Pork CRC Initiatives APN July 2016

By Dr Roger Campbell, Pork CRC CEO

**APRIL membership opportunity**

August 31 is the deadline for signing up as an inaugural member of Australasian Pork Research Institute Ltd (APRIL), with the transition from Pork CRC to APRIL progressing very nicely.

APRIL is likely to have at least 11 inaugural members and 12 counting APL, but welcomes more.

The APRIL board will be decided at the AGM this November and the first investment round, which is likely to be in 2018-2109, will be determined by the APRIL board and APRIL’s R&D Advisory Committee.

The establishment timetable for APRIL is outlined below. Membership responsibilities and advantages are detailed in the prospectus on Pork CRC’s website, but the bottom line is membership costs $75,000 per year, with initial membership for three years and continuing on a three year rolling basis. The first payment, as outlined in the timetable, is August 31, 2016, although this can be adjusted on request. The next (second) payment will be in 2020-2021.

**Members prioritised**

Members will have the right to nominate a director and will have a position on the R&D Advisory Committee, which will determine research and training priorities and recommend investment decisions to the APRIL board. Members will have access to all research outcomes, attend all reviews and attend the annual stakeholders meeting and AGM. They will play a major role in the sustainability and success of the Australian pork industry. Members will also be given priority for base funding of facilities, undergraduate and postgraduate training and industry placement opportunities through the Industry Placement Program, a Pork CRC initiative which has been a resounding success).

**Member advantages**

I encourage you to seriously consider APRIL membership. You may join as an organisation or as a producer/industry representative group, a consortium of producers or industry participants with like-minded aspirations and ideas. The means of becoming a member are endless and the advantages obvious.

With the signing deadline of August 31, a revised membership agreement will be sent to all potential members before June 30 or in early July.

If you’re interested or want more details, please contact me, Tel 08 8313-7683.

**APRIL timetable**

**- Issue member agreements and application form for comment by June 30, 2016**

**- Member agreements open for comment until July 28, 2016**

**- Signing version of member agreements, application form and foundation fee invoice issued 1st week of August (depending on comments received)**

**- Member agreements signed by August 31, 2016 and foundation fee paid unless alternative payment arrangement agreed with APRIL by August 31, 2016**

**- Pork CRC adopts new APRIL constitution and APRIL admits foundation members on September 30, 2016 at joint board meeting**

**- Strategic planning meeting held with members early October**

**- New board appointed at AGM November 23, 2016**

**Final reports**

We have received final reports on Projects 2C-115 (‘Establishing the underlying causes of pleurisy to enable the development of effective prevention and treatment measures’) and 4C-117 (‘Environmental impacts and resource use from Australian pork production assessed using life-cycle assessment’).

**Pleurisy project**

Although the pleurisy project was conducted in Queensland to identity pathogens likely to contribute to respiratory disease in the state, the results are probably applicable across Australia.

All 46 farms involved were coded so Pork CRC and the researchers have no idea who was involved. The pleurisy score on the batch of pigs (lungs) tested across farms ranged from 1.5% to 65%.

**Respiratory pathogens**

A large list of respiratory pathogens was found in the lungs, with the most prevalent being Mycoplasma hyopneumoniae and Streptococcus suis, found on 34 and 38 farms respectively. PCV2 was found in high concentration in samples from 29 farms. Other pathogens found were Pasteurella multocida (24 farms), Actinobacillus species (29 farms), Actinobacillus pleuropneumoniae (7 farms), M. hyorhinis (4 farms), M. flocculare (9 farms), S. porcinus (1 farm), S. minor (1 farm), Haemophilus parasuis (1 farm) and Bisgaard Taxon 10 (1 farm). Most farms had more than one species of bacteria.

**Plating up**

When considering bacteria levels in the affected lungs, which was determined by plate score, most bacteria were present in low numbers. However, some species, such as S. suis, P. multocida and A. pleuropneumoniae, were in high numbers, indicating they were potentially the pleurisy causative agents.

Estimation of the univariable odds ratio showed the crude risk of a positive result for M. hyopneumoniae was higher for pigs coming from batches with a batch pleurisy score greater than 10%, compared to those from batches with pleurisy scores less than 10%.

The high incidence of M. hyopneumoniae and PCV2 found in lungs is concerning, as there are vaccines for both organisms and the results suggest vaccination procedures for both should be revisited/reviewed.

S. suis was also found in 82% of lungs and while it is widely regarded as a commensal in the upper respiratory tract, the fact that it was the only bacteria found in the lungs of pigs from a farm with 38.5% pleurisy, suggests it warrants further consideration, including for control strategies.

**Sensitive results**

S. suis was used as an indicator organism for antibiotic resistance across the 46 farms, with the results showing that all isolates were sensitive to ceftiofur and all were resistant to tilmicosin and tulathromycin. However, individual farms showed resistance to four of the five antimicrobials tested.

The report has been sent to veterinarians and is available under the Research/Program 2 tab on Pork CRC’s website at [www.porkcrc.com.au](http://www.porkcrc.com.au)

I think the results are most valuable to the farms involved and their veterinarians, as they all differ in the pathogens found in the lungs and in antimicrobial resistance. The differences probably reflect differences in housing, vaccination procedures and antibiotic use. Ask your veterinarian if he or she can access your herd code number from the abattoir involved and then discuss your results relative to the others in the study.

**Big thanks**

I thank the abattoir involved, the veterinarians and the research team, ably led by Dr Conny Turni and Dr Peter McKenzie. I also thank all the producers whose pigs were assessed, as the outcomes should help improve the performance of all businesses involved and the industry in general.

For further information on the outcomes and their implications, email Conny (c.turni1@uq.edu.au)

**Emissions project**

**Carbon emissions 38% lower in Eco shelters and 88% of variability in systems with common effluent management systems is related to Herd Feed Conversion.**

Managed by Stephen Wiedemann, while he was with FSA Consulting, this project is the first study to benchmark greenhouse gas emissions from Australian pork across the full production system. This included emissions from feed production, housing, manure management and meat processing.

The project involved 14 units across different states – all were monitored over at least 12 months and provided all the data necessary for the project – for this, Pork CRC is most grateful.

Average emissions to the farmgate were 3.6 kg CO2-e / kg live weight pork and 6.36 +/- 1.03 kg CO2-e / kg wholesale (processed) pork. The lowest modelled emissions were from Queensland pork production (1.5 kg CO2-e /kg LW), which is similar to Queensland chicken meat production (1.3 kg CO2-e / kg LW).

**Emissions down**

Interestingly, deep litter housing resulted in a 38% reduction in GHG, compared to conventional housing and biogas capture with heat and power generation resulted in a 31-64% reduction in GHG emissions from conventional housing.

Outdoor production (in WA) also resulted in considerably reduced GHG emissions.

More interesting was the finding that for similar manure management systems 88% of the variability in GHG could be predicted from differences in herd feed conversion, making it the most important production related indicator of GHG emissions.

Across the farms, HFC ranged from 2.4 to 3.3 on a liveweight basis (3.2 to 4.3 on a carcass weight basis) and feed wastage ranged from 5.5% to 7.5% of total feed used. These values represented between 15.2 and 20.4 kg of feed lost per 100 kg of liveweight produced. Individual units within farms had HFC values approaching 3.8 on a liveweight basis.

**HFC harp**

We keep harping on about HFC as a driver of profitability, but these results show that it also influences carbon emissions from pork production, so a double whammy and clearly more needs to be done to reduce feed waste and improve HFC. Based on these results and those from Pork CRC’s benchmarking project, some producers have it under control and others have some way to go. Like reproduction, I think it best if we learn from one another, so we will concentrate on this KPI at our annual meeting this year.

**Informative report**

The report of Project 4C-117 is extremely informative and provides information across farms on most aspects of pork production, including veterinary costs, so is worth looking at. It is available under the Research/Program 4 tab on Pork CRC’s website at [www.porkcrc.com.au](http://www.porkcrc.com.au)

For further information, email Stephen (Stephen.wiedemann@integrityag.net.au) or Dr Rob Wilson ([rob@robwilsonconsulting.com.au](mailto:rob@robwilsonconsulting.com.au)).

[www.porkcrc.com.au](http://www.porkcrc.com.au)

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