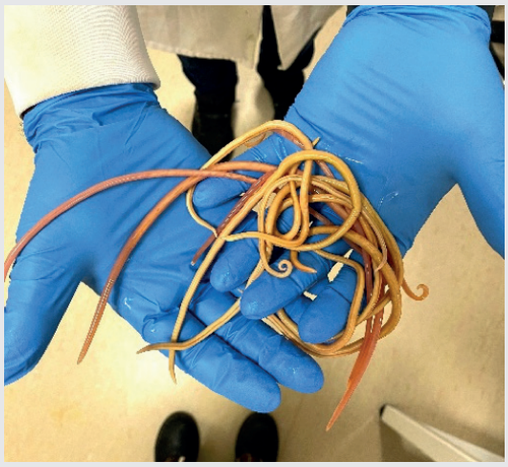
Intestinal parasites are organisms that live in a pig's digestive system and use the animal as a host. They include worms such as *Ascaris suum* (large roundworms of pigs) and *Trichuris suis* (whipworm), *Oesophagostomum* spp. (swine nodular worm) as well as single-celled parasites such as coccidia. Some infections may cause obvious signs, while others can remain hidden and still affect the animal over time. They matter because they can reduce feed efficiency, slow growth, damage the intestine or liver, and make pigs more vulnerable to other health problems. In young or heavily infected animals, they can also contribute to diarrhoea, poor condition and reduced welfare. From a production perspective, even mild infections across a herd can lead to poorer weight gain, higher feed costs and losses such as liver condemnation at slaughter. The challenge is that these parasites are often overlooked because the effects can be gradual and may not be immediately visible. That is why better surveillance is so important. By understanding which parasites are present, how common they are and how heavy the infection burdens can be, we can help producers and veterinarians make more informed decisions about prevention, treatment and herd management.

2. WHAT ARE THE MAIN QUESTIONS YOU'RE HOPING TO ANSWER THROUGH THIS RESEARCH, AND HOW COULD THE FINDINGS HELP SUPPORT THE AUSTRALIAN PORK INDUSTRY?

The project is built around four main questions. *First*, which intestinal parasites are currently affecting Australian pigs, how common are they, and how heavy are the infections across different age groups and production systems? *Second*, what control practices are producers currently using, and where are the main knowledge or management gaps? *Third*, are the antiparasitic drugs used in Australian pigs still working effectively? *Finally*, can newer diagnostic tools, including next-generation sequencing and the *Ascaris suum* ELISA, improve how we detect and monitor these infections? Answering these questions will give the industry a much clearer evidence base for parasite control. The findings could help producers and veterinarians identify high-risk situations, choose treatments more strategically, avoid unnecessary or ineffective drug use, and detect reduced drug efficacy before it becomes a bigger problem. The project will also support the development of more practical surveillance approaches and industry-specific recommendations. Ultimately, the aim is to help the Australian pork industry move from largely routine or experience-based parasite control toward a more targeted, evidence-driven and sustainable approach that improves pig health, welfare and productivity.

FIGURE 15

Ghaz with large adult roundworms (Ascaris suum) recovered from a pig's gastrointestinal tract.



3. HOW DID YOU FEEL WHEN YOU FOUND OUT YOU HAD RECEIVED THE FELLOWSHIP, AND WHAT DOES THIS SUPPORT MEAN FOR YOU AND YOUR RESEARCH?

I felt genuinely excited and grateful when I learned that I had received the fellowship. It was also a strong affirmation that intestinal parasites in pigs are an important and timely area of research for the Australian pork industry.

When we look at the international picture, a great deal of research on pig parasites has been conducted in Europe, North America and other parts of the world. In Australia, however, the evidence base is extremely limited, and much of the earlier work dates back to the 1990s. That means we still lack a contemporary national understanding of which parasites are present, how common they are, how heavy infection burdens can be, and whether current control measures are working effectively. Our pilot studies in Victoria have already shown that Australian pigs can carry a diverse range of parasites and infection prevalence may be higher and more complex than previously recognised. Those findings made it clear to me that there is much more work to be done, both scientifically and in terms of building research capacity.

For me, this fellowship is therefore much more than support for a single project. It provides an opportunity to develop an independent research program in pig parasitology, strengthen my expertise in field epidemiology, molecular diagnostics and drug-efficacy assessment, and build closer relationships with producers, veterinarians and industry partners. My long-term goal is to establish pig parasitology as a recognised and sustainable area of research in Australia. I want to help build the evidence, tools and collaborations needed to improve parasite surveillance and control, while also creating a platform for future students, researchers and industry-led projects.

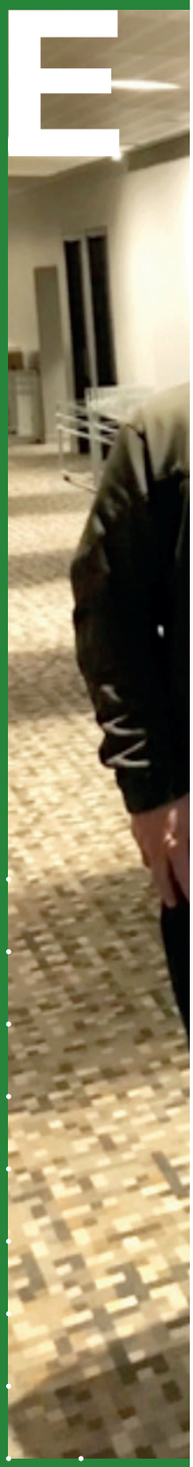
From a career perspective, the fellowship is an important step toward research independence. It will help me establish a clear research niche, build national and international collaborations, and develop the track record needed to compete for future fundings. Most importantly, it gives me the opportunity to contribute in making a practical difference to pig health, welfare and productivity in Australia.

4. WHERE DO YOU HOPE YOUR STUDIES AND RESEARCH WILL LEAD YOU IN THE FUTURE?

I see myself continuing to build a long-term research program in pig health and parasitology, because there is still a major gap in Australian knowledge and research capacity in this area. My immediate goal is to establish pig parasitology as a recognised and sustainable field of research in Australia, supported by strong links with producers, veterinarians, industry bodies and international collaborators. In the future, I would like to expand this work beyond prevalence studies into more applied areas, including parasite transmission, host-parasite interaction, drug efficacy and resistance, improved diagnostics, targeted treatment strategies and alternatives that reduce reliance on routine chemical control. I am particularly interested in developing practical tools that can be used by producers and veterinarians to make better decisions at the herd level. At the same time, I see this work as part of a broader animal health research program. The approaches I am developing in epidemiology, molecular diagnostics, surveillance and treatment evaluation can also be applied to other livestock diseases. My long-term ambition is therefore to lead a multidisciplinary research group focused on evidence-based disease control, animal welfare and sustainable livestock production. I also hope to train students and early-career researchers in this area. Building capacity is important because Australia currently has very limited expertise in pig parasitology. Ultimately, I want my research to generate practical benefits for the pork industry while also creating a lasting platform for future animal health research.

OUR PILOT STUDIES IN VICTORIA HAVE ALREADY SHOWN THAT AUSTRALIAN PIGS CAN CARRY A DIVERSE RANGE OF PARASITES AND INFECTION PREVALENCE MAY BE HIGHER AND MORE COMPLEX THAN PREVIOUSLY RECOGNISED

CORPORATE GOVERNANCE



STRUCTURE

The Australasian Pork Research Institute Ltd (APRIL) is a tax exempt Australian public not-for-profit company limited by guarantee.

At 30 June 2026, APRIL had six Ordinary (voting) Members, one (non-voting) Supporting Member, and three (non-voting) Corporate Partners.

GOVERNANCE

Board membership consists of:

- An independent Chairperson and one other independent Director nominated by the Board and appointed by vote of Ordinary Members at a general meeting.
- Two Directors appointed by Australian Pork Limited (APL).
- Four Directors appointed by vote of Ordinary Members at a general meeting from nominations provided by Ordinary Members.
- One Executive Director, being the Industry Chief Scientist, by virtue of their appointment to that role.

All nominees must add skills to the Board in one or more of the following areas:

a. As a member of the Australian Institute of Company Directors or other appropriate qualifications or accreditations to be a Director.
b. Pork production and processing.
c. Business management.
d. Finance and accounting and/or auditing.
e. Corporate governance.
f. Marketing.
g. Administration and commercialisation of research and development.
h. Environment.
i. Animal science and welfare.
j. Education.
k. Any other skills determined by the Directors from time to time.

The Board has approved the Governance Manual and Code of Conduct which set out the expectations and responsibilities of Directors under APRIL's governance framework.

Individual Directors have a right to obtain information necessary for them to discharge their duties from executives employed by APRIL.

Directors may seek independent professional advice, at the expense of the company if any Director wishes to do so, subject to prior agreement of the Chairperson.

BOARD MEMBERS

APRIL's Board members are:

Details of each Director's skills and experience can be found in the Directors' report on page 86.

INDEPENDENT DIRECTORS

DR TONY PEACOCK
Chairperson

MR MATT NORTON

APL APPOINTED DIRECTORS

MARGO ANDRAE
[resigned 31 July 2026]

MS GAIL OWEN

MEMBER NOMINATED DIRECTORS

PROFESSOR ROBERT VAN BARNEVELD

PROFESSOR FRANK DUNSHEA

MR NEIL FERGUSON

DR JESSICA CRAIG

INDUSTRY CHIEF SCIENTIST AND EXECUTIVE DIRECTOR
DR JOHN PLUSKE

BOARD COMMITTEES

APRIL has constituted the following Board Advisory Committees:

- Research and Development Advisory Committee
- Joint APL-APRIL Australian Pork Industry Education and Training Committee
- Audit and Risk Committee

Further detail on the functions of these committees is provided below.

RESEARCH AND DEVELOPMENT ADVISORY COMMITTEE

Clause 38.6 of APRIL's Constitution requires the Directors to establish a Research and Development Advisory Committee, and also permit each Ordinary Member to appoint a member of the Committee by notice to the Company Secretary.

The Committee advises and assists the Board of APRIL to oversee and advise on all matters relating to the establishment of Projects undertaken by or on behalf of the company.

The members of the Committee as at 30 June 2026 were:

- Dr John Pluske, Chief Scientist for the Australian Pork Industry (Chair)
- Professor Sam Abraham, Murdoch University
- Dr David Cadogan, Feedworks P/L
- Dr Jeremy Cottrell, The University of Melbourne
- Dr Darryl D'Souza, CHM Alliance Pty Ltd (SunPork)
- Dr Fan Liu (JBS Pork Australia Pty Limited *(formerly Rivalea (Australia) Pty Ltd)*
- Dr Rebecca Morrison, Australian Pork Ltd
- Professor Wayne Pitchford, University of Adelaide
- Dr Charles Rikard-Bell, APRIL
- Professor Eugeni Roura, The University of Queensland
- Dr Samantha Sterndale, Westpork P/L
- Dr Tanya Nowland, SARDI

The Committee held five meetings during 2025–26.

JOINT APL-APRIL AUSTRALIAN PORK INDUSTRY EDUCATION AND TRAINING COMMITTEE

The joint APL-APRIL Australian Pork Industry Education and Training Committee is established under clause 38.1(b) of the APRIL Constitution as an Advisory Committee to advise and assist the APRIL Board in discharging its activities in relation to Education and Training within APRIL.

The members of the Committee as at 30 June 2026 were:

- Professor Frank Dunshea, The University of Melbourne (Chair)
- Dr Rebecca Athorn, Australian Pork Limited
- Ms Rowena Davis, Australian Pork Limited
- Dr Jessica Craig, JBS Pork Australia Pty Ltd

Ex-officio members:

- Dr John Pluske, Chief Scientist for the Australian Pork Industry
- Dr Charles Rikard-Bell, Executive Officer APRIL
- Rebecca Morrison, General Manager Research, Innovation and Extension, Australian Pork Limited

The Committee held four meetings during 2025–26.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee is established under clause 38.1(b) of the APRIL Constitution as an Advisory Committee to advise and assist the APRIL Board in discharging its responsibility for the general oversight of APRIL affairs in the areas of financial accounting and reporting, government reporting, governance, risk management, and the underlying internal control environment.

The members of the Committee as at 30 June 2026 were:

- Prof Robert van Barneveld (Chair)
- Mr Neil Ferguson
- Mr Charles Latham (Independent Committee Member)
- Mr Matt Norton
- Ms Gail Owen

The Executive Officer and Company Secretary also attended all Audit and Risk Committee meetings.

The Committee held five meetings during 2025–26.

MANAGEMENT

T +61 8 8313 7973
M 0439 513 723
E c.rikardbell@april.org.au

EXECUTIVE OFFICER

DR CHARLES RIKARD-BELL
BSc.Agr, MSc, PhD

As Executive Officer, Dr Rikard-Bell is responsible for the management of the APRIL Research and Development and Education and Training Programs, and commercialisation activities. Charles worked in UK, Belgium and USA as a pig geneticist before returning to Australia to work with a multinational animal health company for 11 years, holding technical, sales and marketing roles in Australia and Asia Pacific. Charles gained his PhD in nutrition and biology through the CRC for an Internationally Competitive Pork Industry.

EXTENSION OFFICER

DR SOPHIE WARD
BSc(AnimalSc), PhD

Sophie holds a dual role (50/50 split) as Science Extension Officer for both APRIL and APL. Dr Ward completed her PhD at the University of Adelaide, focusing on strategies to improve farrowing performance in sows and subsequent survival of piglets. Following her PhD, Sophie joined APRIL as part of the transformative Tails CRC project investigating the causes of tail biting in pigs under Australian conditions.

COMPANY SECRETARY

MS SALLY VARDY
GAICD, FGIA, former FCA

Sally is a highly experienced and versatile finance and governance professional with significant Board and Committee experience. She has over 15 years' experience as a professional Company Secretary and CFO for a range of CRC and other research-based organisations. Sally has over 30 years' experience and is responsible for the financial and governance functions within APRIL.

MEMBERS (at 30 June 2026)

FOUNDATION MEMBERS

- Australian Pork Limited
- Feedworks Pty Ltd (and Bronze Participant)
- Murdoch University (and Gold Participant)
- JBS Pork Australia Pty Limited (and Gold Participant)
- CHM Alliance Pty Ltd (SunPork) (and Gold Participant)
- Westpork Pty Ltd (and Bronze Participant)

NON-MEMBER PARTICIPANTS

- University of Melbourne (Gold)
- University of Queensland (Gold)
- University of Adelaide (Gold)
- South Australian Research and Development Institute (Gold)
- Craig Mostyn & Co Pty Ltd (Gold)
- Ridley Agriproducts Pty Ltd (Bronze)

SUPPORTING MEMBER

- RSPCA Australia

CORPORATE PARTNERS

- Elanco Australasia Pty Ltd
- Jefo Australia Pty Ltd
- MSD Animal Health

STRATEGIC PLAN DELIVERABLES

APRIL's achievements against Pillar 1: Further Developing the APRIL Business of the new strategic plan are set out below:

PILLAR 1: FURTHER DEVELOPING THE APRIL BUSINESS

ACTIVITIES	KEY OUTCOMES/DELIVERABLES	2026 STATUS
1.1 Seek additional investment to deliver APRIL's activities	Define and optimise the mechanism in which APRIL can capture unused statutory cap.	● In progress
	Leverage APRIL investment in research and commercialisation by stakeholder co-investment in applicable projects.	✔ Achieved for the year – ongoing
	Increase Participant and Corporate Partner revenue of APRIL:	● Partly achieved this year – ongoing
	• At least two new Ordinary Members/Participants by February 2028 (over December 2025 Participant Model).	● Partly achieved this year – ongoing
	• Additional revenue (up to $100,000 per annum) from non-membership activities, including from external strategic investment of cash reserves.	● Partly achieved this year – ongoing
1.2 Nurture and grow collaborative alliances	Review Participant model rights and benefits and to ensure APRIL can deliver appropriately and sustain support.	● Not due this year
	Grow relationships/partnerships with relevant investors to advance progress in mutually beneficial activities.	✔ Achieved for the year – ongoing
1.3 Consultation with Chief Scientist	Identify external opportunities for co-investment in APRIL activities and where feasible, and where appropriate, drive the bid process.	● In progress
	Monitor major external funding programs and strategically apply for funds as an applicant or as a co-applicant with e.g., a member or members:	● In progress
	• Development/submission of at least two major Transformational Projects application (> 5:1 project leverage on APRIL funds) to an external funding body, per annum.	● Partly achieved this year – ongoing
	Exploit APRIL's 'freedom to operate' and strong collaborative culture among members to seek investment in its project portfolio from non-traditional funding sources.	✔ Achieved for the year – ongoing

FINANCIAL STATEMENTS

AUSTRALASIAN PORK RESEARCH INSTITUTE LIMITED
ANNUAL REPORT FOR THE YEAR ENDED 30 JUNE 2026

Directors' report	86
Independence declaration	90
Statement of income and retained surplus	91
Statement of financial position	92
Statement of changes in equity	93
Statement of cash flows	94
Notes to the financial statements	95
Directors declaration	104
Independent auditor's report	105

DIRECTORS' REPORT

30 JUNE 2026

THE DIRECTORS PRESENT THEIR REPORT ON AUSTRALASIAN PORK RESEARCH INSTITUTE LIMITED ("THE COMPANY") FOR THE FINANCIAL YEAR ENDED 30 JUNE 2026.

PRINCIPAL ACTIVITIES AND OBJECTIVES OF THE COMPANY

The Company's objectives are focussed on enhancing the Australasian Pork Industry by investing in research, development, education and training, and commercialisation activities focused on priorities and deliverables that ensure the sustainability of Australasian pork production.

BOARD DIRECTORS

The details of Directors in office at any time during, or since the end of the year are as follows:

APL APPOINTED DIRECTORS

MS MARGO ANDRAE
[resigned 31 July 2026]
MBA, MAICD

Margo is an accomplished leader with over 20 years of experience and networks across primary industries, regional Australia and research environments. Margo joined Australian Pork Limited as the CEO in August 2019, where she has overseen the development of the Australian pork industry's first Sustainability Framework, which outlines clear goals and demonstrable measures that aim to position the industry as one of Australia's most sustainable proteins. Margo has previously held positions with Cattle Council of Australia, CSIRO, University of NSW, Rural Industries Research and Development Corporation and QLD Local Government. She was also an interim Director of Agricultural Innovation Australia (AIA).

MR MARK MCLEAN
[appointed 15 August 2026]

Mr McLean is currently Managing Director/Co-owner of Riverhaven Enterprises & Top Multiplier Pty Ltd, a family-owned group of agricultural companies operating 2,300 sows on two independent pig farms in South Australia. Mr McLean has established a team involved in farming operations and a management structure including reporting and oversight to assist in the daily operations of these farm businesses. Mr McLean remains actively involved in the pork industry and has represented other Australian pork producers as an APL delegate since 2010 and been on the board of APL as a producer director since 2019.

Mr McLean has extensive experience in agribusiness, holding various roles over the past 25 years within agribusiness groups in the pork sector as well as other industry sectors. He holds an Associate Diploma in Applied Science (Farm Management) from the Adelaide University, SA.

MS GAIL OWEN
OAM, BA LLB (Hons), LLM, FAICD

Gail is an experienced chairperson and Board member, a Fellow of the Australian Institute of Company Directors, and an Order of Australia medal recipient. Gail is a lawyer specialising in commercial and energy law. In her role on the APL Board, Gail is Chair of the Audit, Risk and Corporate Governance Committee, and a member of the People and Culture Committee and the Nominations and Remuneration Committee.

INDEPENDENT DIRECTORS

DR TONY PEACOCK
BSc (Agric) (Hons), PhD, FTSE, FAICD

INDEPENDENT CHAIR

Tony Peacock is a reproductive scientist by training and a respected voice on innovation. He holds a PhD in Veterinary Science and BSc (Hons) in Agriculture from the University of Sydney, is a Fellow of the AICD and the Australian Academy of Technological Sciences and Engineering, and an Adjunct Professor at the University of Canberra. An expert in public-private innovation collaboration, Tony has led the Pig Research and Development Corporation, the Pest Animal Control CRC, the Invasive Animals CRC, and the Cooperative Research Centres Association. He is currently a Director of Peacock Consulting, the Marine Bioproducts CRC, Solutions for Manufacturing Advanced Regenerative Therapies (SMART) CRC and the CRC for Solving Antimicrobial Resistance in Agribusiness (CRC SAAFE), and previously chaired Wintermute Biomedical and Ten Carbon Chemistry.

MS SU MCCLUSKEY
[resigned 20 November 2025]
FCPA, FTSE, BCom, MAICD

Su is a Director of LiveCorp Ltd and Chair of the Crawford Fund and was the Special Representative for Australian Agriculture for the Australian Government (concluded 30 June 2025). Su was appointed as the Interim Chief Executive of the National Farmers Federation in August 2025. Su was a director of Australian Unity, AWN Rural Pty Ltd, a Commissioner for International Agricultural Research and the National Covid-19 Commission Advisory Board. She was also a member of the Independent Review Panel for CPA Australia, the Harper Review of Competition Policy, the Charities Review and the Regional Telecommunications Independent Review. Su was previously a director of Energy Renaissance, the Foundation for Young Australians and the NSW Rice Marketing Board. Su was the CEO of the Regional Australia Institute and the Council of Rural Research and Development Corporations and the Executive Director of the Office of Best Practice Regulation.

Su has held senior positions with the Business Council of Australia, the National Farmers' Federation and the Australian Taxation Office. She was named the Westpac/ Australian Financial Review Regional Women of Influence in 2013 and received the Women in Agribusiness award in 2014 for outstanding contribution to policy development. Su is also a beef cattle farmer at Yass, NSW. Su was the Chair of the APRIL Audit and Risk Committee until 20 November 2025.

MR MATTHEW NORTON
[appointed 20 November 2025]
BAppSc, Fellow of the Australian Rural leadership Foundation (FARLF)

Matt is a recognised leader in land use planning and environmental compliance for Australia's livestock industries, with more than a decade of direct experience in pork and intensive livestock production. He is a Founder and Director of Agricultural Development Services Australia (AgDSA), where he leads business operations and client delivery for agricultural developments across Australia. Matt is a current member of Australian Pork Limited's Environmental Technical Panel and a Fellow of the Australian Rural Leadership Foundation. He has broad-ranging experience in the interaction between the pork industry and the built and natural environment, together with feasibility assessment and due diligence that balances financial viability with regulatory compliance. Matt has been a key contributor to shaping industry policy, translating scientific principles into policy and practical industry guidance. A regular conference presenter and industry advocate, Matt is an active mentor and a strong champion of developing the next generation of agricultural professionals.

CHIEF SCIENTIST DIRECTOR POSITION

PROF JOHN PLUSKE
BSc (Agric) (Hons), PhD (UWA), RAnNutr, R Anim Sci, FAPSA

Professor John Pluske is the Chief Scientist for the Australian Pork Industry, holds a position as Honorary Professorial Fellow at The University of Melbourne, is a partner in SciEcons Consulting, and a Fellow of the Australasian Pig Science Association (2015). Previously, Professor Pluske was at Murdoch University where he held numerous senior administrative and research positions whilst conducting research, teaching and outreach activities. Dr Pluske's extensive research and academic career spanning more than 30 years has focused predominately on the nutrition and digestive physiology of pigs, particularly lactating sows and their piglets, and nursery pigs. Other research interests encompass alternatives to antimicrobials in pig diets, sow nutrition, roles of nutrition and the environment in modifying immune function and the gastrointestinal microbiota, feedstuff evaluation, and controlling enteric diseases in pigs without antimicrobials.

MEMBER NOMINATED DIRECTORS

PROFESSOR ROBERT VAN BARNEVELD
BAgrSci (Hons), PhD, RAnNutr, FAICD

Professor van Barneveld has been Group CEO and Managing Director of the SunPork Group of Companies since 2016. In addition, Professor van Barneveld was Chair of Autism CRC Ltd until 30 June 2026. He is a former Director of Australian Pork Ltd and the ASX-listed Ridley Corporation. Professor van Barneveld has a PhD in pig nutrition and formerly worked as a consultant scientist and nutritionist in Australia and overseas for more than 30 years. Professor van Barneveld is the current Chair of the Audit and Risk Committee.

DR JESSICA CRAIG
BAnVetBioSc (Hons), PhD

Dr Jessica Craig is the Research and Innovation Manager for JBS Pork Australia and has 14 years of experience in the Australian pig industry, leading research teams and delivering impactful research. Previously, Jess has held the positions of Research Scientist and Technical Officer at JBS Pork (formerly Rivalea), the former as part of the APRIL Industry Placement Program (IPP) in 2019. She holds a PhD in Animal Science from Murdoch University and Bachelor of Animal and Veterinary Bioscience (Honours) from the University of Sydney. Jess is actively involved in the Australian industry, has led numerous APRIL and/or APL-funded research projects, and has built meaningful relationships with other stakeholders within the industry during her career in animal science. She is currently the President of the Australasian Pig Science Association (APSA) and member of the JBS Pork Australia Animal Ethics Committee. Jess holds technical expertise in reproduction, animal physiology, applied animal sciences, animal nutrition, health and welfare.

PROFESSOR FRANK DUNSHEA
BAgrSci (Hons), PhD, FNSA, FAPSA, FAAAS, FIUNS, RegAnimSci

Frank Dunshea is a Redmond Barry Distinguished Professor and Chair of Agriculture at The University of Melbourne and Professor of Animal Growth and Development at the University of Leeds. He has had a research career spanning almost 40 years in farm animal and biomedical research. His area of expertise is in growth physiology and nutrition and understanding the interactions between the animal and the animal's environment. His research has had a high scientific impact and the results of much of his research have been rapidly adopted by industry. He has maintained a balanced approach to research, combining fundamental with applied research, providing commercial and public good outcomes. Frank is committed to ensuring that all animal industries operate in a responsible and sustainable manner and much of his work has focused on improving efficiency through reducing inputs and outputs while maintaining product quality and consumer health.

MR NEIL FERGUSON
BBus (Agric)

Neil is CEO of Westpork, an integrated meat business. Westpork's core business has traditionally focused on its pork operation located throughout Southwest Western Australia. Recently Westpork has taken control of Dardanup Butchering Company which operates a Multispecies abattoir and Food Service business. He is also Chairman of the Western Australian Agricultural Produce Commission. Currently an APL Delegate. He holds a Bachelor of Agribusiness. Neil commenced his current role in 1997. Before his involvement in the pork industry, he worked in the stockfeed and chicken industries.

DIRECTORS MEETINGS

The number of Directors' meetings (including meetings of Board Committees) and number of meetings attended by each of the Directors of the Company during the financial year are:

DIRECTOR		BOARD OF DIRECTORS	AUDIT AND RISK COMMITTEE	R&D ADVISORY COMMITTEE	EDUCATION ADVISORY COMMITTEE
Ms Gail Owen	Eligible	5	4	–	–
	Attended	5	3	–	–
Ms Margo Andrae	Eligible	5	–	–	–
	Attended	5		–	–
Dr Tony Peacock	Eligible	5	–	1	–
	Attended	5		1	–
Ms Su McCluskey resigned 20 November 2025	Eligible	2	1	–	–
	Attended	1	1	–	–
Mr Matthew Norton appointed 20 November 2025	Eligible	3	3	–	–
	Attended	3	3	–	–
Dr John Pluske	Eligible	5	–	5	4
	Attended	5		4	4
Professor Robert van Barneveld	Eligible	5	3	–	4
	Attended	5	3	–	4
Dr Jessica Craig	Eligible	5	–	–	4
	Attended	5		–	4
Professor Frank Dunshea	Eligible	5	–	–	4
	Attended	5		–	4
Mr Neil Ferguson	Eligible	5	4	–	–
	Attended	4	4	–	–

PERFORMANCE MEASUREMENT

The Company evaluates its performance against objectives, milestones and targets as set out in the strategic plan (available at APRIL Strategic Plan 2022–2025), and against the uptake of research outcomes, where appropriate, by Industry. Progress against activities is reported to Members annually. A new Strategic Plan for 2026–2029 is in the final stages of approval.

MEMBERSHIP

The Company is limited by guarantee. As at 30 June 2026, six organisations continue as Ordinary Members and one organisation continues as a Non-Voting Member of the Company.

In the event of a winding up where there are insufficient assets to pay all liabilities, each of the members are required to contribute $10 each which would result in total additional funds of $70.

LEAD AUDITOR'S INDEPENDENCE DECLARATION

The lead auditor's independence declaration is set out on the following page and forms part of the Directors' Report for the financial year ended 30 June 2026.

This report is made in accordance with a resolution of the Directors:

Dr Tony Peacock
Chair

21 September 2026
Canberra

INDEPENDENCE DECLARATION

30 JUNE 2026

RSM Australia Partners

Equinox Building 4, Level 2, 70 Kent Street Deakin ACT 2600
GPO Box 200 Canberra ACT 2601

T +61 (0) 2 6217 0300
F +61 (0) 2 6217 0401

www.rsm.com.au

AUDITOR'S INDEPENDENCE DECLARATION

As lead auditor for the audit of the financial report of Australasian Pork Research Institute Ltd for the year ended 30 June 2026, I declare that, to the best of my knowledge and belief, there have been no contraventions of:

(i) the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and

(ii) any applicable code of professional conduct in relation to the audit.

RSM AUSTRALIA PARTNERS

MICHAEL GEORGE
Partner

Canberra, Australian Capital Territory
Dated: 22 September 2026

THE POWER OF BEING UNDERSTOOD
AUDIT | TAX | CONSULTING

RSM Australia Partners is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any jurisdiction.

RSM Australia Partners ABN 36 965 185 036

Liability limited by a scheme approved under Professional Standards Legislation

STATEMENT OF INCOME AND RETAINED SURPLUS

FOR THE YEAR ENDED 30 JUNE 2026

	NOTE	2026	2025
		$	$
Revenue	2	2,345,833	2,879,072
Expenses			
Research Programme costs	3	(1,481,426)	(2,144,845)
Management Expenses	4	(589,754)	(593,734)
Other expenses	5	(293,993)	(287,604)
Surplus/(deficit) from operating activities		**(19,340)**	**(147,111)**
Financial income	6	238,837	253,551
Net finance income / (expense)		238,837	253,551
Surplus/(deficit) before income tax		**219,497**	**106,440**
Tax expense		–	–
Surplus/(deficit) for the period		**219,497**	**106,440**
Retained surplus brought forward		**4,357,093**	**4,250,653**
Retained surplus carried forward		**4,576,590**	**4,357,093**

The above statement of income and retained surplus should be read in conjunction with the accompanying notes

STATEMENT OF FINANCIAL POSITION

AS AT 30 JUNE 2026

	NOTE	2026	2025
		$	$
ASSETS			
Current assets			
Cash and cash equivalents	8	857,925	5,707,760
Investments	9	4,601,587	–
Trade and other receivables	10	219,881	272,442
Other Assets	11	94,440	68,114
Total current assets		**5,773,833**	**6,048,316**
Total assets		**5,773,833**	**6,048,316**
LIABILITIES			
Current liabilities			
Trade and other payables	12	462,648	769,343
Unearned Income	13	627,517	823,936
Employee provisions	14	92,516	97,944
Total current liabilities		**1,182,681**	**1,691,223**
Non-current liabilities			
Employee provisions	14	14,561	–
Total non-current liabilities		**14,561**	**–**
Total liabilities		**1,197,243**	**1,691,223**
Net assets		**4,576,590**	**4,357,093**
Equity			
Retained surpluses		4,576,590	4,357,093
Total equity		**4,576,590**	**4,357,093**

The above statement of financial position should be read in conjunction with the accompanying notes

STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 30 JUNE 2026

	ACCUMULATED SURPLUSES
	$
At 1 July 2024	**4,250,653**
Surplus for the year	106,440
At 30 June 2025	**4,357,093**
At 1 July 2025	**4,357,093**
Surplus for the year	219,497
At 30 June 2026	**4,576,590**

The above statement of cash flows should be read in conjunction with the accompanying notes

STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 30 JUNE 2026

	NOTE	2026	2025
		$	$
CASH FLOWS FROM OPERATING ACTIVITIES			
Receipts from Statutory Authority and Industry		2,323,798	3,383,545
Payments to suppliers and employees (inclusive of GST)		(2,810,883)	(3,152,135)
Net cash (used in)/from operating activities		**(487,085)**	**231,410**
CASH FLOWS FROM INVESTING ACTIVITIES			
Interest received		238,837	253,551
Purchase of Term Deposits		(4,601,587)	–
Net cash used in investing activities		**(4,362,750)**	**253,551**
CASH FLOWS FROM FINANCING ACTIVITIES			
Repayment of lease liability		–	–
Net cash used in financing activities		**–**	**–**
Net (decrease)/increase in cash and cash equivalents		(4,849,835)	484,961
Cash and cash equivalents at beginning of financial year		5,707,760	5,222,799
Cash and cash equivalents at end of financial year	8	**857,925**	**5,707,760**

The above statement of cash flows should be read in conjunction with the accompanying notes

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 30 JUNE 2026

NOTE 1. SIGNIFICANT ACCOUNTING POLICIES

Australasian Pork Research Institute Limited is a public company incorporated and domiciled in Australia. The financial statements are presented in Australian dollars, which is Australasian Pork Research Institute Limited's functional and presentation currency.

The Company is a not-for-profit entity.

The financial report was authorised for issue by the Directors on 21 September 2026.

The principal accounting policies adopted in the preparation of the financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

NEW OR AMENDED ACCOUNTING STANDARDS AND INTERPRETATIONS ADOPTED

The company has adopted all of the applicable new or amended Accounting Standards and Interpretations issued by the Australian Accounting Standards Board ('AASB') that are mandatory for the current reporting period.

Any new or amended Accounting Standards or Interpretations that are not yet mandatory have not been early adopted.

BASIS OF PREPARATION

These general purpose financial statements have been prepared in accordance with Australian Accounting Standards – Simplified Disclosures and Interpretations issued by the Australian Accounting Standards Board ('AASB') and the Corporations Act 2001, as appropriate for not-for-profit oriented entities.

Subsection 295 (3A)(a) of the *Corporations Act 2001* does not apply to Australasian Pork Research Institute Limited as the company is not required to prepare consolidated financial statements by Australian Accounting Standards.

Historical cost convention

The financial statements have been prepared under the historical cost convention.

GOODS AND SERVICES TAX ('GST') AND OTHER SIMILAR TAXES

Revenues, expenses and assets are recognised net of the amount of associated GST, unless the GST incurred is not recoverable from the tax authority. In this case it is recognised as part of the cost of the acquisition of the asset or as part of the expense.

Receivables and payables are stated inclusive of the amount of GST receivable or payable. The net amount of GST recoverable from, or payable to, the tax authority is included in other receivables or other payables in the statement of financial position.

Cash flows are presented on a gross basis. The GST components of cash flows arising from investing or financing activities which are recoverable from, or payable to the tax authority, are presented as operating cash flows.

Commitments and contingencies are disclosed net of the amount of GST recoverable from, or payable to, the tax authority.

NOTE 1. SIGNIFICANT ACCOUNTING POLICIES (continued)

CURRENT AND NON-CURRENT CLASSIFICATION

Assets and liabilities are presented in the statement of financial position based on current and non-current classification.

An asset is classified as current when: it is either expected to be realised or intended to be sold or consumed in the company's normal operating cycle; it is held primarily for the purpose of trading; it is expected to be realised within 12 months after the reporting period; or the asset is cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least 12 months after the reporting period. All other assets are classified as non-current.

A liability is classified as current when: it is either expected to be settled in the company's normal operating cycle; it is held primarily for the purpose of trading; it is due to be settled within 12 months after the reporting period; or there is no unconditional right to defer the settlement of the liability for at least 12 months after the reporting period. All other liabilities are classified as non-current

EMPLOYEE BENEFITS

Short-term employee benefits

Liabilities for wages and salaries, including non-monetary benefits, annual leave and long service leave expected to be settled wholly within 12 months of the reporting date are measured at the amounts expected to be paid when the liabilities are settled.

Other long-term employee benefits

The liability for annual leave and long service leave not expected to be settled within 12 months of the reporting date are measured at the present value of expected future payments to be made in respect of services provided by employees up to the reporting date using the projected unit credit method. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields at the reporting date on national government bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

Wages and salaries

Liabilities for wages, salaries and annual leave that are expected to be wholly settled within 12 months of reporting date, represent present obligations resulting from employee's services provided to reporting date, are measured as the undiscounted amounts based on remuneration wage and salary rates that the Company expects to pay as at reporting date including related on-costs.

Non-accumulating non-monetary benefits are expensed based on the net marginal cost to the Company as the benefits are taken by the employees.

PROVISIONS

A provision is recognised in the Statement of Financial Position when the Company has a present legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money of the risks specific to the liability.

RESEARCH PROJECT COSTS

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in the Statement of Income and Retained Surplus as an expense as incurred.

FOREIGN CURRENCY TRANSLATION

Foreign currency transactions and balances

Foreign currency transactions are translated into the functional currency of the Company, using the exchange rates prevailing at the dates of the transactions (spot exchange rate). Foreign exchange gains and losses resulting from the settlement of such transactions and from the re-measurement of monetary items at year end exchange rates are recognised in profit or loss.

FAIR VALUE MEASUREMENT

When an asset or liability, financial or non-financial, is measured at fair value for recognition or disclosure purposes, the fair value is based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date; and assumes that the transaction will take place either: in the principal market; or in the absence of a principal market, in the most advantageous market.

Fair value is measured using the assumptions that market participants would use when pricing the asset or liability, assuming they act in their economic best interests. For non-financial assets, the fair value measurement is based on its highest and best use. Valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, are used, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

CRITICAL ACCOUNTING JUDGEMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts in the financial statements. Management continually evaluates its judgements and estimates in relation to assets, liabilities, contingent liabilities, revenue and expenses. Management bases its judgements, estimates and assumptions on historical experience and on other various factors, including expectations of future events, management believes to be reasonable under the circumstances. The resulting accounting judgements and estimates will seldom equal the related actual results.

NOTE 2. REVENUE

	2026	2025
	$	$
Commercialisation revenue	317,414	335,411
Membership fees	1,150,000	1,220,000
Participant and corporate partner fees	610,000	655,000
Research and project co-funding	216,419	668,661
Other contribution and government grant	52,000	–
Total income from operating activities	**2,345,833**	**2,879,072**

ACCOUNTING POLICY

Research and project co-funding

Revenue generated from members and participants co-contributions to research project is recognised upon full completion of each research project, when the specific performance obligations have been met. Prior to project completion, co-contributions are classified as unearned income in the statement of financial position as a liability.

Membership fees

Membership fees comprise annual contribution, membership, and fees upon cessation of membership. This revenue is recognised upon invoicing in accordance with the membership agreement.

Participant and corporate partner fees

Participant and corporate partner fees comprise annual participant and corporate partner fee under the new APRIL Participant Agreement. This revenue is recognised upon invoicing in accordance with the participant and corporate partner agreement.

Commercialisation revenue

Commercialisation revenue is recognised on quarterly basis upon delivery of specific performance obligations.

Grants

Grant revenue is recognised when the company satisfies the specific performance obligations stated within the funding agreements. The grant will be classified as unearned income in the statement of financial position as a liability until those obligations are met.

NOTE 3. RESEARCH PROGRAM AND OTHER COST

	2026	2025
	$	$
Program management administration costs	29,336	45,609
Student and enterprise awards	160,453	199,753
Project expenses	788,004	1,415,483
Basefunding expenses	484,000	484,000
Participant benefits expenses	19,633	–
Total research program and other costs	**1,481,426**	**2,144,845**

NOTE 4. MANAGEMENT EXPENSES

Management fees and employment related expenses	589,754	593,734
Total management expenses	**589,754**	**593,734**

NOTE 5. OTHER EXPENSES

Directors' fees	104,020	91,915
Commercialisation costs	80,071	110,873
Legal fees	–	6,890
Travel	19,441	15,145
Other	90,461	62,781
Total other expenses	**293,993**	**287,604**

NOTE 6. FINANCIAL INCOME

Interest income from investments and cash and cash equivalents	238,837	253,551
Total financial income	**238,837**	**253,551**

ACCOUNTING POLICY

Interest income is recognised in the Statement of Income and Retained Surplus as it accrues.

NOTE 7. INCOME TAX EXPENSE

The Company is a non-profit scientific institution and as such the Company's Constitution prohibits the distribution of income and assets to members except as bona fide compensation for services or goods provided to, or expenses incurred on behalf of, the Company. Accordingly, the Company is not subject to income tax.

NOTE 8. CASH AND CASH EQUIVALENTS

	2026	2025
	$	$
Cash at bank	857,925	1,086,164
Term deposits – maturity less than 3 months	–	4,621,596
Total cash and cash equivalents	**857,925**	**5,707,760**

The Company holds term deposits with interest rates of between 4.20% and 5.25%.

ACCOUNTING POLICY

Cash and cash equivalents comprise cash balances, at call deposits and term deposits with an original maturity of 3 months or less. Bank overdrafts that are repayable on demand and form an integral part of the Company's cash management are included as a component of cash and cash equivalents for the purpose of the Statement of Cash Flows.

NOTE 9. INVESTMENTS

Term deposits – maturity more than 3 months	4,601,587	–
Total investments	**4,601,587**	**–**

The Company holds investments with an interest rate of 5.25%.

NOTE 10. TRADE AND OTHER RECEIVABLES

Trade receivables	13,750	153,158
Other receivables	206,131	119,284
Total trade and other receivables	**219,881**	**272,442**

NOTE 11. OTHER CURRENT ASSETS

Prepayments	94,440	68,114
Total other current assets	**94,440**	**68,114**

NOTE 12. TRADE AND OTHER PAYABLES

	2026	2025
	$	$
Trade and other payables	462,648	769,343
Total trade and other payables	**462,648**	**769,343**

NOTE 13. UNEARNED INCOME

Contract liabilities	627,517	823,936
Total unearned income	**627,517**	**823,936**

ACCOUNTING POLICY

Contract liabilities

Contract liabilities represent the company's obligation to transfer goods or services to a customer and are recognised when a customer pays consideration, or when the company recognises a receivable to reflect its unconditional right to consideration (whichever is earlier) before the company has transferred the goods or services to the customer.

NOTE 14. PROVISIONS

Current	92,516	97,944
Non-current	14,561	–
Total provisions	**107,077**	**97,944**

Current provisions decreased during the year as annual leave balances were utilised.

NOTE 15. REMUNERATION OF AUDITORS

During the financial year the following fees were paid or were payable for services provided by RSM Australia Pty Ltd, the auditor of the company.

Audit services – RSM Australia Pty Ltd		
Audit of the financial statements	17,600	16,800
Total remuneration of auditors	**17,600**	**16,800**

NOTE 16. KEY MANAGEMENT PERSONNEL DISCLOSURES

The following were key management personnel of the Company for the entire reporting period, unless otherwise stated:

Directors

1. Ms Margo Andrae [resigned 31 July 2026] – MBA, MAICD
2. Ms Gail Owen – OAM, BA LLB (Hons), LLM, FAICD
3. Dr Tony Peacock – BSci (Agric) (Hons), PhD, FTSE, FAICD
4. Ms Su McCluskey [resigned 20 November 2025] – FCPA, FTSE, BCom, MAICD
5. Mr Matthew Norton [appointed 20 November 2025] – BAppSc, FARLF
6. Dr John Pluske – BSc (Agric)(Hons), PhD (UWA), RAnNutr, RegAnimSci, FAPSA
7. Professor Robert van Barneveld – BAgrSci (Hons), PhD, RAnNutr, FAICD
8. Dr Jessica Craig – BAnVetBioSc (Hons), PhD
9. Professor Frank Dunshea – BAgrSci (Hons), PhD, FNSA, FAPSA, FAAAS, FIUNS, RegAnimSci
10. Mr Neil Ferguson – BBus (Agric)
11. Mr Mark McLean [appointed 15 August 2026] – Associate Diploma in Applied Science (Farm Management)

Executives

12. Dr Charles Rikard-Bell – BSc.Agr, MSc, PhD

KEY MANAGEMENT PERSONNEL TRANSACTIONS WITH THE COMPANY

During the year the Company transacted with entities for which key management persons hold positions that result in them having control or significant influence over the financial or operating policies of these entities. The terms and conditions of the transactions with key management personnel and their related parties were no more favourable than those available, or which might reasonably be expected to be available, on similar transactions to non-key management personnel related entities on an arm's length basis.

Compensation

The aggregate compensation made to directors and other members of key management personnel of the company is set out below (2025: includes the new Executive Officer and Chief Scientist roles):

	2026	2025
	$	$
Aggregate compensation	471,383	527,696
Total key management personnel	**471,383**	**527,696**

NOTE 17. RELATED PARTY DISCLOSURES

Transactions with key management personnel related entities. In the following table, superscripts refer to the key management personnel affiliations (from the numbered list of directors in Note 16) with each related party. Net transactions with the Company by director related entities were as follows:

	2026	2025
	$	$
Australian Pork Ltd (1,2,6,11)	91,086	144,433
SunPork Group (7)	288,653	548,423
The University of Queensland (5,7)	143,110	80,031
The University of Melbourne (6,9)	94,521	107,987
Australasian Pig Science Association (6,8,9)	–	10,227
JBS Pork Australia (8)	277,207	215,516
SciEcons Consulting (9)	167,641	149,962
The University of New England (5,7)	6,364	21,973
University of Canberra (3)	–	10,644
Westpork Pty Ltd (10)	–	1,786
Current payables		
Trade payables to related parties	110,710	218,392

Transactions with key management personnel related entities consist of the receipt of membership fees and commercialisation income, and the payment of research costs, consultancy fees and costs related to the Company's Industry Placement Program.

Terms and conditions

All transactions were made on normal commercial terms and conditions and at market rates.

NOTE 18. COMMITMENTS

The Company has entered into Research and Development contracts which require the Company to make future cash payments to counterparties once certain obligations have been performed by those counterparties.

At 30 June 2026 these commitments (exclusive of GST) total $1,915,297 (2025: $1,634,123) and will be funded by cash balances and future receipts from member and research participant contributions.

In addition, the Company has approved, but not contracted, research project commitments totalling $1,563,805 (2025: $844,281).

NOTE 19. SUBSEQUENT EVENTS

No matter or circumstance has arisen since 30 June 2026 that has significantly affected, or may significantly affect the Company's operations, the results of those operations, or the Company's state of affairs in future financial years.

NOTE 20. REGISTERED OFFICE

The address of the Company's registered office is Level 2, 2 Brisbane Avenue, Barton, ACT 2600.

DIRECTORS DECLARATION

IN ACCORDANCE WITH THE RESOLUTION OF THE DIRECTORS OF AUSTRALASIAN PORK RESEARCH INSTITUTE LIMITED MADE PURSUANT TO SECTION 295(5)(A) OF THE CORPORATIONS ACT 2001, THE DIRECTORS DECLARE THAT:

- the attached financial statements and notes comply with the Corporations Act 2001, the Australian Accounting Standards – Simplified Disclosures, the Corporations Regulations 2001 and other mandatory professional reporting requirements;
- the attached financial statements and notes give a true and fair view of the company's financial position as at 30 June 2026 and of its performance for the financial year ended on that date; and
- there are reasonable grounds to believe that the company will be able to pay its debts as and when they become due and payable.

On behalf of the Directors

Dr Tony Peacock
Chair

21 September 2026
Canberra

Dr Robert van Barneveld
Audit and Risk Committee Chair

21 September 2026
Canberra

INDEPENDENT AUDITOR'S REPORT

RSM Australia Partners

Equinox Building 4, Level 2, 70 Kent Street Deakin ACT 2600
GPO Box 200 Canberra ACT 2601

T +61 (0) 2 6217 0300
F +61 (0) 2 6217 0401

www.rsm.com.au

INDEPENDENT AUDITOR'S REPORT

TO THE MEMBERS OF

AUSTRALASIAN PORK RESEARCH INSTITUTE LTD

Opinion
We have audited the financial report of Australasian Pork Research Institute Ltd (APRIL), which comprises the statement of financial position as at 30 June 2026, the statement of profit or loss and other comprehensive income, the statement of changes in equity and the statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion, the accompanying financial report of APRIL is in accordance with the Corporations Act 2001, including:

(i) giving a true and fair view of APRIL's financial position as at 30 June 2026 and of its financial performance for the year then ended; and

(ii) complying with Australian Accounting Standards *Simplified Disclosures* under AASB 1060 *General Purpose Financial Statements – Simplified Disclosures for For-Profit and Not-for-Profit Entities*.

Basis for Opinion
We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of APRIL in accordance with the auditor independence requirements of the Corporations Act 2001 and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We confirm that the independence declaration required by the Corporations Act 2001, which has been given to the directors of APRIL, would be in the same terms if given to the directors as at the time of this auditor's report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information
The directors are responsible for the other information. The other information comprises the information included in APRIL's annual report for the year ended 30 June, 2026 but does not include the financial report and the auditor's report thereon.

THE POWER OF BEING UNDERSTOOD
AUDIT | TAX | CONSULTING

RSM Australia Partners is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any jurisdiction.

RSM Australia Partners ABN 36 965 185 036

Liability limited by a scheme approved under Professional Standards Legislation

Our opinion on the financial report does not cover the other information and accordingly we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Directors for the Financial Report
The directors of APRIL are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards – *Simplified Disclosures* under AASB 1060 *General Purpose Financial Statements – Simplified Disclosures for For-Profit and Not-for-Profit Entities* and the Corporations Act 2001 and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the ability of APRIL to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate APRIL or to cease operations, or have no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Report
Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

A further description of our responsibilities for the audit of the financial report is located at the Auditing and Assurance Standards Board website at: http://www.auasb.gov.au/auditors_responsibilities/ar4.pdf. This description forms part of our auditor's report.

RSM AUSTRALIA PARTNERS

Canberra, Australian Capital Territory
Dated: 22 September 2026

MICHAEL GEORGE
Partner

AUSTRALASIAN PORK RESEARCH INSTITUTE LTD

PO Box 466
Willaston SA 5118

APRI.COM.AU

Australasian
Pork Research
Institute Ltd
APRIL