

### **Turbulent time in US and global pork markets**

I spent a week in the USA in mid-March to attend the Mid-West animal science meetings and catch up with some of the key industry players. Although bitterly cold in Omaha, I warmed to some interesting experimental outcomes and industry trends.

Despite low and variable margins in the past 12-24 months and declining domestic demand for pork, producers are expanding production and investing in packing (processing). The investment in packing is probably encouraged by the excellent margins made by packers in the past five years when their margins have ranged from \$20-\$50 per pig processed.

### **Trump futures**

Producers were buoyed by an unseasonal increase in pig futures since the election of Donald Trump, but these have fallen more recently in response to the increasing number of pigs being produced. Profitability in 2017 will therefore be questionable, probably unlikely and dependent on exports. An economist who presented at the meeting believes there will be more change to the US industry in the next three years than there has been in the past 20.

With the possible exception of China, most other pork producing countries are in a similar position for 2017 and competition between the major exporters will be fierce, with China being the prime target. The country most affecting the status quo in the export stakes is Spain, which has grown considerably as an exporter in the past five years.

In Australia our feed costs have fallen compared to 2015 and 2016, with estimates for the eastern states of \$370-\$390/tonne (compared to \$420-\$440/tonne in 2015 and 2016). Costs, however, seem considerably higher in Queensland and I am not sure about WA.

This is a major relief, but with feed cost higher than might have been anticipated, margins in 2017 will depend on how much further pork price might decline and, of course, the type of supply contract producers have.

In the last week of March, the average eastern seaboard price, including sow meat, was around or under \$3.15/kg and varied by state. This would have been a problem in 2016 when feed cost was around \$430/tonne but we will have lower margins in 2017 and could have a problem if price continues to fall – let us hope the latter is not the case.

### **On trend**

I will soon send everyone on my producer database a summary of the more interesting outcomes from the meetings, but the general trends obvious during the visit were a continual improvement in reproduction, more judicious use of antibiotics driven by veterinarians and the continual impact of disease on grower-finisher efficiency. On average, survival post-weaning is around 86%, with most losses associated with PRRS and swine influenza virus. We do not want PRRS! Despite the inefficiency caused by these diseases, COP in 2016 was around \$1.80 AUD/kg carcass weight and will likely be lower in 2017.

### **Semen additives**

A 12 month study in Brazil investigated the effects on reproduction of adding materials to semen 15 minutes before insemination. The materials investigated were PGF2 alpha, oxytocin and GnRH. The

additives were only included in the first dose of semen administered to sows. Otherwise, the procedure was common across treatments. AI was intra cervical.

The treatments:

- 1) 87 µg of cloprostenol (Planate®, Schering-Plough Animal Health; n = 158) – source of PGF2 alpha
- 2) 5 IU oxytocin (Ovivetex®, S.P.Veterinaria; n = 154),
- 3) 0.2 µg buserelin acetate (Receptal®, Merck; n = 93) –source of GnRH
- 4) 5 IU oxytocin + 0.2 µg buserelin acetate (n = 81), and
- 5) Control (n = 605).

I am not sure what semen additives are used in Australia and previous research tended to show positive outcomes generally only in ‘underperforming’ herds. This study was conducted in what the authors termed an average performing herd in Brazil and the control results tend to confirm this. While the results suggest using one of these might be worth investigating, it’s probably best to discuss with your semen supplier and veterinarian. There were no interactions with parity or season.

Treatment	Control	cloprostenol	oxytocin	buserelin	oxytocin +buserelin	P
Pregnancy rate (%)	87.9	89.6	91.3	94.0	84.0	NS
Farrowing rate (%)	85.0	88.5	89.3	93.1	82.2	NS
Total born	13.0	14.6	14.2	14.7	14.5	<0.001
Born alive	11.6	13.4	12.9	13.6	13.2	<0.001

### Lactation length

We are all aware of the effects of weaning weight on pig performance to sale, but we tend to forget the ‘natural’ variation in lactation length, which occurs within a weekly production system and how this might contribute to variation in lifetime pig performance.

Researchers in Spain investigated this in a study to observe the effect of the lactation length of sows (belonging to the same batch) on the subsequent performance of piglets at weaning and at 165 days of age. Seven hundred and two male and female crossbred piglets [Pietrain x (Landrace x Large White)] from 70 multiparous sows (parity ranging from 2 to 10) were used and individually weighed every three weeks (from birth to slaughter).

Lactation length within the group ranged from 18 to 22 days and had a considerable effect on the weight pigs were weaned and their weight at 165 days of age. Results are shown below.

The outcome is not so surprising and the difference in sale weight would be reduced if all pigs were sold at the same age, which is encompassed in the close-out strategies used by producers.

The results, however, suggest that technologies such as Ovugel and others to synchronise ovulation after weaning would help reduce this variation in weaning and sale age and weight, which occurs within production systems.

Lactation length (d)	18	19	20	21	22	Probability
Weight at weaning (kg)	4.54 b	5.31 a	5.50 a	5.64 a	5.53 a	0.001
Weight at 15 days (kg)	93.2 b	96.5 ab	96.8 a	98.0 a	100.1a	0.004

### Reproduction targets

There were several presentations on gestation and lactation studies, generally conducted within commercial operations. I will report later on what new technologies were tested, but in this APN column I just want to highlight the levels of performance being achieved.

The Danes reported the results of a study on dietary protein levels in lactation on sow and piglet performance. Sows started with 14 piglets and weaned 13. Sow weight loss and piglet growth performance were affected by dietary protein, as was subsequent litter size. Subsequent total born averaged 18.5, with born alive around 16.5 – a target I think is way beyond us and not necessarily desirable.

For US herds, total born was around 15, with born alive around 14-14.5, which I think might be achievable.

### Sow studies

Results of one large study to monitor feed intake, growth rate and feed efficiency in group housed pregnant sows is shown below.

The study involved 712 PIC Line 1050 sows mixed on day five after mating, housed in dynamic groups of 260 and fed from ESFs (six per pen). Sow weight was recorded as sows exited the ESFs.

Gilts were offered 2.0 kg/d feed through to day 112 of gestation. Older sows were offered 2.26kg/d during the same period – no sows were bump fed during gestation. Thin sows (12 in total) were allowed 3.0 kg feed/d.

Feed intake, growth rate and feed efficiency were measured over different periods of gestation. During gestation all sows failed to consume their allocated feed allowance during the first 10 days after mixing, but ran along their allocated allowance thereafter. I will include these results in my producer summary of the meetings.

Feed intake in gestation had little effect on lactation performance, although there was a small but significant positive effect of weight gain in gestation on litter size and a small significant negative effect in parity three and older sows between P2 gain in gestation and litter size.

The performance of sows during gestation and lactation, as summarised below, was generally excellent and something we should aim for. The NZ herd in our benchmarking project uses US genetics and reports 15 total born in sows and 13.45 in gilts. The corresponding born alive figures in 2015 were 13.73 and 12.3 respectively, so quite a large difference in litter size of gilts (gilt total born in the US herd was 14.8) and the BA/TB ratio between the US and NZ herds, but clearly opportunities for improvement in NZ and Australian herds. I understand a number of Australian herds achieve 14 born alive, so there is hope.

Trait	Mean	Range
Parity	2.3	1-6
Feed Intake (kg/sow in gestation)	228	181-310
Body weight gain (kg)	56.8	8-116

P2 at day 5 (mm)	16.1	8-26
P2 at day 112 (mm)	16.6	7-28
Farrowing rate (%)	95.0	0-100
Total born	14.9	1-25
Born alive	14.2	1-23
Number weaned at 23 days	13.3	0-17

### **COP bashing**

So, it's an interesting time in Australia and globally and you can never take things for granted.

The pursuit of efficiency and cost reduction is ongoing and maybe in need of acceleration in Australia.

The summary of the US meetings will be with you soon.

Meanwhile, I remind all producers, once again, to keep working at reducing COP.

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