A newsletter for
pork producers

PigBytes

Issue 30 August 2016

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It is Illegal to take Feral Pigs to Saleyards!

Jayce Morgan

From time to time someone delivers pigs to the saleyards that look like they are feral pigs. This usually causes a range of emotions among regular sale attendees and can lead to questions like “Who is responsible for making the call on their feral-ness?” and “Why isn’t something done?”

Figure 1: Feral pigs in Western NSW.

Source: Troy Crittle NSW DPI

There is no prescriptive definition of a feral pig.

Feral pigs do tend to have certain distinctive characteristics but not all pigs will have all characteristics. The Invasive Animals CRC describes the feral pig as follows:

Feral pigs in Australia descend from domestic swine, but look more similar to Eurasia’s wild boar than their domestic counterparts.

They tend to have sparse, coarse hair on lean and muscular frames, well-developed necks and shoulders that taper to short hindquarters.

Colouration is predominantly black, rust-coloured or black and white spotted. Females are usually smaller and weigh less (50–60 kg) than males (80–100 kg).

Pigs have keen senses of smell and taste and good hearing, but their eyesight is generally considered to be poor. (Feral pig Factsheet August 2011)

Local Land Services operate under the *Local Land Services Act 2013*. Local Land Services participate in on-ground detection and control of vertebrate pests and plague locusts in NSW.

This work includes giving advice on pest animal management techniques, assisting land managers to reduce the impacts of pests through the coordination of group control programs, conducting inspections for pest species and regulating compliance with the *Local Land Services Act 2013*.

LLS Biosecurity officers do inspect suspect feral pigs at the saleyard. Their procedure is to compare the suspect pigs to a checklist for feral pig identification, take a photograph, check the PigPass NVD, talk to the producer and do a follow-up visit to the farm.

The increase in outdoor production and the use of the coloured ‘heritage’ breeds can make it difficult to distinguish feral pigs especially when some of these pigs have poor genetics, poor nutrition and are lean and rangy looking.

However pork producers should remember that it is an offence to capture, keep and transport live feral pigs under the Local Land Services Act, with fines up to a maximum of $20,000 applicable.

Figure 2: Suspect feral pigs at the old Forbes saleyard.

Source: Jayce Morgan

Biosecurity Officers from the LLS do have the power to destroy pigs that are deemed to be feral.

Feral pigs can carry leptospirosis, porcine parvovirus, erysipelas, and *Brucella suis* (porcine brucellosis).

Leptospirosis, erysipelas and *Brucella suis* (B suis) are zoonotic (contagious to humans) and dogs can be infected with *Brucella suis* if for example they eat infected meat.

If you have any concerns about the pigs at a sale in Forbes you should contact Alicia Whiley Biosecurity Officer at the Central West LLS mobile 0447 025 940 or the CW LLS office in Forbes 02 6850 1600.

Further reading:

NSW DPI website Feral Pig Biology

Pest Smart Connect Feral Pigs

NSW DPI Primefact Brucellosis (*Brucella suis*) in pigs

Improving the Uniformity of Piglet Birth Weight

Sara Willis

During the few days from weaning to oestrus, nutrition of the sow is important.

Studies have shown that adding dextrose to the diet between weaning and oestrus (WOI) can lead to more even birth weights within a litter.

This is a strategy that is commonly used by European pork producers.

Dextrose (also known as glucose) is a simple sugar. Fructose is the principal sugar in fruit and sucrose is table sugar.

Sucrose is a complex sugar, containing one part each of glucose and fructose. Sucrose must first be broken down to glucose by the enzyme sucrase before it can enter the bloodstream and be absorbed by the pig.

As dextrose is a simple glucose sugar it enters the system more rapidly and stimulates a rapid rise in insulin concentration. This stimulates the secretion of the hormones that are considered to improve follicle development resulting in more uniformity in piglet birth weight.

In a 2006 study by Van den Brand *et al*, sows were given 150g of dextrose/day (75g twice daily) as a top dressing on their feed from day one after weaning until the end of oestrus.

The reproductive performance of 186 sows was measured and the piglets from 176 litters were individually weighed after birth and at weaning.

There was no effect on the number of live born pigs, the number of still born pigs or number weaned (Table 1) but it did improve the uniformity (co-efficient of variation) of birth weight (Table 2) primarily by reducing the number of piglets with a low birth weight.

Table 1: Effects of dextrose given during WOI on reproductive performance.

Dextrose	Control	Dextrose	Significance
Number of Litters	93	93	
Live born piglets	13.19	12.87	NS
Stillborn piglets	0.76	0.57	NS
Weaned	10.95	11.24	NS

Source: Van den Brand 2006 (WOI=wean to oestrus interval)

Table 2: Effects of dextrose given during WOI on piglet birth parameters.

Dextrose	Control	Dextrose	Significance
Number of litters	85	91	
Live born piglets	12.71	12.91	NS
Birth weight (kg)	1.59	1.61	NS
Coefficient of variation Birthweight (%)	21.2	17.5	S
Litters with piglets < 1kg	45.9	40.7	NS
Piglets < 1kg %	8.1	5.1	NS

Source: Van den Brand 2006 (WOI=wean to oestrus interval)

In a further study by Van den Brand *et a*l (2009) sows were supplemented with dextrose (25g/kg diet) and lactose (25g/kg diet) during the last week of gestation and during the 27 day lactation period.

The feed was then top dressed each day with 150g dextrose plus 150g lactose during the interval from weaning to oestrus.

Table 3 shows that supplementing the feed with dextrose and lactose reduced variation in birth weight within the litter.

Table 3: Effect of feeding dextrose plus lactose during lactation and WOI on piglet birth parameters

	Control	Dextrose + Lactose	Significance
Litter size total born	14.25	14.40	NS
Birth weight (kg)	1.46	1.55	S
Coefficient of variation (CV) birthweight (%)	23.7	20.5	S
Total mortality (%)	20.4	17.2	S

Source: Van den Brand 2009 (WOI=wean to oestrus interval)

A recent study by Wientjes et al (2015) showed that litter uniformity can be compromised by severe sow body condition loss during lactation.

For example, an increase in back fat loss during lactation from <2 to >5mm resulted in an increase of 1.8% in birth weight variation.

These effects are likely caused by insufficient repair of follicle development.

Although these effects may seem small, Wientjes et al 2012 reported that for every percentage increase in birth weight CV, early piglet mortality increases by 1.08%.

In Table 4, the 1.8% increase in birth weight CV (20.6 to 22.4) may be estimated to increase pre-weaning mortality by nearly 2%.

Birth weight uniformity is also associated with more variable weaning weights which have flow-on effects on post-weaning growth.

Table 4: Effect of sow body weight change on litter characteristics of total born piglets (only for sows < 7 day WOI)

Body condition change variable	Litter characteristic	Lowest 20%	Average 60%	Greatest 20%
BW loss during lactation (kg)		<8	8 to 28	>28
	SD body weight	281[a]	299[ab]	307[b]
BW loss during lactation (%)		<3.5	3.5 to 13	>13
	SD birth weight	279[a]	299[ab]	307[b]
Backfat loss during lactation (mm)		<2	2 to 5	>5
	SD birth weight	285[a]	297[ab]	310[b]
	CV birth weight	20.6[a]	21.6[ab]	22.4[b]

Source: Wientjes et al (2015) (Within rows means without common superscript differ) (WOI=wean to oestrus interval)

1. Standard deviation (SD) is a number used to tell how measurements for a group are spread out from the mean value.
2. The **coefficient of variation** (CV) compares the spread of data sets that have different **means**.

Even though the wean-to-oestrus interval is a short period of time (less than 7 days), there are management strategies for restoring and/or improving follicle development to ensure good litter uniformity and piglet survivability.

Strategies that could be considered by readers to reduce piglet variability include:

- Feeding 3.0kg+ of a high quality diet (eg lactating sow) supplemented with 150g of dextrose/day as a top dressing on sows feed or included in the diet at 5% (for a 3kg/day intake).

- Skip mating (particularly parity 1) sows that have lost too much condition during lactation. More than 10% of body weight loss during the first lactation severely affects performance in parity 2.

  However, skip mating should not be seen as a solution for deficiencies in gilt management or feed management during lactation and gestation.

Skipping a heat has a cost, so its benefits need to be evaluated from an economic point of view.

APIQ Auditor Summit

Jayce Morgan

Earlier in July Sara Willis and I were invited to join with the APIQ auditors at their annual summit. It was an interesting exercise and the auditors and APIQ administration have a demanding job.

Quality assurance is a serious business – even the administration team is independently audited to ensure a valid and unbiased approach.

Three things I learned:

1. APIQ certified farms are audited annually with the farmer required to complete an internal-audit at around the six months interval between the annual third party audits. The internal audit process seems to be a bit of a stumbling block for many farmers both large and small.

An internal-audit means the farmer is required to look at his systems and make sure all the recording is up to date and completed correctly. An internal-audit does not have to be as comprehensive as the third party audit but it is required to be completed.

One of the best ways to highlight areas requiring attention is to invite someone from outside the business for a look around the piggery. It is a bit like having unexpected visitors in your home – things that you have been ignoring such as that pile of papers on the kitchen bench, or those dirty clothes in the hallway – suddenly become a bit of an embarrassment.

To look at your piggery with a fresh set of eyes allows you to pick up the things everyone has been too busy to notice. Just remember to record the visit and what things you found to improve.

2. Sometimes I hear farmers complain about the annual APIQ audit saying it is too frequent or too expensive. Well we were all invited to tour the Maydan beef feedlot about 80 km out of Toowoomba. It was a really interesting visit.

This feedlot was very impressive. The quality of the cattle and the attention to detail was obvious. And the farm welcomes three external audits each year.

The other noticeable thing was that they were passionate about what they were doing and proud to be doing an excellent job. It was a credit to the owner and his staff.

3. The proportion of pork production sites covered by APIQ certification ranges from 99% among the very large commercial pork production operations (>1000 sows), down to 40% among small commercial producers (51-150 sows) and only 10% of small holders (8-50 sows).

Overall 90.1% of Australian sows were on farms with APIQ QA in place.

Supermarkets, export licensed abattoirs and some food service organisations require farms to have QA. To a large extent QA is market driven and some markets appear to have no requirements for QA at least until there is a food safety issue.

There are many small scale producers marketing their pork through farmers markets and making production claims such as free range or chemical free. For many consumers knowing the farmer vendor and /or the ability to visit the farm is all they require as proof of production method.

However it must be remembered that the PigPass NVD is a legal document and it should be fully and properly completed for each transaction and groups of pigs regardless of where they are sold. Records are essential to support your claims and this is where a system such as APIQ can be a useful management tool.

Participation in recognised QA systems provide a basis for objective assessment of production systems and can be useful in situations where the social license for an activity is under threat.

Outdoor Sows – Lessons from the Past

John Riley – JCR Associates International

Sows running outdoors for the whole of their production cycle account for about 10% of the national herd. In addition, there are a number of producers who run sows outdoors for part of the production cycle.

The growing interest in running sows outdoors for the whole of their production cycle has been stimulated by consumer demand. The demand has been met by smaller producers supplying a niche market and larger commercial producers producing a branded product for sale through supermarkets usually meeting the APIQ standards for Free Range or Outdoor Bred certification.

There is nothing new about running sows outdoors. They have run outdoors for centuries and being omnivores can utilise a vast range of feed sources from aardvarks to zucchinis, from barley to worms and every other animal, vegetable or mineral source known to man.

Richard Roadnight, a forward thinking farmer in the South of England, is credited with the establishment of the first large scale outdoor commercial sow herd. The Roadnight system was based on Britwell Blue sows, which were run on a rotational grazing system on cropping farms.

The Britwell Blue was produced by crossing a Large White boar over a Saddleback sow with the gilts produced mated to a Landrace boar to produce slaughter progeny.

The reproductive performance of the coloured Britwell Blue sow was considered to be less affected by climatic conditions. It was claimed that they could tolerate both low and high temperature better than a white sow .The Roadnight system was to farrow sows only in March and September to reduce the effect of summer infertility and autumn abortion. The piglets were weaned from their very protective dams at 6-8 weeks of age and often moved to the west of England to be fed in part slatted buildings on whey produced by the cheese making farms in that area.

The carcases were often penalised in the market place for fatness and belly hair and so a low cost feeding system was essential to compensate.

Outdoor production was and still is attractive because it is a system with low fixed costs (overheads). However, it does incur higher variable costs than indoor systems; a fact that should be realised by potential new entrants.

In the UK the fixed costs were contained by the pig producer renting an area of light free draining soil, growing a temporary ley for a couple of years and then moving to another location. The owner of the land received a rent equivalent to the value of a tonne of barley grown on each acre used by the pigs. The land owner also had the residual value of the fertiliser benefiting subsequent high value crops.

Today, the consumer's demand for an all the year round supply of a heavier, leaner carcass has seen the Roadnight system being consigned to the archives.

The white sow has replaced the coloured sow, with continuous flow systems practiced. The pigs are finished on straw to qualify for APIQ Free Range or Out Door Bred certification. However, the problems of summer infertility and autumn abortion continue.

Figure 3: Outdoor sows with moveable shelters.

Source: John Riley

Smaller herds

For the owners of smaller herds lessons learnt from revisiting the Roadnight system might be profitably applied to their outdoor sows. A coloured cross bred sow will be less prone to sunburn.

Groups of sows farrowing twice a year could simplify management. Farrowing the sow as one group in spring and autumn might reduce the effect of summer infertility and autumn abortions and improve reproductive performance in particular farrowing rate. Piglet mortality in mid-winter and high summer can be depressing for the owner and reduce significantly the number of pigs weaned per litter. In addition, if the progeny were grown to slaughter weight, an all-in-all-out feeding system could be practiced allowing any health benefits from farrowing outside to be expressed as increased growth rate, improved feed utilisation and reduced cost per unit of weight gain. Group farrowing might also allow the grazing of pastures

and standing crops and the feeding of products such as maize silage to be more practical, thereby reducing feed costs.

The improved production and savings made in feed costs might more than compensate for any penalties incurred by a few penalised carcasses.

Outdoor production is not a system for heavy soils and due consideration needs to be given to the control of predators and the threat to bio-security of birds and feral pigs. In the UK two legged predators are also known to be a problem!!!

Inclement Weather and Outdoor Pigs

Jayce Morgan

Anyone with livestock knows that things get pretty muddy pretty fast when there is a lot of animal and vehicle traffic and there has been over 25 ml of rain. Wet weather also demonstrates how successful you were in site selection and layout for your piggery.

The rooting behaviour of pigs and the need for daily feeding means parts of their paddock can very quickly become a quagmire. High traffic areas such as roadways, the area around feeders or water points and shelters are usually the worst.

Soil type will also have an effect.

Fine textured soils such as clays will be compacted which in turn can result in increased runoff or ponding. Clay soils tend to be sticky when wet and form clods when they dry out. This can be problematic for paddock renovation and soil amelioration.

Sandy soils are less prone to compaction but it does depend on the clay content or other fine particles and the underlying structure of the soil profile.

Slope and drainage lines will also determine whether water drains away or collects in an area.

Your management of the pigs in inclement weather will depend on two things:

- Pig welfare – are the conditions affecting their health or mobility? Mature animals may be ok in a quagmire temporarily (a week or less) but piglets or weaners may suffer with the cold and an inability to reach the feeders or waterers. Base your management decisions on how the pigs are coping. For example move pigs to a new paddock or move feeders and waterers to different area of the same paddock.
- Accessibility – are you able to deliver their feed regularly and check that their water supply is unaffected by the weather conditions? If you are unable to access the paddock then you are unable to adequately care for the pigs. You will have to move the pigs to an area where you can look after them.

Pigs do like to wallow sometimes even in winter but it is important that there is enough shelter for all pigs to have a clean dry bed out of the weather.

Pay particular attention to compromised pigs – those that may be sick or lame. These pigs should not have to walk in quagmire conditions for their feed or water.

Cold wet weather also makes for uncomfortable working conditions for the stockperson.

Now is a good time to think about how you can make things better.

Can you adjust fence lines to avoid future problems?

Feed bin location is important as this is a high traffic area – can these be better sited?

You may need to consider whether to shorten the paddock rotation length or adopt a policy of sacrificing a few paddocks to save the rest in terms of compaction and pugging.

However your primary concern should be the pigs' welfare.

Noticing difficulties, recording and implementing management changes are all components useful for the self-audit – just keep records of the change.

Pork Producers to Discuss Future Challenges at QPCG Industry Day

Sara Willis

The Australian Pork Industry will face a number of challenges over the next five to ten years.

To provide producers with an opportunity to evaluate the merit of a number of new and emerging technologies, the Queensland Pig Consultancy Group (QPCG), and Department of Agriculture and Fisheries (DAF) with support from Australian Pork Limited (APL) will host a seminar titled *Preparing for Future Challenges – Where will you be in 2025?*

Sara Willis, DAF Principal Extension Officer and Chair of the Queensland Pig Consultancy Group, stated that the seminar will feature speakers who will identify technologies to stimulate decision making initiatives in pork production businesses.

Topics include:

- The future of technology and data in agriculture
- Product innovation stimulating pork consumption
- Minimising antimicrobial use in pork production
- Identifying business priorities
- Weaners - the foundation for future growth
- Investing in the future
- Building and retaining a successful team
- Herd health, strategies that put you in control

The seminar will be held at The Armitage Centre (Empire Theatre), Neil St, Toowoomba on Friday 21 October. People wishing to receive an invitation should contact Sara Willis sara.willis@daf.qld.gov.au or phone 0423 027 053.

Pig Manure – the (Road) Way for the Future

Sara Willis

Researchers at the North Carolina Agricultural and Technical State University have found a way to extract the rich oil in pig manure to create a glue adhesive that strengthens asphalt.

Asphalt also known as bitumen is normally made from petroleum—a derivative of crude oil. The renewable asphalt substitute called Bio-Adhesive is durable enough for highway traffic.

During processing, the manure aroma is filtered out and the by-products of the manufacturing process are used as fertiliser by farmers.

Pig Breeding Workshops

Susanne Hermesch

Breeding Focus 2016 workshop "Improving animal welfare" – multi species

Joint conveners: Animal Genetics and Breeding Unit (AGBU) and CSIRO
Where: Armidale Bowling Club
When: 10.30 am Tuesday 6th to Wednesday 7th September finishing approximately 3pm
Workshop dinner Tuesday night at the Bowling Club
Cost: $350 includes dinner Tuesday night.

Pig Genetics Workshop

When: Thursday 8th September
Where: Armidale Bowling Club
Registration Website for both workshops: http://agbu.une.edu.au/breedingfocus.html

Questions: Kathy Dobos Phone 02 6773 2055
Email: kdobos@une.edu.au

Reminder – APL Memberships

Pork producers are reminded that membership to APL is due for renewal and applications close August 31st 2016.

APL membership is free but is not automatic because you are registered for PigPass or you pay levies – **You Must Apply for Membership.**

Membership gives you access to the members only section of the APL website and you will receive all the various newsletters that are generated by APL. You can also nominate or vote for the delegate of your choice.

To register you must complete the form and a Statutory Declaration listing the value of levies paid.

Register online via the APL website http://australianpork.com.au/members/

or fax or post your application by August 31st 2016.

For assistance contact APL's Events and Memberships Executive Heidi Eldridge on 02 6270 8807 or at heidi.eldridge@australianpork.com.au

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