

Pork CRC Initiatives APN June 2016

by Dr Roger Campbell, Pork CRC CEO

Pork CRC proudly partners productive PPPE

The 2016 Pan Pacific Pork Expo (PPPE) was probably the best held to date. Everyone seemed buoyant and optimistic. I guess good prices and reasonable margins will do that.

You will probably read a lot about the 2016 Pan Pacific Pork Expo (PPPE) in this edition of APN.

Let me say it was probably the best held to date. Everyone seemed buoyant and optimistic. I guess good prices and reasonable margins will do that.

The plenary and technical sessions were well attended. We learned from a futurist to look forward and to understand that progress in IT, technology in general and science is far more advanced than we might think and we must keep an open mind and be aware of what is occurring if we don't want to be left behind.

Raising reproduction

I chaired a concurrent session titled 'Refocusing on productivity', where we heard from Zinpro's Dr Mark Wilson on advances in summer infertility and heat stress, from SunPork's Professor Robert van Barneveld on the hidden cost of variability and from Victorian producer Caleb Smith (Kia Ora piggy) on how the Smith team has increased born alive and is weaning 26.5 piglets/sow/year.

All had a similar message on improving reproduction in any season and that was maximising feed intake in lactation.

Mark showed that heat stress causes inflammation of the gastro-intestinal-tract and he provided evidence that this can be reduced using an amino acid bound form of Zinc. He told us how some of the best herds he works with cull sows that don't exhibit oestrus within seven days of weaning and those that return after mating. While this means you need a larger gilt pool, you end up with a reproductively more efficient herd.

Barneveld message

Robert showed that variability starts in early life, even at birth and that smaller pigs can survive and grow as fast as bigger pigs at birth and wean at the same live weight, but they eat less and never catch up. He told us how this variability is further increased by sales strategies and complicated with serious economic consequences by the market demand for different types of pigs (carcasses) and cuts. It all comes to a head at Christmas when demand for pigs/pork generally exceeds supply, which, of course, is exacerbated by summer infertility. There was a glimmer of hope, however, as it appears that feeding sows dextrose between weaning and remating may help reduce variability in subsequent birth weight. Unfortunately, there are few other technologies that can do this and Robert made the point, as I have on previous occasions, that a higher feeding level in any period of gestation, but particularly after day 28, will increase the weight of the sow at farrowing and adversely affect lactation feed intake. However, it will have little or no effect on birth weight or the variation around birth weight.

Smith system

Caleb showed how at Kia Ora they had always made progress in born alive, but not in number weaned and explained how they began to weigh every litter at birth and formulated a new index for

culling sows on the unit. Previously based largely on born alive, the index now includes born alive, litter weight and average piglet birth weight and number weaned (and maybe some other factors). Since basing replacement decisions on the new system they've seen number weaned increase over time and in 2014-15 averaged 26.5 piglets/sow/year.

Caleb thinks that apart from our genetics the biggest constraint on improving reproduction in Australia is our rather harsh (read hot) environment and our housing, especially during lactation, which rarely prevents sows from experiencing heat 'stress', except in the coolest months.

It was an informative session, with quite a few take home messages. I believe all presentations were filmed and will eventually appear on APL's website.

Sow block

Two products based on Pork CRC research were launched at PPPE.

One was the sow enrichment block and the other was Piglet Buddy.

The sow block was developed in a series of Pork CRC projects with Ridley Corporation and scientists at SunPork Queensland. It is based on molasses and ingredients which increase satiety and is intended to enrich the sow's environment at and after mixing in gestation.

The sow block changes sow behaviour after mixing and provides an easy means of improving the sow's welfare through its effects on satiety and enrichment. The sow block is available from Ridley and for more information you should contact your local Ridley representative.

Piglet buddy

Piglet Buddy is a formulation based on some of the best research I've seen on piglet taste preferences and was conducted for Pork CRC by Dr Eugeni Roura, University of Queensland. It is a low inclusion product (1.5 kg/tonne) to enhance the performance of piglets immediately after weaning when included in what might be termed simple diets. By this I mean diets which do not contain spray dried plasma, special fish products or acids.

The product is produced by BEC Feed Solutions and has been tested experimentally and commercially.

I have included a couple of graphs showing the performance of pigs in a commercial environment offered a conventional or complex weaner diet, a simple diet based on the conventional diet with the spray dried plasma, a special fish product and acids removed and the same diet supplemented with Piglet Buddy. All diets contained 10% milk powder. The pigs were weaned at 21 days, with an

average weight of 6.4 kg and performance was measured over 28 days.

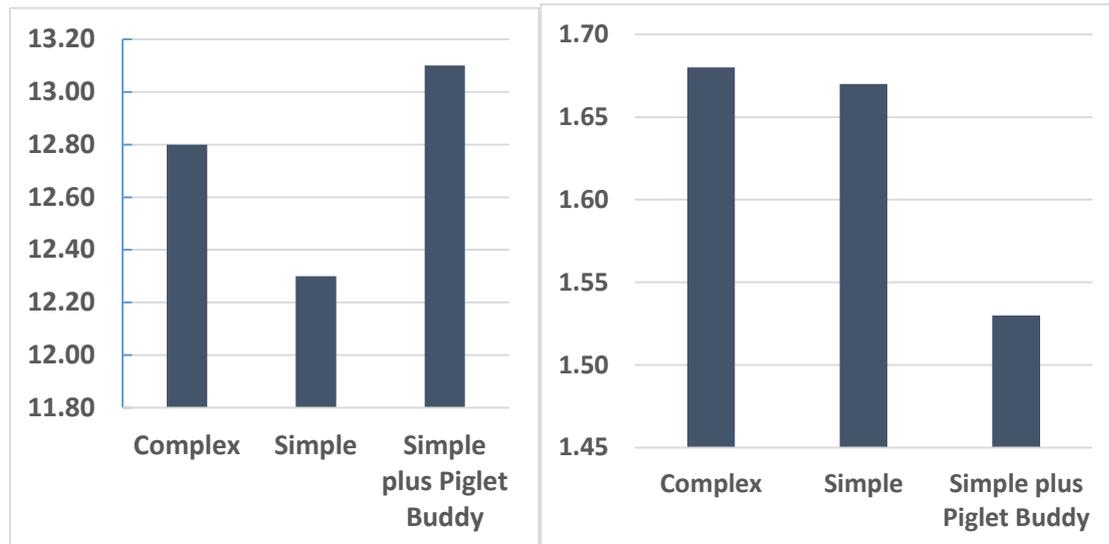


Figure: effects of a complex (conventional) diet, a simple diet and simple diet plus 1.5 kg/tonne Piglet Buddy on the weight (kg) of piglets 28 days after weaning and on feed conversion ratio between weaning and 28 days.

Piglets offered the simple diet supplemented with Piglet Buddy were the heaviest at 28 days ($P=0.07$) and, more importantly, had better feed: gain the first week after weaning than those offered the complex diet and significantly better feed: gain ($P=0.002$) over the 28 days than pigs offered either of the other diets. Under the circumstances of the study, using the simple diet supplemented with Piglet Buddy reduced feed cost to 28 days post weaning by approximately \$2.80/pig.

The product is worth a try, especially for those using low protein diets to reduce the incidence of E coli and those not using spray dried plasma in the first stage weaner feeds.

For information on Piglet Buddy, contact BEC Feed Solutions on 1300884593 or Pork CRC Commercialisation and Research Impact Manager, Charles Rikard-Bell, 0439 513 723 and he will point you in the right direction.

Lactation systems

Pork CRC and APL released our industry publication “Alternative Lactation Housing Systems for Australian Pork Producers” at PPPE.

If you weren't at PPPE or didn't get your hands on a copy, an electronic version it is available on our website. We're also happy to post you a hard copy if you prefer – contact Rebecca on 08 8313 7743.

The report summarises research and experiences with four alternative systems, namely the Combi-Flex pen, the 360 farrower, the SWAP pen and the PIGSAFE pen.

The report also features a table showing the attributes of each system, compared with the traditional farrowing crate based on the sow (behaviour, physiology, body condition and reproduction), the piglet (behaviour, physiology, growth rate and mortality) and the producer (capital cost, labour requirement and OH&S issues). In all cases the traditional farrowing system was given a value of 100 and the others were scored/ranked accordingly, based on research outcomes and experiences of the different systems of the advisory panel who put the publication together. They included producers who've installed some of the lower confinement systems.

The lower confinement systems were generally scored higher than the traditional system based on sow behaviour. However, sow physiology was considered similar across the systems, as was subsequent reproduction. The lower confinement systems scored lower for sow body condition, but slightly higher for feed intake, although you'd think this might actually be a cost to the systems given the sows had worse body condition and the same reproduction.

Advantages trumped

For the piglet, the PIGSAFE pen and the SWAP pen scored higher than others for behaviour and marginally better for pre weaning growth rate. However, these potential advantages were trumped by the higher pre-weaning mortality and lower physiology scores for all reduced confinement systems compared with the conventional system.

When the producer was considered, all the alternatives scored lower than the traditional system. They all have high capital cost, require greater labour input and all have occupational health and safety issues.

The publication is a work in progress and for your information only. There is increasing research evidence that all the alternatives so far investigated have no net welfare benefit. The latter conclusion was arrived at recently by a New Zealand panel (National Animal Welfare Advisory Committee) which was asked by NZ Minister for Primary Industries to investigate if there were alternatives to the traditional farrowing crate. The panel concluded there wasn't, based largely on the adverse effects of the lower confinement systems on piglet welfare. The panel further suggested that all the considered alternatives, which included the Canarm pen (from Canada), the 360 farrower and the Danish Combi-Flex pen, were not financially viable.

Danish differences

Interestingly, some Danish researchers at PPPE suggested to me that their latest research shows only minimal differences in the behaviour of sows farrowed loose or confined. Based on cortisol levels it also appears that the sow's welfare is 'better' when confined before and during farrowing than when allowed to farrow loose.

Pork CRC researchers at University of Melbourne and SARDI are conducting detailed studies on the behaviour and physiology of sows during and immediately after farrowing. The research is genuinely innovative and should tell us what the needs of the sow are during farrowing and if required how welfare might be improved in traditional farrowing systems. The first results will be available in 2016 and I will let you know as soon as they are available.

Student workshop

I was proud and honoured to share the day before PPPE with the wonderfully talented and enthusiastic group of Pork CRC and APL supported students. The student workshop, now a fixture at PPPE, was very interactive, with the students participating in several exercises, all with serious messages, but some with fun methods. I particularly congratulate our former Pork CRC PhD student, now Dr Robyn Terry of APL, for the way she put the program together and kept everyone stimulated for what was a very full day, topped off by a relaxing and sociable dinner in the evening. I believe there's even pictures to prove it elsewhere in this edition of APN.