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Spaced-out sows work it out

AUSTRALIAN researchers have demonstrated mixing sows at weaning, or after mating, has no long-term effect on welfare, according to Pork CRC CEO Roger Campbell.

"Excellent reproduction will be achieved, provided sows are appropriately fed and carefully managed," Dr Campbell said.

"Our researchers, who lead the world in sow welfare, have provided industry with practical solutions and the science behind why they work."

A large study (Pork CRC Project 1C-105) by Prof Paul Hemsworth, Animal Welfare Science Centre, University of Melbourne and scientists from Pork CRC participant Rivalea Australia, suggested minimal long-term impacts on reproduction and welfare from higher cortisol levels and aggression exhibited by sows immediately after mixing and at reduced floor space.

After investigating how floor spaces between 1.45sq m and 2.9sq m affected the welfare and performance of sows grouped within four days of mating, Prof Hemsworth, like his AWSC colleague Dr Jean-Loup Rault in an associated Pork CRC study (Project 1C-108), found aggressive interactions and cortisol levels at day two after mixing declined

with increasing floor space, but there were no effects at day 26.

Dr Campbell explained that although floor space between 1.45sq m and 2.9sq m had no long-term effects on sow welfare or reproduction, aggression and cortisol levels were markedly affected by floor space immediately after mixing.

"However, sows change their behaviour rapidly and these effects disappeared by day 26 and a corollary study showed the effects had actually disappeared by day nine," he said.

In this study the sows were floor fed 2.5kg daily, spread over four feeds.

They were housed in pens without partitions and the study ran for 72 weeks to cover all seasons.

The results differed from a similar Australian Pork Limited study at the same facility three years ago when the same effects of space and time on aggression and cortisol were observed and reported.

"The difference was that farrowing rate improved in a linear fashion with increasing space at mixing in the APL study and this was particularly evident in summer," Dr Campbell said.

"In Pork CRC's study, farrowing rate was some 10 percentage units higher (90-plus percent v 80

percent) than in the APL study and was unaffected by floor space.

"The other difference in the two studies was that in APL's the sows had never experienced group housing and the staff involved had never managed sows in groups.

"In the Pork CRC study, the sows and staff had experienced group housing, which may have contributed to better performance."

According to Dr Campbell, the bottom line for Australia's pork producers, the majority of whom (70 percent based on industry surveys) have moved to group housing, is there probably isn't an optimum or minimal floor space for group housed sows because they adapt rapidly to mixing and reduced floor space.

"Pork CRC results show aggression and cortisol levels immediately after mixing can be reduced by increased space," he said.

"This supports the mixing pen concept where sows are given more space in the week after grouping and then their space allowance can be reduced.

"Aggression at mixing and immediately after can't be eliminated and Pork CRC participant feedback is floor space of 1.8sq m to 2sq m supports good performance."

www.porkcrc.com.au



A number of group housed sows.

Leveraging pork industry structures for greater capability

I'VE written before about how membership of the National Farmers' Federation for Australian Pork Limited has resulted in a greater understanding of the pros and cons of the pork model for the provision of industry services to our members.

The ongoing project looking into the future of Australian farming's representative structures highlights some of the difficulties other commodity representative organisations have with their financial sustainability, alongside some state farming organisations.

In a nutshell, our model compares extremely well in terms of our industry support and financial structures and thanks should go to our industry forefathers who had the vision to set APL up the way it now is.

Similarly, as the research and development corporation for the pork industry, we have a view into the world of some of the other R&D bodies.

The story is similar – the completeness of the APL mandate across all industry services including R&D gives us some clear advantages in our capabilities and unity through the industry.

Other RDCs are presently looking at changing their structures; statutory bodies looking at 'industry-owned corporation' models for example.

There are also discussions between government and statutory RDCs about the future location of their organisations, which is causing some uncertainty



Point of View

by ANDREW SPENCER CEO



it is for an animal activist to post a few misrepresentative photos onto social media platforms to denigrate our industry.

While consumers have a low understanding of our industry, these activities can gain traction despite all our best intentions on our farms.

We know through our focus groups that in general, consumers and the community do not want to know the details of how their pork (or any meat) is produced.

They do however want the comfort of understanding that ethical people who care are looking after their best interests in the production of their meat.

They also want the option to find out more if they so desire at some point in the future.

Last month's article on transparency deals with some of the issues in this space.

Program three is Operational Effectiveness and refers very specifically to continuous improvement within APL's operations.

Our producers expect us to get the very best value out of their levies and the government likewise with matching contributions.

This applies just as much to the way we operate internally, and through new systems and processes we continually pursue increased bang for buck in corporate costs.

For a complete picture of Strategic Objective Five – Improving Capability, head to australianpork.com.au and check out the APL Strategic Plan 2015-2020.

around the future.

The bottom line is that through good luck or good management our industry has a fairly solid platform in terms of its industry services structures that have given us relative unity – at least through the majority of our production base.

However we still have some challenges in unifying the industry across the whole gamut of differing enterprise scales of production.

In other words, better engaging the smaller producers.

Strategic Objective Five of our APL Strategic Plan 2015-2020 is entitled 'Improving Capability'.

It deals with leveraging this positive platform for a more informed and knowledgeable industry, a better image and reputation for our industry with the community and a more effective and efficient APL providing services to industry.

The first program of Improving Capability is Applied Learnings.

It aims to apply the outcomes of our investments into better knowledge through R&D

projects throughout the industry.

In so doing, it recognises the paths to market and how they differ depending on the type of information being disseminated and applied.

For example, nutritional research outcomes can be relatively easily extended through the smaller number of industry nutritionists very quickly with direct outcomes.

Innovations around sow housing on the other hand, for example supporting the phase-out of sow stalls, is more complicated and requires a more direct interaction with individual pig producers and an understanding of their specific circumstances.

In future, this transfer of technological innovation is likely to also use new vehicles through IT solutions.

We at APL are in recognition of this shift, improving our understanding of new technologies and planning for their integration at a pace with which the industry can be comfortable.

The second program is Building Industry Image and Reputation.

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**Pig Industry
Calendar of Events**

2015

MAY 17 - 20 – Alltech Symposium, Lexington, US www.alltech.com

MAY 19 – APL Delegates' Forum, Crowne Plaza Coogee Beach, Sydney NSW Ph: 02 6285 2200 E: apl@australianpork.com.au

MAY 19 - 21 – VIV Russia, Moscow, Russia www.vivruusia.nl

JUN 4 - 6 – World Pork Expo, Des Moines, Iowa, US www.worldpork.org

JUN 11 - 13 – VIV Turkey, Istanbul, Turkey www.vivturkey.com

JUN 14 - 16 – Australian Pig Veterinarians Conference, Kingscliff, NSW E: apv@ava.com.au Ph: Rowan Wilson 0429 929 753

JUN 24 - 25 – International Symposium on Emerging and Re-emerging Pig Diseases, Kyoto, Japan www.emerging2015.com

AUG 9 - 12 – International Conference on Boar Semen Preservation, Illinois, US www.boarsemen2015.com

SEP 15 - 18 – Space 2015, Rennes, France www.space.fr

OCT 11 - 13 – Leman China Swine Conference, Nanjing International Exhibition Center, Nanjing, China www.cvm.umn.edu/lemanchina

NOV 22 - 25 – Australasian Pig Science Association conference, Melbourne, VIC www.apsa.asn.au

2016

JAN 20-22 – Banff Pork Seminar, Banff, Alberta Canada www.banffpork.ca

JAN 27 – Centralia Swine Research Update, Ontario, Canada www.centraliaswinereseach.ca

FEB 16 - 18 – VIV MEA, Abu Dhabi, UAE www.vivmea.nl

APR 18 - 20 – Global Feed & Food Congress, Antalya, Turkey www.ifif.org

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

MAY 25 - 26 – Pan Pacific Pork Expo, Gold Coast Convention and Exhibition Centre, QLD P: APL 02 6285 2200

JUN 7 - 10 – International Pig Veterinary Society/European Symposium of Porcine Health Management, Dublin, Ireland www.ipvs2016.com

SEP 6 - 8 – VIV China, Beijing, China www.vivchina.nl

NOV 15 - 18 – EuroTier, Hanover, Germany www.eurotier.com

How to supply event details: Send all details to Australian Pork Newspaper, PO Box 387, Cleveland, Qld 4163, fax: 07 3821 2637, email: ben@porknews.com.au

porknews.com.au

The word on biosecurity

IT'S been a while since I have focused on biosecurity and yes, there is plenty happening in this space both here in Australia and overseas.

First, in case you are not aware, porcine epidemic diarrhoea virus is now classified as a notifiable disease and categorised at level 4 under the Emergency Animal Disease Response Agreement.

The EADRA is the contractual arrangement that brings together the Commonwealth, State and Territory Governments and livestock industries to collectively and significantly increase Australia's capacity to prepare for, and respond to, emergency animal disease incursions. Notifiable essentially means that if PEDv is detected on farm it must be reported to the relevant state jurisdictions.

On the issue of category and cost sharing, Category 4 diseases are classified as being mainly production loss diseases. Though there may be international trade losses and local market disruptions, these would not be of a magnitude that would be expected to significantly affect the national economy.

The main beneficiaries of a successful emergency response to an outbreak of such a disease would be the affected livestock industries. In the case of a PEDv outbreak, the costs will be shared 20 percent by governments and 80 percent by the pork industry.

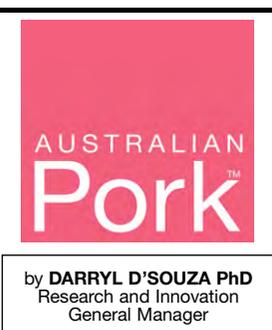
On another, what seems to be ever-on-going issue as far back as I can remember, is the resurgence of interest in miniature pigs and certainly people claiming to have mini pigs for sale.

I'm not an expert but I could almost swear that some of the mini pigs look too similar to feral piglets. Also, the retailer focus on outdoor pig production is causing issues with Australian Pork Limited receiving a number of requests from people wanting information on raising pigs outdoors.

While we are keen to ensure these individuals also understand the responsibilities around outdoor production systems, biosecurity, food safety and the need to have good management practices and quality assurance programs such as APIQ Free Range, I am firmly of the view that corners are being cut to satisfy this demand, thereby increasing the risks around biosecurity and food safety.

And from a consumer perspective, you only have to visit a 'farmers' market' to view the myriad unsubstantiated product labelling claims being made. It's a bit of a free for all really. Moving overseas to

of spreading the virus. In fact, based on a conservative risk assessment model, New Zealand's chances of getting PRRS from legally imported uncooked pork products are such that it would get one case every 1227 years. The NPPC is also working to remove PRRS-related restrictions in Australia and South Africa. The US and some other countries continue to assert that Australia's science-based sanitary and phytosanitary standards are a trade barrier, and industry groups such as the NPPC, supported by some members of Congress, are intensively lobbying US trade negotiators to get Australia to water down its SPS standards, including through discussions on the Trans-Pacific Partnership free trade agreement."



PEDv in North America; new PEDv outbreaks have certainly declined and re-infection of herds has also been relatively low over the North American winter period.

A good summary of this was provided by the Daily Livestock Report (Vol. 13, No. 674 April 14, 2015).

I have included excerpts from that report that provide a good overview of the US in particular.

"Piglet survival has been remarkable this year relative to one year ago and the improvement is not just because of PEDv. It is due to a sharp increase in the general health status of the US herd.

The other factor of piglet survival is a second year of very low incidence of porcine respiratory and reproductive syndrome virus.

This disease has been a plague for several years primarily because it mutates so readily and there is limited cross immunity between the serotypes.

Last year's significant reduction in PRRSv frequency was attributed largely to draconian biosecurity measures taken to fight PEDv. This year's low PRRSv figures support that conclusion."

The article noted one caveat in that North Carolina has been dealing with a highly virulent PRRSv strain since February 2015. I remember reading this article and having a chuckle at seeing the term 'draconian biosecurity measures' being used.

It prompted me to go back to one of my previous articles on biosecurity. In January 2014, I reported on the views articulated by the US National Pork Producers Council.

The NPPC reported in its capital update of December 20, 2013 that: "PRRS is not a food-safety issue, and there is negligible risk of PRRS transmission from the legal importation of pork from countries with the disease. Thanks to the work of experts nominated by NPPC to the New Zealand Independent Working Group and the New Zealand PRRS Expert Working Group, scientific evidence was used to illustrate the minimal risk

above views was suitably straight forward as well and went along the following lines:

To put it bluntly, I think this is a bit rich coming from a country that has struggled to manage PRRS and has seen a recent PED outbreak spread unabated to 20 states.

The US should perhaps spend more time focusing on its own SPS standards and biosecurity programs to achieve better outcomes for American producers, rather than seeking to undermine Australia's standards.

Furthermore, I hardly think a country that currently imports almost 150,000 tonnes of pork annually can be accused of protectionism.

Notwithstanding our rigorous SPS standards, US exports to Australia grew by more than 5 percent in the year to June 2013, accounting for about 40 percent of all imports.

So back to the implementation of draconian biosecurity measures, hopefully the NPPC now realises that far from being trade barriers, Australia's SPS standards and biosecurity programs are based on sound science and they work.

Moving on to Europe; the risk of African swine

fever spreading further into Europe from Poland remains at its highest level.

Additional outbreaks have been reported in wild boar and farm pig populations.

This has prompted the European Commission to create an ASF 'danger area' (refer to the map below).

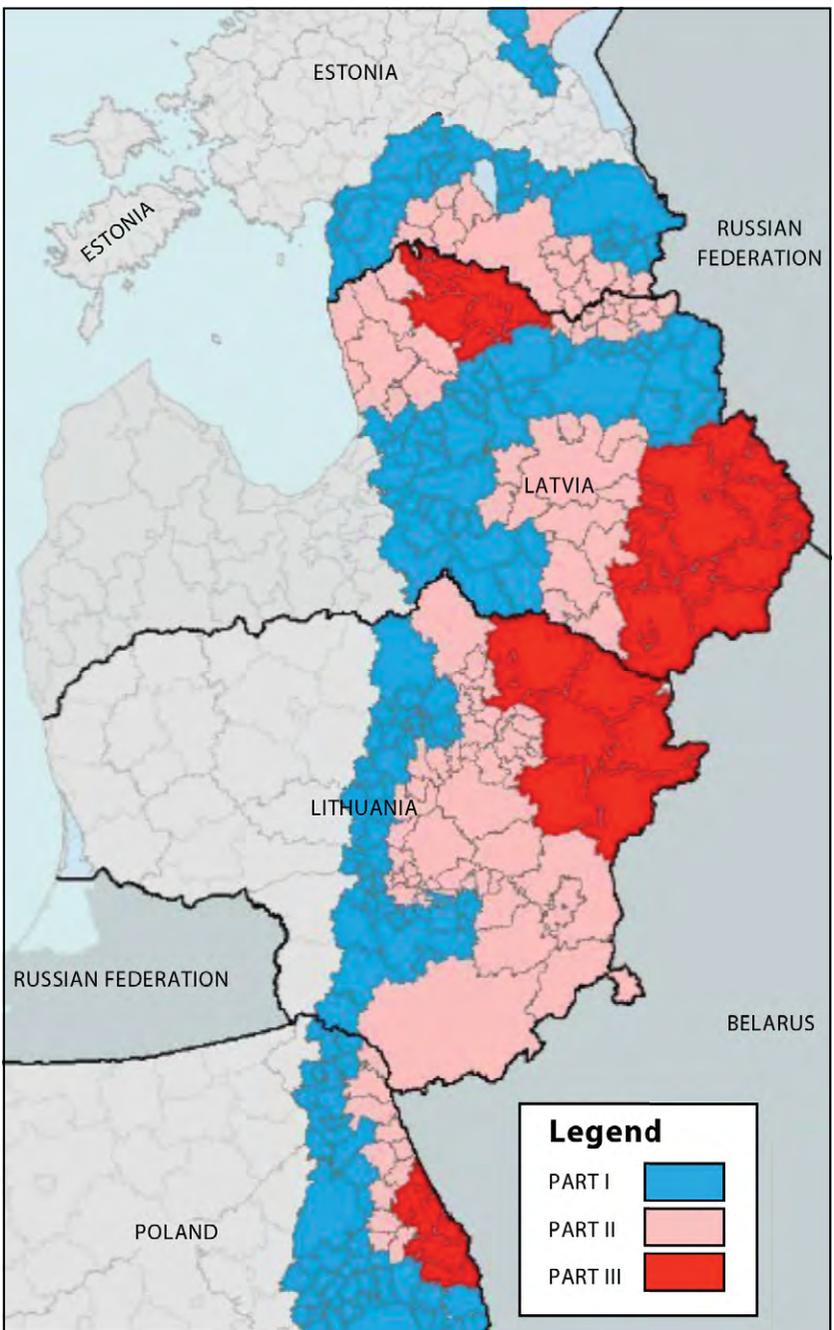
These danger areas (in blue) have been put in place to curb the spread of ASF into Europe, with increasing surveillance and reporting systems within these areas.

APL Research and Development call for tenders

On the home front, Research and Development priorities for 2015-16 have been identified by the Specialist Groups and approved by the R&D Advisory Committee.

Researchers are encouraged to respond to a call for tenders addressing these priorities: australianpork.com.au/wp-content/uploads/2013/09/2015-16-APL-RD-Call-for-Tenders.pdf

For further information on any of the topics discussed in this column, please do not hesitate to contact me on 02 6270 8804 or darryl.dsouza@australianpork.com.au



Source: GIW/Polska www.wetgiw.gov.pl

Sow science advances

BY now you will likely have received my summary of the Midwest Animal Science meetings I attended in Des Moines, Iowa, US in March this year.

The summary contains research outcomes on topics from grain processing to reproduction and welfare, most of which are relevant to Australian production systems, with one possible exception being the somewhat higher litter size of US, Canadian and Danish sows – in ascending order.

If you don't receive the summary, you're not on our producer distribution list.

If you want to get on the list, send me your name and email address.

My email address is roger.campbell@porkcrc.com.au and I look forward to yours.

It's well worth it, because a lot is happening in Australia and globally and we do our best to get the most relevant, timely material to you.

In this column I've summarised the results of a study investigating the effects of feeding level and lysine intake in late gestation and the lactation performance of Canadian sows and their piglets weaned at 19 or 26 days of age.

Gestation feeding

At the meeting, there were several papers on the nutrition of gestating sows and one or two on feeding between weaning and remating.

The bottom line seemed to be that there are few advantages of increasing feed intake at any point in gestation.

The results in Table 1 are from a US study in a commercial facility in which 1105



Initiatives

by DR ROGER CAMPBELL
CEO



females (PIC 1050) were used from day 90 of gestation until farrowing.

Treatments were in a 2x2x2 factorial arrangement, consisting of two parity groups (P1 or P2+), two standardised ileal digestible lysine intakes (10.7 or 20g/day), and two energy intakes (19.6 or 29.2MJ NE/day – equal to 1.81 and 2.73kg feed/day respectively).

Females were housed in group pens fitted with electronic sow feeders by parity level, blocked by weight and individually assigned to the dietary treatments within each weight block.

Increasing feed/energy intake in late gestation significantly increased still birth rate in sows, but not gilts and this was reflected in born alive.

Increasing feed intake in late gestation did increase birth weight (by 30g), but had no effect on pre-weaning survival.

Older parity sows, as you'd expect, gave birth to heavier piglets than gilts.

Interestingly, pre-weaning mortality was lower (better) for gilt litters than for sow litters.

I have followed up with the researchers on this and they say yes this is the case and reflect-

ive of commercial experience.

If they have a secret, I will try to dig it out.

Increasing lysine intake in late gestation reduced still birth rate and pre-weaning mortality, so this might be worth looking at as it increased cost per weaner pig by only 17 cents.

The researchers concluded there was no value in increasing feed/energy intake in late gestation and were equivocal about increasing lysine intake also.

There are many other gestation feeding results in the summary of the trip.

Danish lactation

I mentioned the lactation performance of DanBred sows in my April APN column.

Nothing special really in that the average piglet growth rate was only 216g/day, except they weaned 13-plus piglets, lost a massive amount of body weight and body protein in early lactation, but had a subsequent litter size of 18 total born.

I then found out that the reason for the large body weight loss in early lactation was probably because they built the sow's intake up over 17 days – something that should be avoided.

Canadian lactation

In Table 2 I summarised the lactation performance of Canadian sows.

The study involved 104 sows and their litters and investigated the effects of including omega-3 fatty acids in lactation diets (plus or minus), antibiotics in the nursery (plus or minus) diet and weaning age (19 and 26 days) on piglet performance to day 54 when all pigs moved out of the nursery.

There were no effects of fatty acids or antibiotics on sow or

piglet performance, so I have only shown the effects of weaning age in the table – the averages are each for 52 sows and their litters.

The sows would have to be considered prolific I think, with one of the consequences being a relatively high pre-weaning loss.

On the other hand, piglet growth to weaning was excellent and unaffected by lactation length.

It was also interesting that despite pigs weaned at 26 days being heavier at weaning than those weaned at 19 days, the opposite was true at 54 days of age (end of nursery), with those weaned at 19 days being significantly heavier than those weaned at 26 days.

The researchers found that those weaned at 26 days had a lower immune status than those weaned at 19 days, but regardless of the cause, the results show there is more than weaning weight per se involved in determining post-weaning performance.

Lactation advances

I discussed what advances have been made in lactation research and management in the US with a number of people in research and development and industry positions.

There have been very few.

Some changes or recommendations mentioned included:

- Introduction of automatic feeders in lactation sheds, so sows are not without feed (much);

- Reducing the body condition score of sows entering lactation to 2.5;

- Not bump feeding in late gestation because this reduces lactation feed intake and has few, if any, positive effects on the sow or litter; and
- Maximising feed intake in early lactation.

They have only recently discovered betaine and are seeing quite a substantial improvement in litter size, especially in older sows when betaine is included in the lactation diet at 0.2 percent.

The one change they have seen is that the current genotypes are much more resilient to nutrient restriction in lactation and it is very difficult to affect the weaning to remating interval, regardless of feed intake and sow weight loss in lactation.

The Americans also believe that genetic companies (one at least) are more likely to improve birth weight within nine months than any nutritional changes or strategy.

If you have any questions, or want further information, flick me an email.

I encourage you to send me your name and email address so I can add you to my Pork CRC producer distribution list.

www.porkcrc.com.au

Weaning age (day)	19	26
Total born	15.7	16
Born alive	14.75	14.7
Weaned	11.2	11.7
Weaning weight (kg)	6.4	8.3
Piglet daily gain in lactation (kg)	0.25	0.25
Weight at 54 days (kg)	20.2	18.7
Daily gain in nursery (kg)	0.38	0.37

Table 2: Lactation performance of prolific Canadian sows and effect of weaning age on weaning weight and piglet performance to 54 days of age (end of nursery).

Energy intake (MJ NE/day)	19.6				29.2				Significance
	Gilt		Sow		Gilt		Sow		
Lysine intake (g/day)	10.7	20	10.7	20	10.7	20	10.7	20	
Parity	Gilt	Sow	Gilt	Sow	Gilt	Sow	Gilt	Sow	
Sow weight gain (kg)	13.4	10.5	16.4	13.5	18.4	18.5	24.5	23	Lysine x energy parity x energy
Born alive	13.4	14.3	13.4	13.7	13.2	13.5	13.3	14.1	Parity x energy
Still birth rate (%)	3.5	5.1	3.2	3.7	3.6	6.9	3.2	6.1	Parity x energy lysine
BA birth weight (kg)	1.28	1.36	1.28	1.39	1.3	1.4	1.31	1.41	Energy parity
Fostered litter size	14.5	14.2	14.4	13.7	14.6	13.9	14.3	14	NS
PWM (%)	10.3	13.7	8	13.1	8.9	13.3	8.4	12.1	Lysine parity

Table 1: Effects of energy and lysine intake between day 90 of gestation and farrowing on the reproductive performance of gilts and sows.

Aussie pork industry takes the lead for a cleaner environment

THE Australian pork industry has achieved another environmental milestone as the only agricultural industry to be granted contracts under the Federal Government's Emissions Reduction Fund.

The pork industry has had four successful projects recognised in the Federal Government's first ERF auction, which represents a commitment of 290,000 tonnes of carbon dioxide to be abated.

All piggery projects were focused on the capture of biogas produced by the anaerobic digestion of organic matter in effluent systems.

Effluent is collected from

pig sheds and conveyed to an anaerobic treatment system, which could be a covered pond or a purpose-built digester.

The biogas can then be used to displace fossil fuel used for heating or for combined heat and power generation.

The participation of Australian pork producers in the ERF scheme demonstrates the industry's proactive approach in adopting renewable energy technology, reducing resource use and the industry's environmental footprint.

Credits generated through the ERF will assist producers significantly and reduce pay-back periods for implementa-

tion of these biogas systems.

Over the seven-year life of these contracts, the emissions reduction will be the equivalent of getting 11,571 houses (four-person house) off the grid for one year, or if averaged over the seven years, taking 1653 homes off the grid each year.

Australian Pork Limited CEO Andrew Spencer said, "The results of this first auction highlight the innovative and progressive nature of Australian pork farmers as well as demonstrating the industry is walking the talk when taking responsibility for environmental stewardship and reducing its carbon footprint."

"The pork industry in Australia only accounts for about 0.4 percent of Australia's greenhouse gas emissions, however mitigation and utilisation of greenhouse gases not only minimises the industry's environmental footprint but also acts to offset production costs.

"Additionally, it significantly assists in reducing odour issues around intensive animal production systems.

"A win-win situation all round."

APL and the Pork CRC Bio-energy Support Program have assisted, encouraged and supported producers in taking up the biogas initiatives.

Reduce piggery odour & sludge levels



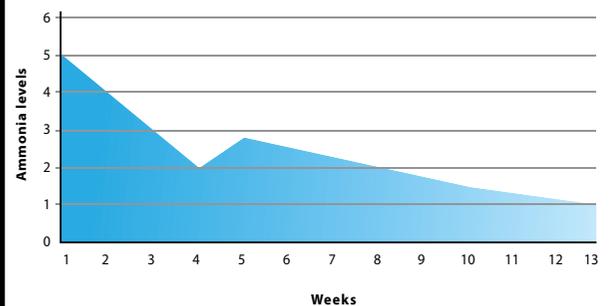
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The winning researchers with members of the review board: Hanna C Koinig, Nicolas Rose, Dr Bernd Grosse Liesner, Tuija Kekarainen, Prof Maurice Pensaert and Prof Armin Saalmüller.

Boehringer Ingelheim Animal Health continues support of independent PCV2 research

THE Boehringer Ingelheim group is one of the world's 20 leading pharmaceutical companies.

Headquartered in Ingelheim, Germany, Boehringer Ingelheim operates globally with 142 affiliates and a total of more than 47,400 employees.

The focus of the family owned company, founded in 1885, is researching, developing, manufacturing and marketing new medications of high therapeutic value for human and veterinary medicine.

European PCV2 Research Award

Boehringer Ingelheim continuously supports independent applied research in the field of porcine circovirus type 2 immunity, pathogenesis, epidemiology and interaction with other (potential) pathogens.

The European PCV2 Research Award is an annual award that recognises research proposals in the area of applied PCV2 research. An independent review board with leading European scientists in applied porcine research reviews the entries and decides upon the winning proposals.

A maximum of three prizes, each worth 25,000 euros, are granted to European researchers every year in order to advance scientific knowledge in the area of PCV2 research.

Since 2007, Boehringer Ingelheim Animal Health has funded independent European research projects related to PCV2

infection and associated diseases.

Over the past eight years, 23 research projects have been awarded with 25,000 euros each.

To date, the company has supported independent PCV2 research with 575,000 euros in total.

More than 30 European scientists recently joined the 2014 European PCV2 Research Award ceremony, which took place at the Boehringer Ingelheim headquarters.

The awards were granted to the laureates by Prof Maurice Pensaert, head of the review board and former head of the Laboratory of Virology at Ghent University, Belgium.

At this eighth annual awards ceremony, the independent review board selected the following projects to be awarded:

- Assessment of the impact of PCV2 infection on hepatitis E virus shedding in experimentally co-infected SPF pigs

(Nicolas Rose, France).

- Simultaneous application of Ingelvac CircoFLEX and Ingelvac PRRSV MLV improves the efficacy of PRRSV vaccination (Armin Saalmüller, Wilhelm Gerner and Hanna C. Koinig, Austria).

- Within host variability and evolution model of Porcine Circovirus 2 (Tuija Kekarainen, Spain).

Taking social responsibility is an important element of the corporate culture at Boehringer Ingelheim.

This includes worldwide involvement in social projects such as the initiative Making More Health and caring for employees.

Respect, equal opportunities and reconciling career and family form the foundation of the mutual co-operation.

In everything it does, Boehringer Ingelheim focuses on environmental protection and sustainability. 🌱

Second in Charge/Group Farm Manager

- Northern Victoria
- Team Leadership across four farms

This truly integrated business, with over thirty years of experience in the meat industry, is a leader in consistently meeting client requirements with the highest quality products. To develop the farms to their full potential across four sites, the company is building an effective Management Team to increase production and achieve the future growth objectives.

Reporting to the Group Farm Manager as the Second in Charge (2IC) and being a key member of the Production Team, you will provide support in the day-to-day management of activities across all 4 farms.

This will include:

- Day-to-day supervision of an efficient low-cost production system
- Implementing production strategies to achieve company processing objectives
- Implementing breeding plans to maintain production objectives
- Maintaining stock health and quarantine control procedures
- Implementing all relevant Standards and Guidelines for the Welfare of Pigs

The Company is seeking a person with leadership or supervisory experience, a passion for innovation and a commitment to developing the team to ensure the company is a leader in meat quality.

An attractive remuneration package will be negotiated plus the challenge of being part of a management team at the forefront of pig production in Australia, are the rewards for this challenging and demanding role.

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Lienert Australia launched the Lienert Blueprint program at the Victorian Pig Fair in Bendigo, Victoria.

Lienert releases genetics-based nutrition program, Blueprint

ANIMAL health leader Lienert launched a new feed management program at the Victorian Pig Fair to give customers a competitive advantage in the marketplace.

This new program allows Lienert to work closely with pig producers to target issues and make feeding program recommendations based on farm analysis and nutritional assessments.

Powered by global animal nutrition and health leader Alltech, the Blueprint program strengthens Lienert's commitment to being on farm, enabling producers to identify ways to improve efficiency and maximise genetic performance.

The Lienert and Alltech teams were on hand at the Victorian Pig Fair to discuss the program launch as well as other innovative management programs from Alltech including mineral, mycotoxin, gut health and protein management.

They also discussed feed efficiency and the Alltech On-farm Advantage with producers throughout the two-day event.

The Blueprint Nutrition Program, based upon the study of nutrigenomics, is designed to target animal health and performance at the cellular level and build upon genetic potential at each stage of an animal's life cycle.

Alltech Australia/Lienert Australia managing director Ty Yeast said, "Both genetics and management have been rapidly advancing in agriculture over the past 10

years, but nutrition has not kept pace."

"The Blueprint Nutrition Program unravels the genetic codes of how nutrition and other events interact in the animal's cells and provides a customised feeding program to meet your animal's genetic potential.

"Livestock today need more than protein, fat and fibre.

"Feeding an animal exactly what it needs, all the way down to the cellular level will result in better health, increased performance and improved profitability."

Besides nutritional applications, Blueprint includes farm analysis, management consultation, return on investment calculations and feed quality, nutrient and feed efficiency laboratory testing.

Lienert general manager Mark Peebles said, "The Blueprint program incorporates Alltech's primacy in science, allowing Lienert to strengthen our support on farm."

"By understanding the animal at the cellular level, Blueprint allows Lienert to work with our customers to use science to improve performance and profitability."

Blueprint will be available in the Australian market later this year.

For further information, please contact Roland Matyasi at rmatyasi@alltech.com

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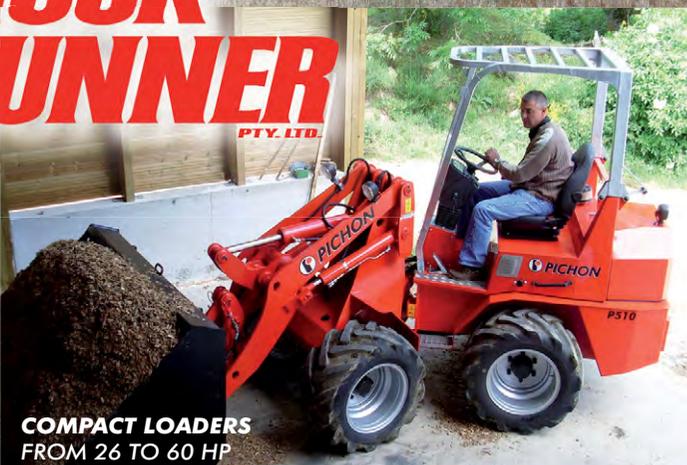
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Guinness World Record for pulled pork

AUSTRALIA recently set a new Guinness World Records title for the largest serving of pulled pork.

The title was achieved after nearly 800kg of pork was slow cooked for 10 hours and then manually pulled by more than half a dozen people.

The record attempt by Australian Pork Limited was part of celebrations

for the Australian Festival of Pork, or PorkFest.

APL's Peter Haydon said PorkFest was about trying new pork recipes but the event in Martin Place, Sydney was an extension of the festival's joy.

"We encouraged people to get involved in PorkFest by trying new recipes and sharing them with friends and family," Mr Haydon said.

"We recently shared that celebration with Sydney after achieving a Guinness World Records title."

After being removed from the oven, the pork was manually pulled before being weighed in a specially designed vessel.

As the scales tipped 707kg, the Guinness World Records adjudicator confirmed the record had been set.

People passing through Martin Place at lunch time also had a chance to taste a piece of history, with the Australian Pork team serving up pulled pork rolls with coleslaw for a gold coin donation.

"Pulled pork is so popular right now and it was great to give people a chance to tuck in," Mr Haydon said.

"This Guinness World Records title celebrates

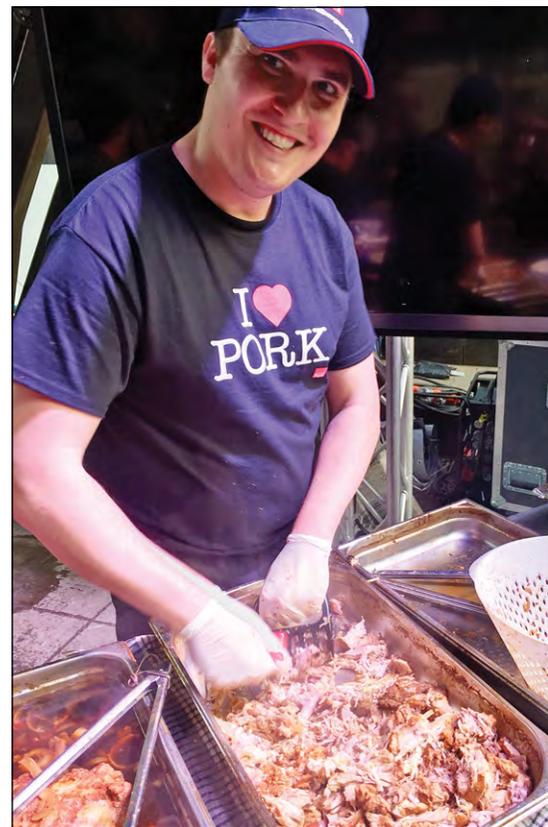
Australian pork, shows that cooking pork is great fun and hopefully some people who hadn't tried pulled pork before were able to enjoy it.

"As an added bonus, people were able to decide if

their gold coin donation went to the Starlight Children's Foundation, beyond blue or the National Breast Cancer Foundation and leftover pulled pork was donated to OzHarvest." www.pork.com.au



Eunbi Lee placed pulled pork into a specially designed dish for weighing.



James pulled pork to perfection at the special world record event.



Mitch Edwards, PorkFest ambassador Colin Fassnidge and producer Matt Simmons with Guinness World Records adjudicator Kimberley Dennis.

Australian Steelers butcher team powered by pork

AUSTRALIA'S top butchers will be powered by pork when they head to the Tri-Nations international butchery competition this September.

Australian Pork Limited will be the major sponsor of the Australian Steelers when the team takes on New Zealand and Britain in Auckland, NZ.

The Tri-Nations butchery competition pits teams of six butchers against each other in a three-hour test of skills, innovation and presentation.

Representing Australia this year will be:

- Michael James, Carina North Quality Meats, Queensland;
- Matthew Papandrea, Joe Papandrea Quality Meats, Bossley Park, NSW;
- Adam Stratton, Tender Gourmet Butchery, NSW;
- Ben Barrow, head butchery teacher TAFE South Western Sydney Institute, NSW;
- Tom Bouchier, Peter Bouchier Butchers of Distinction, Victoria; and
- Paul Brady, Tender Gourmet Butchery, NSW.

Michael James will captain the team for the third year, after representing Australia for four years.

"We have a great team and we've been working hard to develop our skills and products every year," Mr James said.

"It can be challenging to source the right ingredients when we compete

overseas and the time pressure is always a factor but we spend a lot of time training to ensure we've done all the preparation possible.

"This is our chance to showcase how skilled Australian butchers are and the diversity of skills required in this field.

"We're hoping this year the Australian Steelers will blunt the run of the Sharp Blacks."

APL marketing manager Peter Haydon said for the first time pork would be used in the competition.

"Pork is the most widely consumed meat in the world, so we're pleased these world-class butchers will be showcasing its diversity this year," he said.

"We're pleased to sponsor the Australian Steelers because these butchers are leaders in their field and we know they love Australian pork.

"We're looking forward to seeing the products they create and getting some pork on their customers' forks!"

The Australian Steelers will head to Auckland on September 5 and compete for the Tri-Nations title on September 10.

The Kiwi team, the Sharp Blacks, is not only hosting the 2015 competition, but also defending its back-to-back titles.

The British team is expected to step up its skills after losing at home in 2014.

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Improving the value of tasty pork



DAFWA research officer Karen Moore hopes to make important gains in improving the value of pork products from immunised male pigs.

CONSUMERS of pork can look forward to an enhanced 'taste experience' as a result of research by the Department of Agriculture and Food, Western Australia that will also improve the production value to producers.

For several years, many pig producers have used an immunocastration vaccine to reduce the risk of boar taint (the unpleasant taste or odour experienced by some consumers when eating meat from entire male pigs).

While the vaccine is effective, these pigs often have a higher level of back

fat – for which producers are penalised.

Department research officer Karen Moore's work, as part of her PhD, is examining a suitable on-farm feeding strategy to address this constraint.

An integral part of the research has been to determine the right amount of lysine, the first limiting amino acid essential for growth, in pig diets.

"Immunised male pigs which consume feed that contains insufficient lysine gain too much back fat and have unsatisfactory growth, while too much lysine in feed is wasted," Ms Moore said.

"We have established that immunised male pigs should be fed the same level of lysine as entire boars for two weeks following the second immunisation and following this the lysine level can be decreased.

"This ensures that growth is maximised while feed costs are minimised."

The research has also shown that immunised male pigs deposit about 50 percent more fat in the second two weeks after the second dose of the vaccine.

"Producers are paid on the depth of back fat, so the profit penalty can be

considerable," Ms Moore said.

"The next step of the research is to develop a suitable feeding strategy to help producers maximise the potential of immunised male pigs without compromising the back fat level – boosting production and profitability and guaranteeing the consumer a better eating experience."

The research, which commenced in 2010, is funded by the Pork CRC and Australian Pork Limited.

More detailed results and feeding recommendations are expected by the end of the year. 🐷

West coast smallgoods leader looks east

MELBOURNE-based D'Orsogna operations manager Darren Dempster says his D'Orsogna 'elevator pitch', refined over seven years with the company, is very clear: "Made by Australians for Australians, our quality is second to none and our products are produced in a clean room environment."

From humble beginnings in Western Australia in 1949, D'Orsogna has grown to be a significant smallgoods force nationally.

D'Orsogna's Melbourne operation manufactures and supplies D'Orsogna-branded bulk ham for Woolworths delicatessens nationally and D'Orsogna-branded sliced and shaved meats, ham, chicken and salami to Woolworths nationally also.

Darren has been running D'Orsogna's Melbourne



Cant Comment
by
BRENDON CANT

operations since day one (April 2009), when the company bought the Mt Waverley premises and commenced a massive renovation and upgrading

program at what was an old smallgoods factory.

D'Orsogna managing director Brad Thomason, who identified the opportunity and negotiated the purchase, had worked at Huttons with Max Davis, the factory's previous owner.

According to Darren, the facility had to be completely gutted internally and rebuilt inside.

"After several million dollars of investment in new plant and equipment and infrastructure, the facility now is highly functional, with zero contact between raw processing and cooked, state-of-the-art equipment and one particular line which is ahead of the game in manufacturing in the smallgoods industry in Australia," he said.

Before starting with D'Orsogna, Darren was production manager with Castle Bacon (KR Castlemaine), where he'd worked for 26 years.

He also managed a small poultry processing plant in Bendigo, Victoria for two years.

D'Orsogna financial controller Roseanne Thomas said the company was now looking at a number of options to expand its presence in Victoria, which is an exciting prospect for the state.

While its WA operation employs more than 500 people, D'Orsogna's Melbourne workforce stands at about 50, but Dr Thomason said this could expand to up to 150 people.

"Our Melbourne factory is only small and the board is currently exploring options to build a much bigger factory in Melbourne," she said.

"It will probably be a similar size to our headquarters factory in Perth, giving us the capacity to supply the eastern states and the ability to export from either this side or that side by increasing throughput."

Dr Thomas credits a significant portion of this success to Brad Thomason, who she said has taken the company from strength to strength since being appointed managing director in 2000.

"It's always been a good business, with a strong foundation, but when Brad came on board he took it to another level because he had very good contacts within the retail sector and also the meat industry," she said.

"Certainly we expect it to keep growing."

"The board is very supportive strategically with investment and I think it will continue." 🐷



Key members of D'Orsogna's Melbourne team: Peng Mach (supervisor), Miriam Mercado (operations co-ordinator), Ingrid Radeconde (quality manager), Veronique Chung (technical projects), Brian Spehr (production manager) and Darren Dempster (operations manager).

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Piggies bank greenhouse savings

A HIGHLY successful education and on-farm greenhouse gas mitigation program has yielded results above expectations for the Australian pork industry.

Profitable reductions ranging from 3-84 percent of total on-farm emissions have been planned or achieved on individual piggeries.

Over the past two years, producers representing 24 percent of Australia's pork production have participated in workshops and one-on-one farm consultations as part of the National PigGas Extension Project, delivered by Ian Kruger Consulting.

Baseline greenhouse gas emissions were calculated on participants' farms using the PigGas Calculator and mitigation strategies were identified.

The average potential to mitigate total on-farm

greenhouse gas emissions across all piggeries was 54 percent.

On a national basis, this equates to a maximum abatement potential of 588,500 tonnes of carbon dioxide equivalents per year.

Mr Kruger, the principal consultant leading the project said, "This is a good news story for agriculture."

"Nearly all pork producers could identify potential emissions savings.

"About half of those in the study have implemented some reduction strategies already, particularly where there was a clear financial return.

"For example, reducing feed wastage or increasing feeding efficiency by 5 percent resulted in about a 10 percent reduction in greenhouse gas emissions.

"Modifying existing waste treatment and reuse systems could result in

15-25 percent emissions reductions.

"Housing pigs in deep litter pig sheds resulted in about 40 percent lower emissions compared with housing in conventional flushed sheds."

Mr Kruger highlighted that the maximum emissions mitigation was found in conventional piggeries that treated manure in covered anaerobic ponds or tank digesters.

He said these digesters capture and burn biogas methane to generate electricity for farm use and sales to the grid.

"In these cases, 75-84 percent of total on-farm greenhouse gas emissions could be mitigated and the emissions intensities fell from a calculated average of 4kg of carbon dioxide equivalents per kilogram of pork produced to below 1kg.

"Over 100,000 tonnes

of CO2 have been abated so far from these digester systems installed on over 10 percent of pork production."

This substantial reduction in total emissions and emissions intensity is a win-win for producers who are taking action to manage conflicting environmental and productivity challenges, enabling them to take advantage of new income opportunities.

Some of the on-farm mitigation options such as reducing feed wast-

age resulted in direct cost savings, while other mitigation options including covering ponds generated new farm income streams including Australian carbon credit units and electricity sales and offsets.

The pork industry is an agricultural leader in proactively mitigating greenhouse gas emissions.

The National PigGas Extension project was funded by Ian Kruger Consulting, the Australian Government and Australian Pork Limited and is due for completion in May 2015.



A rundown screen.



Covered pond digesters offer the greatest greenhouse gas mitigation for piggeries.



An engineered digester system.

Biogas code of practice

AUSTRALIAN Pork Limited's 'Code of Practice for On-Farm Biogas Production and Use (Piggeries)' was launched at the 2015 Victorian Pig Fair by APL chairman Enzo Allara.

The Code provides a consistent framework and direction for the safe design, construction, operation and maintenance of on-farm biogas systems for Australian pig producers.

It makes reference to international best practice and Australian regulations and standards relevant to biogas, and is in support of and not an alternative to relevant state and territory legis-

lation and requirements.

Users of the Code are responsible for compliance with all peripheral and relevant legislation, including that which is not identified in the Code.

Users should consult relevant regulatory authorities early in a biogas project to ensure that all aspects of the project meet the relevant requirements.

The Code uses a risk-based approach, identifying risks associated with on-farm biogas as well as potential options to mitigate those risks.

Due to a focus on on-farm installations, the scope of the Code is limited to:

- The recovery of biogas from agricultural waste and byproducts (primarily pig manure),
- at a rate of less than 500 cubic metres of raw biogas per hour, that
- is conveyed or stored at pressures of less than 50 kPa; and
- that does not cross the boundary or title of land on which the biogas is produced (which may have additional regulatory requirements outside the scope of the Code).

You can access the Code by heading to australianpork.com.au/wp-content/uploads/2013/10/2011_1013-423-CoP-Final-April15.pdf

Early preparation for PPPE

PAN Pacific Pork Expo is just one year away!

Last year a number of exhibitors missed the event or hadn't budgeted sufficiently for involvement, displays or sponsorship of key events at PPPE.

No matter where you are involved in the pork industry, from grain and feed supply to growing and caring for pigs through to the processing and retailing of pork, you can't afford not to be at next year's PPPE.

The event is to return, due to popular demand, to the Gold Coast Convention and Exhibition Centre on May 25 and 26, 2016.

The impact of change in our industry has never been as great as it is now due to what is currently happening and what will be experienced over the next few years.

So, with the impacts of the voluntary and legislative changes to gestation stalls, changing consumer and customer trends around intensive farming and the rising costs of energy and other production inputs, you need to be fully informed to best deal with them.

PPPE is a valuable source of information for producers looking for those answers.

www.porknews.com.au



President's Perspective

by JOHN COWARD



While some producers may see the need for change as unnecessary, I believe being in front of the game or more to the point, in charge of the game, is the preferred position for our industry.

PPPE provides producers the opportunities to engage with other pig farmers as well as a wide range of industry suppliers showcasing their expertise and products that will maximise your farm's potential.

PPPE has continually improved with valued input from producers and supply chain partners, with the last event in 2014 breaking all previous attendance and exhibitor records.

The committee will be considerate of the current issues impacting producers in preparing the theme for next year's event and will again be looking to world-leading presenters on topical issues and the presentation of valuable

research done by Australian Pork Limited and Pork CRC, making your attendance a must.

Remember, APL members are eligible for the APL travel and accommodation support package.

So if you are not already a member, contact APL membership officer Maree Winmill on 1800 789 099.

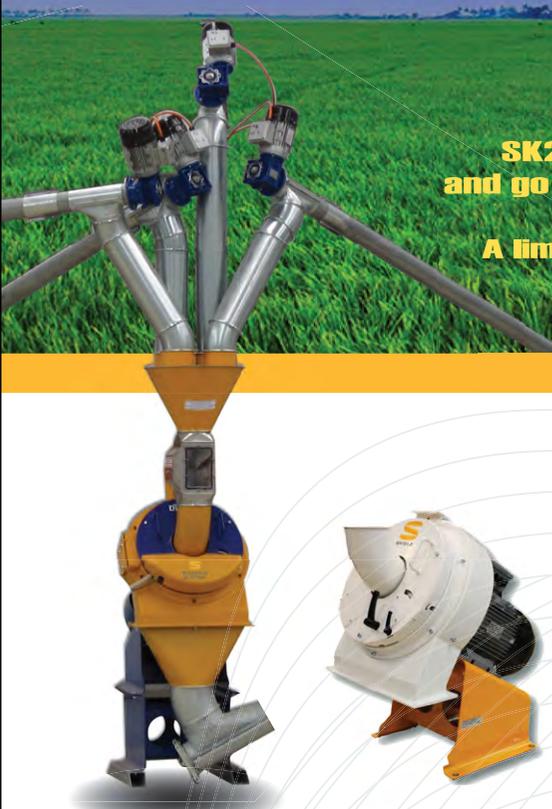
Our PPPE committee is about to commence the planning process for the May 2016 event and we encourage new and old industry participants to consider their involvement in our premier pork industry expo.

Keep an eye out in future editions of *Australian Pork Newspaper* for updates on the event and program details.

Budget now and block off time to be part of PPPE 2016 as a sponsor, exhibitor or just attend and help APL make the next PPPE the best ever.

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Missing cash beyond the farm gate

A COMMON theme among producers seems to be how little influence they appear to have over the price they receive for their pigs.

Having said that, over the past four years, pig price per kilogram has increased as a national baconer average from about \$2.80 in March 2011 to roughly \$3.33 in March this year.

That's just over a 4 percent rise a year, so faster than the consumer price index, though feed costs have clearly done this too.

The Australian Pork Limited Marketing Insights team exists in part to provide producers information they could not collect by themselves.

So let's take a look at pricing beyond the farm gate.



Marketing Matters

by PETER HAYDON
General Manager Marketing



It appears that if we look beyond the farm gate we see that additional margin is being made in wholesaling pork at present.

Figure 1 shows the consumer price, wholesale price and pig prices trending upwards over time.

If we convert this into gross trading margin

(Figure 2) we can see that wholesalers are capturing about an extra dollar a kilogram based on the figures; more than doubling their margin.

This happens when a market has an excess of demand over supply.

In that case there are few pigs available and the

person who has the widest trading network will find people prepared to pay more and allocate the few spare pigs to the highest bidder.

If you're a producer, what can you do about this?

Annoyingly, nothing is not a complete answer.

If time could be found to understand the producers' customers' customers there could be a clearer understanding of what people are prepared to pay for and who is prepared to pay what.

In both these ways producers can have an influence on the price they get for their pigs.

If return on investment is of interest to a producer, it's worth thinking about.

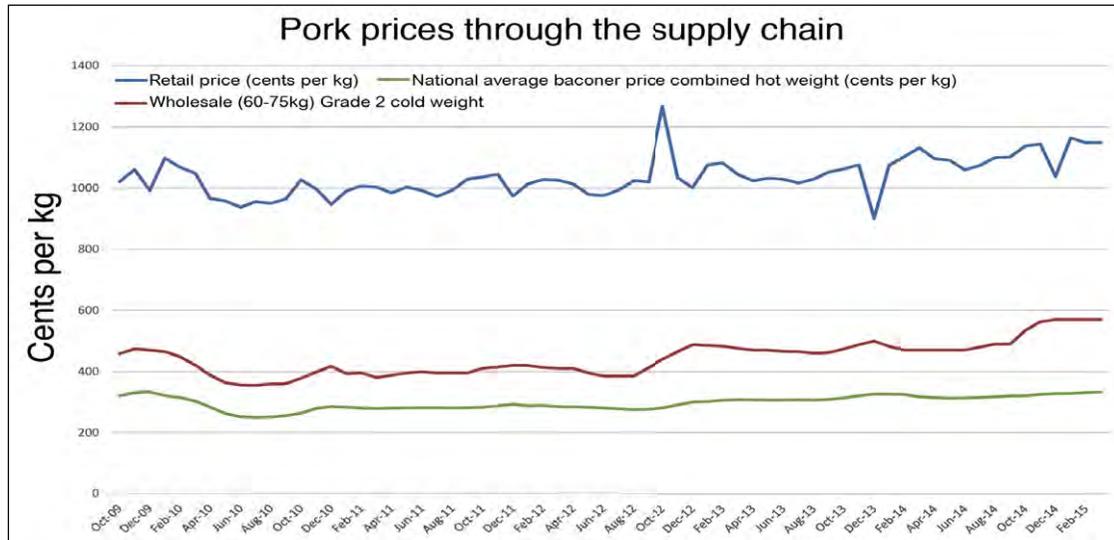


Figure 1



Figure 2

Managing workplace safety

FARMING is one of the most dangerous occupations in Australia, with 17-22 percent of all work-related deaths occurring on farms.

In 2014 there were 54 deaths on farms, seven of those being children.

Adults over 65 account for more than one-third of all injuries, with males more likely to be injured than females.

Injuries, death and illness can be largely reduced through training and education, properly maintaining machinery and equipment and ensuring adequate safety features are in place.

Evaluating and minimising the risks will reduce safety hazards that can cause injury and illness from animals, chemicals, vehicles, machinery, electricity and other power supplies and water hazards.

The Work Health and Safety Act 2011 lays out a framework to protect the health, safety and welfare of all workers.

It is designed to provide a balanced and nationally consistent framework to secure the health and safety of workers and workplaces where reasonably practicable.

The WHS Act aims to:

- Protect the health and safety of workers and other people by eliminating or minimising risks arising from work or workplaces;
- Ensure fair and effective representation, consultation and co-operation to address and resolve health and safety issues in the workplace;
- Encourage unions and employer organisations to take a constructive role in improving work health and safety practices;
- Assist businesses and workers to achieve a healthier and safer working environment;
- Promote information, education and training on work health and safety;
- Provide effective compliance and enforcement measures; and
- Deliver continuous improvement and progressively higher standards of work health and safety.

WHS legislation focuses on preventing work-related illness and injury.

The main platform for achieving this is risk management by identifying what activities could place workers at risk of injury or illness, assessing how big a risk they pose and taking steps to minimise the risk.

There are four stages in the risk management process:

- Identify the hazards;
- Assess the level of risk for the hazards;
- Control the risks; and
- Review to ensure the hazards have been reduced and no new hazards have been created.

There are many reasons to manage WHS.

Ethically and morally

people should not be injured or become ill at work.

Workers' compensation claims in agriculture and services to agriculture are among the highest of any industry.

There is also a high cost to business as a direct result of injury and lost productivity as well as increased costs associated with higher workers' compensation premiums.

Managing WHS makes good business sense by keeping workers (and on farms, many workers are family members) well and able to perform their work, and not incurring costs associated with injuries and illness.

Ultimately, employers have the final responsibility for providing a workplace that is safe and without risks to health.

WHS law aims for management and employees to work together on WHS.

In order to achieve this, employers need to be able to show that they consult with their workers about WHS.

Law about consultation differs from state to state, but generally requires a WHS representative or, for larger organisations, a WHS committee.

Consultation may also occur informally through WHS being included in meetings and supervisors raising WHS issues directly with their staff.

WHS responsibilities should be included in job descriptions and workers informed, trained and supervised so as to undertake their work in a healthy and safe way.

Supervisors and managers not only train and supervise their staff in WHS but also need to identify and fix hazards, act on WHS issues that are reported to them, set an example modelling good WHS practices and actively encourage staff to raise and discuss WHS issues.

Once hazards have been identified and the level of risk assessed, steps must be taken to try to eliminate or minimise the level of risk.

The best controls eliminate the hazards totally.

Controls that make the workplace safe are more effective than controls such as earplugs that protect the worker.

Though the ideal situation is to eliminate all risks or reduce them to an insignificant level, this is generally impractical.

With the emphasis now on self regulation, the responsibility is on the employer to determine what the acceptable levels of risks are and be able to justify them.

Pig farming is a physical occupation involving manual handling, potentially dangerous machines and large, strong, unpredictable animals.

Consequently, there will always be some

risks associated with it. In practice, a combination of measures is often required.

For example, in environments such as piggeries that are noisy, stockpersons may wear earplugs, however other controls might include insulation and fitting mufflers or rubber stops to gates.

Other controls could include modifying or replacing noisy machinery in feed mills and training staff to handle pigs safely through programs such as ProHand.

Other issues common in the pork industry are dust hazards and back injuries.

Dust hazards associated with intensive pig production are difficult to manage and high levels constitute a health and safety issue.

More than 60 percent of pig farmers suffer from dust-induced respiratory problems during their working lives and in many cases these continue after they retire, often with debilitating effects.

Of particular importance in the pork industry is the continual advancement of good hygiene practices through education and improvement of communal facilities to prevent the spread of disease between pigs as well as between humans and humans.

Diseases such as community-acquired methicillin-resistant staphylococcus aureus and influenza are easily spread in any situation where people are in close contact, such as change rooms and tea rooms.

Once established, some of these diseases, especially CA-MRSA, can be difficult and expensive to manage.

With this in mind, the pork industry is encouraging producers, their families and anyone who will be in close contact with pigs this winter to get the influenza vaccination and practice good hand hygiene to limit the spread of infections.

Management is responsible for identifying control and implementing controls.

Management should consult with workers about identifying suitable control measures and workers should follow the control measures put in place.

These examples highlight the need to keep abreast of the legislation, pig industry standards and general health and safety information.

They also underline the importance of pre-employment and ongoing health checks.

In the event of a criminal or civil claim being made against an employer, ignorance of the law is no defence.

Should you require further information on WHS issues, please contact me by email at John.McGovern@australianpork.com.au

John McGovern
APL Policy Analyst

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Digesting pork eating habits

■ Pork CRC Project 3B-106 'Health benefits of pork consumption in the diets of Australian children' and 3B-108 'Exploring barriers to fresh and total pork consumption among children: parental perspectives'

IN 2012, Dr Deborah Nolan-Clark, Dr Elizabeth Neale (Landmark Nutrition Pty Ltd) and Assoc Prof Karen Charlton (University of Wollongong) conducted a secondary analysis of the 2007 Australian National Children's Nutrition and Physical Activity survey to examine the patterns of pork intake in Australian children and investigate the nutritional contribution of pork in their diets.

Results suggested that about half the children surveyed reported eating some kind of pork, with processed pork such as bacon and ham by far the most frequently eaten.

Only 7 percent of all children in the survey reported that they ate fresh pork.

This Pork CRC Project 3B-106 research also examined demographic characteristics of pork consumers compared to children who did not eat pork.

Fewer children who reported eating pork had a primary carer born in Africa or the Middle East, compared to Australia, Europe and the UK.

When considering the type of pork eaten, more children who reported eating fresh pork had a primary carer born in Asia (compared to Australia, Europe and the UK).

In contrast, more children who reported eating processed pork had a primary carer born in Australia, Europe or the UK, compared to Asia.

Children who reported eating pork had greater intakes of protein, phosphorous and zinc than children who did not eat pork.

Pork also contributed substantially to the intakes of a number of important nutrients including protein, thiamin, zinc and niacin.

Despite the finding that children who ate pork had a greater energy, total fat and saturated fat intake than children who did not eat pork, there was no difference in weight, waist circumference or prevalence of being overweight/obese between children who ate pork and those who did not.

This research highlighted the important role of pork within the diets of Australian children, as well as the discrepancy between consumption of fresh and processed pork, and identified key target areas for encouraging fresh pork intake.

This study was published in the peer-reviewed journal Nutrition Research, and was presented at the Nutrition Society of Australia Annual Scientific Meeting (2013).

Project 3B-108 'Exploring barriers to fresh and total pork consumption among children: parental perspectives'

To determine the reasons why Australian children were eating processed pork in preference to fresh pork varieties, Dr Nolan-Clark, Dr Neale and Assoc Prof Charlton conducted a qualitative study to explore parental perceptions of their children's pork consumption.

Semi-structured focus groups were completed with parents and carers of children aged from two to 16 years.

Parents were asked questions about their children's pork preferences and factors that encouraged or discouraged pork consumption (particularly fresh pork).

Overall, parents reported that pork was an acceptable meat to include in children's meals and there was an overall perception that fresh pork was a healthy meat because of its leanness.

In comparison, processed pork such as ham and bacon was seen as less healthy than fresh pork, though it was viewed as being more convenient.

Issues with the cooking and preparation of fresh pork were discussed as barriers to its intake.

Parents felt they lacked confidence when cooking fresh pork, and many believed that pork needed to be cooked until well done to avoid food poisoning.

Within the groups, a strong desire for simple and fast recipes using fresh pork was discussed.

Parents felt that involving their children in preparing dishes containing fresh pork (dumplings for example) improved their accept-

ance of these meals.

Participants also felt they lacked knowledge of the nutritional contribution of pork compared to other meats.

Other barriers to serving fresh pork included a lack of visibility in supermarkets, with fresh pork seen to be less visible in shopping outlets than beef or chicken.

It was also seen to be advertised less frequently than these meats.

The barriers to fresh pork intake among children that were identified

in this research provide important information for targeted marketing strategies to increase intake of fresh pork among children.

The provision of simple recipes to improve parents' confidence in cooking pork, particularly if those recipes can be prepared with children may be one way to do so.

Educating parents on the unique nutritional contribution of pork and ensuring that fresh pork is visible in supermarkets may also help to increase

fresh pork intakes.

Adult consumption

Dr Nolan-Clark, Dr Neale and Assoc Prof Charlton are currently investigating pork consumption among Australian adults in the 2011-2013 Australian Health Survey, with this project due to be submitted to Pork CRC in late June, 2015.

For further information, contact Dr Deborah Nolan-Clark by email at deborah@landmarknutrition.com

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Dr Deborah Nolan-Clark and Pork CRC CEO Dr Roger Campbell at the 2014 Pork CRC stakeholders' meeting.

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Dr Rob Wilson of Pork CRC and Dr Navid Moheimani at Murdoch University's Algae R&D Centre.

Algae discovery means pig waste could provide more for farms

MURDOCH University researchers are investigating whether the effluent from piggeries can be effectively treated with micro and macroalgae so that species of the organism can be safely fed back to pigs.

The Pork CRC has invested \$300,000 with the Algae Research and Development Centre at Murdoch University to investigate the proposals, which would cut costs, recover energy from waste and reduce the potential for groundwater contamination at piggeries.

So far, centre director Dr Navid Moheimani and his team from the School of Veterinary and Life Sciences have discovered three different types of microalgae that can grow on untreated piggery anaerobic digestate effluent, which typically contains extremely high levels of ammonium.

Anaerobic digestion in lagoons or ponds on farms is currently the most common method used to process piggery waste.

The discovery is a world

first and offers a potentially cost effective means of remediating piggery effluent.

They have found that microalgae remove ammonia, other nutrients and potentially reduce the pathogen load in the effluent, meaning the treated wastewater can be reused.

The algal biomass produced is potentially a protein-rich food source for pigs and other animals, though Dr Moheimani said extensive testing would be required.

"We have high hopes that this method of treating effluent will ensure the algal biomass produced can be fed back to the pigs, which will make Australian piggeries much less wasteful and more cost competitive," Dr Moheimani said.

"Of course if this works for pigs, it could also work for different livestock.

"Pig slurry could well be viewed by the industry as a resource rather than a waste management issue."

Dr Moheimani and his colleagues are now looking at methods to optimise the growth of the microalgae on the effluent and are bioprospecting for suitable species of macroalgae to grow on pig-

gery effluent.

Macroalgae are larger and easier to harvest than microalgae.

The anaerobic digestion process currently used in piggeries produces a low-quality fertiliser.

A byproduct of this process is the creation of biogas, which is a renewable energy source consisting mostly of methane and carbon dioxide.

This is often used to generate electricity on farms.

If they find the micro and macroalgae grown on effluent is unfit for consumption by pigs, Dr Moheimani said his team will investigate how algae can help to maximise biogas production from piggery effluent.

This is a multidisciplinary project involving experts with different backgrounds.

Dr Moheimani is the project principal investigator, while his Murdoch University colleagues Prof John Pluske, emeritus Prof Michael Borowitzka and Dr John Huisman are contributing their expertise in nutrient studies, algal cultivation and economics and macroalgal bioprospecting respectively.

Dr Sasha Jenkins from the University of Western Australia is helping to investigate the anaerobic digestion process while Jeremy Ayre is conducting his PhD mainly on microalgae cultivation aspects of the project.

Mr Ayre is in his first year of study and his scholarship is co-funded by the Pork CRC and Murdoch University.

The project is also supported by the Department of Agriculture and Food, Western Australia and the University of Melbourne (Dr Peter Cakebread).

According to Pork CRC Program 4 'Carbon Conscious Nutrient Inputs and Outputs' leader Rob Wilson, this exciting area of research for the Pork CRC follows a successful Honours project by Mr Ayres.

"Australian pork producers are a resourceful group, as demonstrated by the successful uptake of energy replacement by the capture and use of biogas on farm," Dr Wilson said.

"This work complements the environmental credentials of pork producers while exploring the possibility of producing a food source or a co-digestion product for bioenergy output."



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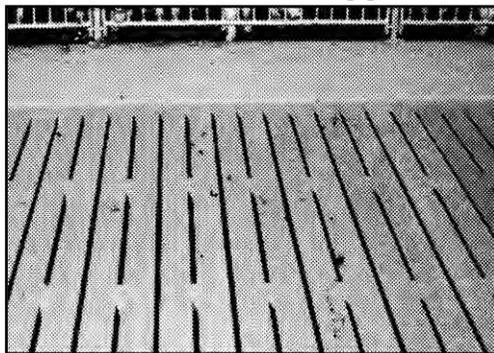
Dr Navid Moheimani inside Murdoch University's Algae R&D Centre.

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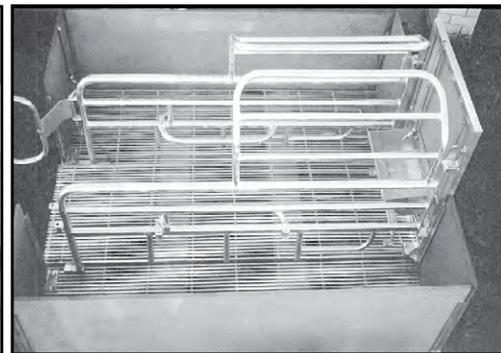
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Pork industry students and Pork CRC chairman Dennis Mutton attended Tim and Judy Croagh's farm.



APL CEO Andrew Spencer and APL Finance and Administration General Manager Sarah Lindsay were joined at dinner by students Alice Weaver, Anthony Martyniuk, Lechelle Van Breda and Rebecca Woodhouse.

Pork industry students expand knowledge at Vic Pig Fair

AUSTRALIAN Pork Limited and Pork CRC undergraduate and post-graduate students recently travelled to Bendigo for the Victorian Pig Fair.

Prior to attending the pig fair they travelled to Tim and Judy Croagh's APIQ[✓] certified outdoor bred site.

Tim and Judy kindly opened their doors to the students, APL staff and Pork CRC chairman Dennis Mutton.

The students heard from APL Manager for Environment Janine Price on classifications of outdoor systems and that outdoor

production is recognised as intensive animal production under most planning schemes.

Janine also outlined planning requirements, environmental risks and design and management practices to reduce risks associated with outdoor systems.

The students then toured Tim and Judy's farrow to finish farm, asking many pertinent questions about the management, procedures and issues that come with their outdoor bred enterprise.

That night the students attended the student and industry dinner.

This event was proudly sponsored by the VPF group and attended by VPF sponsors, industry representatives, APL and Pork CRC.

Guest speaker for the evening APL CEO Andrew Spencer inspired the students by highlighting his diverse career in many agricultural industries and how he came to be in the pork industry and ultimately the CEO of APL.

The following day, students attended a workshop conducted by David Faulkner of David Faulkner & Associates.

Watched on by Dr Roger

Campbell, Dennis Mutton and Graeme Crook of Pork CRC, the students learnt how to effectively convey their messages to industry.

The students said they thoroughly enjoyed the workshop and found it beneficial to them personally and professionally.

Following the workshops and farm tour the students descended on the festivities of the VPF, beginning with the APL/Pork CRC seminar series run prior to the official opening by APL Board chairman Enzo Allara.

The students welcomed the opportunity to engage

with many of the leading pork industry representatives for their remaining time at the VPF.

Student workshops and attendance at producer events such as the VPF are crucial to informing our future leaders of the key issues affecting our industry.

As a PhD student of Pork CRC and now employed by APL as the Research and Innovation Manager for Production Innovation, I believe the importance of these workshops is integral to developing and retaining passionate people within our industry.

Robyn Terry



APL Research and Innovation General Manager Dr Darryl D'Souza caught up with Dr Alison Collins of the Elizabeth Macarthur Agricultural Institute at the pork industry dinner.

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Piggery type	Baseline emissions (t CO ₂ -e/y)	Modelled abatement (t CO ₂ -e/y)
Farrowing only – conventional (5)*	6576	4224
Farrow to weaner – conventional (1)	2211	205
Farrow to pork – conventional (1)	1880	1579
Farrow to finish – conventional (19)	112,991	72,236
Grow out – conventional and deep litter (2)	7131	2005
Grow out – conventional (5)	23,757	15,410
Farrow to finish – conventional and deep litter (20)	102,444	45,488
Farrow to finish – outdoor farrowing and deep litter growing (2)	3491	85
Total	260,481	141,232

Table 1: Summary of on-farm GHG emissions and abatement from 55 piggeries (24 percent of Australian production).

Piggeries abate greenhouse gases

DURING the past two years, industry education workshops and one-on-one piggery consultations have been conducted in each state using the Pork Industry Greenhouse Gas Calculator.

On-farm baseline greenhouse gas emission calculations and on-farm emission reduction options have provided some interesting results and a better understanding of possible abatement from piggeries.

The results showed it is possible to reduce GHG emissions on most piggeries.

On all but two of the

55 piggeries studied, ways to reduce GHG emissions were identified.

On the vast majority of piggeries, it is possible for a mitigation action to lead to cost savings in feed or energy, improved manure management or new income streams from trading Australian carbon credit units and electricity.

About half the producers involved in the program have already implemented some reduction strategies.

Table 1 shows the on-farm baseline GHG emissions and potential emission abatements calculated on the 55 piggeries of various types and sizes that represented 24 percent of Australia's pork production.

Emissions are expressed in tonnes of carbon dioxide equivalents per year (t CO₂-e/y).

The calculated on-farm emissions are based on energy use, enteric methane emissions from the pigs' guts, methane and nitrous oxide emissions from waste treatment systems and nitrous oxide from land applying effluent and manure.

Results show that the total baseline GHG emissions from 24 percent of Australia's pork production was 260,481 t CO₂-e/y.

It was possible to reduce these emissions by 54 per-

cent or 141,232 t CO₂-e/y.

If this reduction was applied to the whole pork industry, it would be possible to reduce our national GHG emissions by 588,500 t CO₂-e/y.

On many of the piggeries studied, there were opportunities to reduce feed wastage by at least 5 percent, which can reduce emissions by up to 10 percent.

The highest emissions mitigation potential (75-84 percent) was found in conventional piggeries that cover the primary anaerobic lagoon to capture biogas methane, burn methane to generate electricity and capture waste heat from the genset engine to offset energy purchases.

Only two methods currently exist for piggeries to generate and trade ACCUs under Australia's new Emissions Reduction Fund.

These ERF methods relate to capturing and burning methane from covered anaerobic ponds or engineered digesters.

However, in future years, additional ERF methods will be developed that should provide pig producers with more opportunities to mitigate their emissions and generate some income from trading ACCUs.

Examples of these op-

portunities are: changing conventional housing to deep litter; anaerobic digestion of spent litter; using smaller, shorter retention time treatment ponds; amending manure to bind nitrogen prior to spreading; and changing land application timing and techniques.

Research to develop some of these potential ERF methods is nearing completion in the National Agricultural Manure Management Program.

This program is funded by the Department of Agriculture and the intensive agricultural industries coordinated by Australian Pork Limited.

Results from the modelling have shown that in the next few years the Australian pork industry should have a broad suite of technologies and ERF methods available to allow it to reduce its total GHG emissions by about 50 percent.

The results discussed were gathered as part of the National PigGas Extension project funded by Ian Kruger Consulting, the Australian Government and APL.

For more information, contact me by phone 0401 365 488 or email iankrugerconsulting@gmail.com

Ian Kruger

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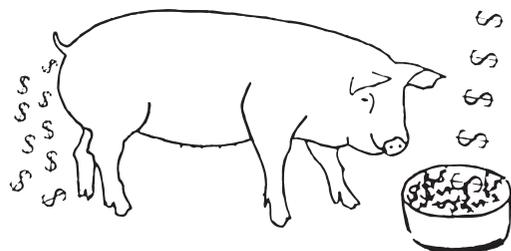
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Trash pump upgrade

AUSSIE Pumps has announced an upgrade of its heavy-duty, cast iron, industrial semi-trash motor pumps.

These self-priming pumps are used in diverse applications such as dealing with waste effluent in piggeries, food waste and slurries in batch plants.

The upgrade consists of taking the single and three-phase pumps in their 2" configuration to larger horsepower to provide more reserve power.

Product manager Craig Bridgement said, "Traditionally we have always supplied the 2" model B2KQA-ST in either cast iron or 316 stainless steel in 2hp configuration."

"The new versions moved up to 3hp (2.2kW) with a view to providing reserve horsepower."

The 2" trash pump delivers a maximum flow of 440l/pm and a maximum head of 18m.

Its self-priming characteristics are excellent, with the ability to draw water from pits at depths of 6m.

"We are very conscious of the pump 'golden rule,'" Bridgement said.

"We promote the idea that the best efficiency point at which all pumps should be operated is 85 percent of the total pump head.

"Many users are not aware of the effect the additional load puts on the motor when the pump is operated at higher flow rates on the performance curve."

By increasing the reserve horsepower, users can be confident that these pumps will deliver better outcomes and have a longer life.

The pumps are close coupled to heavy-duty, to-

tally enclosed, fan-cooled single-phase (240V) or three-phase (415V) electric motors.

The motors are IP rated and the pumps are designed to handle solids in suspension.

They are fitted with hard-wearing silicon carbide mechanical seals with an alumina counterface and nitrile rubber elastomers.

They also feature a stainless steel wear plate and are fitted with a front-opening clean-out port.

That's a huge advantage because the clean-out port means the pump can be cleared of chokes without having to dismantle in-situ pipework.

The move to bigger motors is advantageous in agricultural, construction and industrial waste applications.

The 2" pumps are part of Aussie Pumps' full line-up of semi-trash pumps that go all the way to the giant 8" pump capable of pumping up to 9000l/pm of effluent waste.

Like all Aussie Pumps products, the units are designed and built to ISO 9001 quality standards.

Further information including a free catalogue is available from www.aussiepumps.com.au





WAPPA Pig Day Out

RESEARCH and development underpinning modern pork production systems was highlighted at the 2015 Pig Day Out, co-hosted by the West Australian Pork Producers' Association and Department of Agriculture and Food, WA and held at Technology Park.

With demand for free range pork on the rise and about 20 percent of the state's pig kill now sourced from free range enterprises, Dr Megan Trezona of DAFWA addressed the issue of the impact outdoor production was having on product quality.

Complementing her address, which touched on feed and feed conversion ratios, DAFWA colleague and PhD candidate Karen Moore detailed her work on the dietary needs and feeding strategies for finisher pigs, before also presenting her Pork CRC supported research into the impact on body composition and eating

quality after pigs have received the second dose of Improvac.

Dr Cameron Jose of Murdoch University discussed how predicting ultimate muscle pH can help measure subsequent eating quality and Dr Jae Kim of DAFWA demonstrated that feeding vitamin E to finishers could help deliver a premium pork product.

With the morning research and development session concluded, WA Liberal Senator and former veterinarian Chris Back explained that his proposed private members' anti-trespass Bill, if and when passed, would make a positive contribution to animal welfare.

James Battams and Janine Price, both of Australian Pork Limited, told Pig Day Out attendees, including many producers, that correctly registering pig movements and appropriately dealing with environmental applications, while sometimes burden-

some, were necessary efforts to address community and biosecurity concerns.

Ms Price's environmental presentation was complemented by one from consultant Ian Kruger, who explained how using the greenhouse gas calculator PigGas could help producers understand and manage their farm's greenhouse gas emissions. "Using the PigGas Calculator to identify emission intensity levels, efficiencies in production and appropriate waste management systems can only aid Australian pig farmers in becoming more environmentally friendly and efficient," Mr Kruger said.

Dr Trish Fleming of Murdoch University discussed her research at a Great Southern region outdoor piggery into the predatory impact of foxes, especially on piglets.

She indicated that some sows seemed to be more protective of their litters than others.

The final presentation was an entertaining one from Portec Veterinary Services veterinarian Kim Nairn.

Aside from discussing the unpleasant subject of abattoir condemnations, Dr Nairn was most uplifting when commending producers and their staff for the initiatives they showed in and around their piggeries, subsequently announcing a substantial cash prize for the forthcoming 'Portec Producer Ingenuity Awards'.

At the conclusion of the 2015 Pig Day Out and while addressing a brief WAPPA general meeting, also held on the same day and at the same venue, WAPPA president Richard Evison commended WA's producers on how well they collaborated with researchers and research institutions.

"Producer adoption rate of innovative technologies, especially those that directly improve

bottom lines, reflects the quality of the research that, in many cases, the producers are co-funding and this sustains WA's industry," Mr Evison said.

WA's pork industry employs an estimated 1700 full and part-time workers and an estimated \$50 million has been invested in housing and production systems during the past five years to meet new guidelines for sow housing and production efficiency.

WAPPA's new executive officer Jan Cooper encouraged members at the general meeting to engage with her in shaping WAPPA's direction.

The WAPPA executive committee comprises Graeme Dent of Cuballing, Dawson Bradford (vice president) of Popanyinning, Torben Soerensen (treasurer) of GD Pork, Dean Romaniello of Craig Mostyn Group and Richard Evison (president) of Westpork.

www.wappa.com.au



WA Liberal Senator and former veterinarian Chris Back explained his proposed private members' anti-trespass Bill.



Pork producers Sharon and Steve Martin of Wannamal and Pork CRC CEO Dr Roger Campbell shared a good laugh.



Pork CRC Honours graduate Yvonne Lau, Dr Trish Fleming and Dr Cameron Jose, all of Murdoch University, at the Pig Day Out.



Portec veterinarians Susan Dawson and Kim Nairn with industry consultant Mike Donnelly.



Speakers at WAPPA's 2015 Pig Day Out at Technology Park, WA included Ian Kruger of Ian Kruger Consulting and Janine Price and James Battams, both of APL. WAPPA executive officer Jan Cooper joined them after what was a very successful day.



Dean Romaniello and Amy Suckling, both of Crain Mostyn Group; Dr Kim Nairn of Portec Veterinary Services; and Dr Trish Fleming of Murdoch University enjoyed the Pig Day Out.



Karen Moore and Dr Megan Trezona, both of DAFWA; WAPPA president Richard Evison of Westpork; Pork CRC CEO Dr Roger Campbell; Dr Jae Kim of DAFWA; and Dr Cameron Jose of Murdoch University.



Dawson Bradford, Hillcroft Farms, Popanyinning; Mario Zaza, D'Orsogna; and Dr Bruce Mullan, DAFWA caught up at WAPPA's 2015 Pig Day Out.

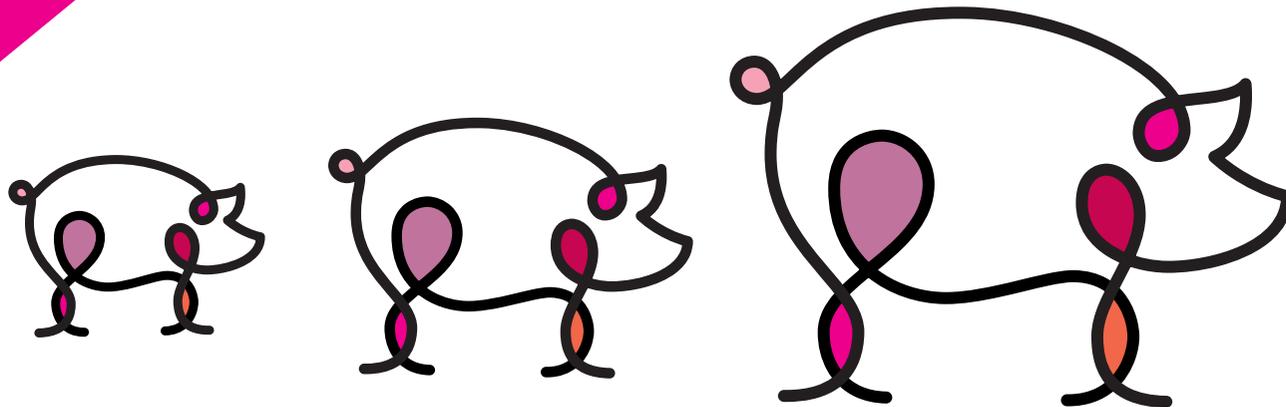


Samantha Sterndale and Karen Moore, both of DAFWA, sat with Pork CRC PhD candidate and veterinarian Diana Turpin at WAPPA's Pig Day Out.



Boypup Brook pork producer Stuart Coole and his daughter Millie chatted with APL's James Battams about registering pig movements.

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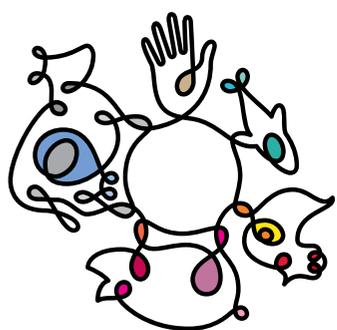
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