A newsletter for pork producers

PigBytes

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Influenza Vaccination

Amanda Lee

Influenza A viruses are highly infectious respiratory pathogens that can infect a range of species. Birds are the reservoir for all known influenza A subtypes. Novel influenza viruses can emerge from birds and infect mammalian species including humans. Pigs are susceptible to infection with both bird and human influenza viruses.

In July 2009, the first pig herd in New South Wales was infected with influenza A(H1N1)pdm09. The infection was most likely transmitted from an infected worker who was in contact with the pigs. Cases of human-to-pig transfer have also been recorded in other States of Australia and overseas.

Any influenza virus is spread via contact between a susceptible human/animal and an infected human/animal – usually via droplets and aerosols from sneezing and coughing. Influenza can also spread after touching surfaces where infected droplets have landed.

Influenza in people can be prevented by vaccination, but a new vaccine needs to be given each year (before winter) because influenza viruses change (mutate) constantly. Seasonal influenza vaccination is available for anyone aged 6 months and over to protect against influenza, provided they do not have a medical reason that precludes them from receiving influenza vaccines (e.g. a severe allergy to eggs).

All people working with pigs and poultry should be encouraged to become vaccinated against the relevant influenza strains circulating in the community on an annual basis.

Do not allow visitors who have any signs of influenza (fever, chills, cough, sore throat, runny or stuffy nose, muscle aches, joint pains, headaches and fatigue) to contact your pigs. The same rule should apply to you and your staff. Note that people can shed the virus before they have symptoms.

For more information see the Department of Primary Industries web page on Avian Influenza at http://www.dpi.nsw.gov.au/agriculture/livestock/poultry/health-disease/avian-influenza or contact Amanda Lee, the Senior Veterinary Officer Pig and Poultry Biosecurity on 02 4640 6308 or at amanda.lee@dpi.nsw.gov.au.

Improving Herd Management through data capture

Trish Holyoake

Herd recording is a vital part of good farm management ("you can't manage what you don't monitor"). Monitoring both reproductive (farrowing rate, born alive litter size, mummies, stillbirths, numbers weaned) and growing (deaths, growth rate, feed conversion efficiency) herds performances can provide an early indicator of disease events.

There are a number of excellent software programs available in Australia (WinPig, PigWin,

PigCHAMP, Eliteherd etc) for pig farmers to record farm data.

With surveillance for exotic and new diseases being a core component of state agricultural agency work, the Pig Services Centre at the Department of Economic Development, Jobs, Transport and Resources in Bendigo recently hosted a seminar on herd recording. The seminar was held on two days and attracted approximately 12 veterinarians and 30 pig producers.

The broad principles of these herd recording software programs are that they allow the farmer to enter data for individual breeding animals and batch data entry for growing stock which can then be analysed by management and/or consultants to assist with problem-solving poor performance.

When analysing farm data, it is important to consider:

- Seasonal trends. Breeding and growing herd performances are both affected significantly by temperature and season. Compare recent data with data from similar time periods in previous years.
- Dam parity. Averages can be deceiving. Identifying poor performing parities can help fine-tune where to place your management efforts. An example is the normal increase in stillbirths with increasing dam parity. A spike in average mummification rate in the sow herd due to a disproportionate increase in gilt mummy rates can signal infectious reproductive failure (eg. Porcine Parvovirus)
- Accurate identification of breeding stock. Tags occasionally fall out of sows' ears. Either double-tag them or apply an individual body tattoo on the animal.
- Interpreting staff mating performance through service outcomes. Ensure that individual's mating performance is not confounded by the type of sows they are responsible for mating. Don't be too hard on Mary if she gets poor mating results from doing all the repeat matings!
- Sample size. Small herds (<30 sows) may struggle to have enough data to make sensible conclusions on herd performance when the data is split by parity/breed.
- Hand-held devices that can be linked to herd recording systems are increasing in popularity to reduce the amount of paper-based recording done on-farm. When replacing your paper-based system with an electronic one, ensure that your records are still compliant with relevant regulations. This is particularly important for recording disease treatments with medications that have a withholding period. Remember to back up your data.

The correct way to trim boar tusks

Trish Holyoake

Mature boars have 4 tusks – 2 each on the top and bottom jaws. These tusks grow about 2 cm every 6 months. Tusks on a boar are potentially dangerous to other pigs as they can damage sows during courtship and can be deadly to other boars during fighting.

Boar's tusks, particularly those on the bottom jaw, pose a health and safety hazard to stockpersons handling the boar.

For this reason, saleyards and abattoirs may refuse to receive boars with long tusks.

It is advisable to trim the tusks of mature boars every 6-12 months and/or before boars are sent for sale or slaughter.

Trimming boars' tusks is at least a 2-person job. The welfare regulations in some states only allow tusk trimming to be performed by a veterinarian or by a person who has been trained and assessed as competent to conduct the task.

There is some degree of discomfort to the boar during the process of restraining and trimming the tusks, so it is vital that you have the appropriate facilities to restrain the boar and to undertake the trimming. Make sure to wear hearing protection.

Tusk trimming is made much easier when the boar is sedated. Most sedatives are Schedule 4 substances (prescription animal remedies), so sedation must be carried out under the direction of your veterinarian.

Sedatives take around 30 minutes to become fully effective, so leave the boar alone until the sedative takes effect and afterwards until it wears off. Be sure to observe the withhold period of the sedative when trimming the tusks of boars prior to sale.

Use a crush or crate to restrain the boar if possible. A rope with a long running noose tied to a nearby post or rail should be used to hold the boar still. Place the running noose over the top half of the snout and behind the molar tusks. A block is helpful as a gag to keep the boar's mouth open whilst trimming the tusks.

Tusks are best trimmed using obstetrical or embryotomy wire. Wire and handles can be purchased from a number of farm supply companies.

Figure 1: A boar restrained in a race ready for tusk trimming.

Source: Jayce Morgan

Bolt cutters are not recommended as they are difficult to manipulate and may shatter the tusk leaving sharp protrusions. In extreme cases, the jaw can break if trimming is attempted using bolt cutters.

Only the bottom tusks need to be trimmed as the tusks on the top jaws are not used in fighting by the boar.

Figure 2: Close up view showing the bottom tusks which are the only tusks that need to be trimmed.

Source: Jayce Morgan

Place the obstetrical wire around the tooth and saw through the tooth backwards and forwards until you cut completely through. Cut approximately 1 cm above the gum margin to prevent exposure of the pulp cavity inside of the tooth. It is important not to cut through the pulp cavity and the nerves of the tooth as this is painful for the boar.

Work quietly and quickly to minimise the stress on the boar. Make sure you are in a safe position outside of the crush or on the other side of the fence when the boar is released to avoid injury after trimming.

Figure 3: Shattered boar tusk after poor trimming technique. The pulp cavity of this boar's tusk has also been exposed.

Source: Trish Holyoake

Calculating the true cost of mixing feed

Sara Willis

Feed costs are the single biggest operating cost in any pig enterprise, however management decisions relating to feed performance are in many instances not made on the basis of accurate performance data.

Price, familiarity and myth drive most feed purchasing decisions because of a lack of industry standards for feed milling and purchasing.

Pig units consist of one or more of the following profit centres:

- Weaner herd
- Grower/finisher herd
- Breeding herd
- Milling and mixing plant

Whilst no two farms are the same, the feed milling or mixing plant is a core factor determining the producer's profitability whether the feed is mixed on farm or purchased from a commercial entity.

All feed production or buying decisions should focus on providing nutrition to the herd at optimum cost per kg live weight gain.

Assessing feed supply in this way takes account of not only the price and quality of the raw materials but management and operational factors affecting the performance of the animal.

The concept is not new, however few producers have the ability or means to include this measure in their calculations of business efficiency.

Mythbusters

Examining feed supply as a profit centre can be challenging. It is often quoted that milling costs are typically less than $25 per tonne.

The APL "Measure to Manage" project conducted in 2008 by Sara Willis, John Riley and Dr Brenton Hosking took a series of case studies using home-mill data from herds from 100 to 1200 sows.

The true costs of producing pig feeds on-farm are unlikely to ever be less than $35 per tonne and more likely to be at least $50/tonne due to increasing costs of electricity, fuel and HACCP/market compliance and the relatively low tonnages over which to spread overhead costs.

Do you know the true cost of mixing feed?

When assessing your mixing costs, do you:

- Consider the time taken buying, finding and negotiating raw material purchases?
- Allow for milling losses (dust, moisture) and wastage?
- Account for interest costs on having to pay for raw materials in advance?
- Include the labour cost for mixing and feed delivery?

Feed supplies whether from home milled feeds or from external purchases can be and should be bench marked as part of understanding and managing unit performance.

If you are interested in obtaining a copy of the mill cost calculator to calculate the true cost of your milling and mixing plant please contact Sara Willis on 07 46881214 or sara.willis@daf.qld.gov.au.

Reduce Feed Wastage – Economic, Environmental and Rodent Sense

Sara Willis

Feed wastage contributes significantly to high costs of production and environmental pollution. Feed wastage also provides a readily available food source for rodents.

Rats and mice consume large quantities of pig feed but their faeces, urine and hair can contaminate up to 10 times the amount of feed they eat.

One rat can leave behind 25,000 droppings per year. An adult rat eats about 10% of their body weight or 15g a day. With 1000 rats on a farm, this is nearly 5.5 tonnes per year or equivalent to the feed eaten by a sow and her progeny.

To minimise feed wastage in the feed mill:

- Remove waste material from the feed mixing plant and dispose of in an acceptable manner
- Clean the area surrounding the base of silos. Silos should be mounted on concrete pads to allow the area surrounding the base to be adequately cleaned
- Inspect silos/feed bins regularly to ensure they are in a suitable condition and can't be accessed by rodents
- Ensure bagged ingredients are stored off the ground on pallets and away from walls
- Put lids on containers of micro ingredients at the end of each day's mixing
- Reseal partially used bags
- Store ripped or torn bags in a separate area for first use

To minimise feed wastage in sheds:

- Ensure feeders are shutoff when pigs are moved/sold so there are no empty pens with full feeders
- Don't overfill feeders in hospital pens - sick pigs have a low feed intake
- Don't overfill feed barrows
- Ensure feeders don't over-run
- Repair holes in feeders promptly
- Ensure feeders are adjusted correctly
- Put lids on feeders if available
- Check rodents don't have access to overhead feed-lines
- Clean up all feed spills immediately

Whilst it is impossible to totally eliminate feed wastage, it is certainly an area for improvement for all farms. It is important that rodents are kept out of feed to minimise feed contamination, the risk of disease spread and rodenticide contamination.

Rodents can destroy building insulation, hydraulic hoses on electronic sow feeders and gnaw on electrical wiring, which can be a fire hazard.

Sound rodent control practices will reduce the risk of disease, improve environmental conditions for the pigs and improve profitability.

How are you managing rodents?

Melissa Cummins, (Director Plant Biosecurity and Product Integrity QDAF)

Rodent management is an ongoing challenge in many piggeries–rodents can spread disease, as well as consume and contaminate feed. To get the best result for your business, consider these key tips for your rodent management practices:

- Aim to exclude rodents from pig sheds through physical means, as well as remove all potential harbours for rodent activity around sheds.
- Use baits, if required, around the perimeter of sheds rather than in sheds, to limit the potential contamination of animal feed or animal exposure to rat faeces.
- Keep sheds clean – free of rodent carcasses, droppings and other wastes is essential.
- Avoid where possible the use of chemicals that can be easily moved by animals and people, such as powders and gels.

The Queensland Department of Agriculture and Fisheries is preparing to roll out an industry telephone survey on rodent management practices, with a particular focus on rodenticide use.

Producers in states other than Queensland can contact their state department of agriculture for further advice.

The Do's and Don'ts of Home-Killed Meat

Jade Weatherley

A "home-kill" is the slaughtering and butchering of an animal 'at home' for personal use and consumption.

Home-kills are popular among smallholder and hobby farmers but may also be undertaken on larger commercial farms wanting a pig for personal use.

It is important that anyone doing home-kills is aware of the legalisation which governs what can and cannot be done with home-killed meat.

Meat and small goods (e.g. sausages, bacon) made from an animal slaughtered and processed on farm **cannot be sold, traded or given away**.

Products derived from the animal are for personal consumption on the farm only and therefore **cannot be removed from the property**. The meat can be fed to family and friends visiting the farm but it cannot be taken away with them off the property.

The meat cannot be used to feed 'paying guests' at the property; for example, a meal as part of accommodation or tourist activities.

In Victoria, the home-killing of animals is outlined in the *Meat Industry Act 1993*. A home-kill can **only occur on 'a farm'**.

In Victoria 'a farm' is classified as;

- 2 hectares or greater and,
- Outside the radius of 32km from the General Post Office at the corner of Elizabeth and Bourke Street, Melbourne and,
- Used for agricultural or pastoral purposes.

For Victorians further information can be found through PrimeSafe (www.primesafe.vic.gov.au). For all other states please contact the meat authority relevant to your state.

Consuming meat from a home-kill is done so at your own risk as there is no food-safety post-mortem inspection undertaken on the carcass.

The slaughter of the animal on farm can be undertaken by yourself or a mobile butcher.

The person slaughtering the animal must be "suitably qualified" and have the necessary skills and equipment to slaughter the pig.

Euthanasia of pigs must be undertaken in accordance with animal welfare standards. These are outlined in the pig welfare legislation relevant to your state which will be based on the *Australian Model Code of Practice for the Welfare of Animals – Pigs (3rd edition)*.

Alternatively, you can call upon the services of a mobile butcher who is skilled at humane killing, slaughtering and butchering of pigs.

Rib Fractures – It's not all it's cracked up to be!

Jade Weatherley

The detection of rib fractures in pig carcasses during abattoir inspection results in trimming and occasional down-grading.

Trimming and down-grading of carcasses will mean you will get less money for your pigs. Trimming of carcasses also causes delays in the processing chain at abattoir which is associated with significant costs to them.

The most common presentation seen at abattoir is healed rib fractures. This is when the fracture has

occurred weeks to months ago and there has been enough time for the body to 'repair' the fracture. The laying down of new bone to repair the fracture causes a spherical bony lesion to form on the rib (Photos 1 and 2).

Figure 4: Spherical bony lesions on these ribs indicate healed rib fractures.

Source: Jade Weatherley

Rib fractures occur primarily due to trauma (sow overlays, entrapment in fences).

Rib fractures can also occur due to dietary deficiencies/imbalances or metabolic disease which result in weak bones that can break easily.

Dietary causes include vitamin D deficiency and calcium/ phosphorus imbalances. Metabolic causes include rickets, osteomalacia and osteoporosis.

Figure 5: Cross-section of a healed rib fracture.

Source: Jade Weatherley

Some tips in minimising rib fractures occurring in your pigs;

- Ensure you are feeding a nutritionally balanced diet. The best way of achieving this is through the use of commercially prepared feedstuffs. For growing pigs between 25-50kg the estimated requirements are 0.66% calcium and 0.56% total phosphorus. The percentages are based on an estimated feed intake (plus wastage) of 1.6 kg per day. These percentages are higher for weaners and lower for finishers. The ratio of calcium: phosphorus is similar for all ages of pigs and should be between 1.25:1 and 1:1 for maximum utilization of both minerals.

  As many pigs are housed indoors there is a limit on the amount of vitamin D they can receive through sunlight and therefore your diet needs to contain adequate vitamin D. For growing pigs this should be a minimum of 200 IU/kg and for lactating and gestating sows this is 800 IU/kg. (Reference: *National Research Council – Nutrient Requirements of Swine (updated 2012)*).

- Take care when supplementing the diet with by-products such as bakery waste or vegetables as high percentages of these could cause imbalances in the overall diet.

- Take care and be patient when moving pigs out of pens, along narrow laneways or through a race. Ensure gates are opened wide and if necessary consider being able secure the gate open so that if pigs do suddenly move backwards they do not drag the gate close and potentially get entrapped and squeezed.

- Ensure you have a good creep area which has enough space and is adequately heated. This will help minimise overlays, as the piglets will not be cuddling up to the sow for warmth.

Fractured ribs are also current topic in the sheep industry with a recent article featured in the Stock & Land in May this year. (http://www.stockjournal.com.au/news/agriculture/sheep/meat/mla-aims-to-crack-rib-puzzle/2733505.aspx?storypage=0)

If you are concerned with rib fractures in your herd please speak to your veterinarian who can assist you with diagnosing and correcting the underlying cause.

Around the Web

Jayce Morgan

Euthanasia and the Stockperson

There was an interesting article on the PigSite from Michigan State University Extension about Euthanasia and the Stockperson. Below is a brief summary of the article which is well worth reading.

"Studies have shown that the successful stockpersons are conscientious, caring, eager to learn, humble, careful observers, empathetic, and have a positive attitude. All of these attributes correlate to both improved productivity and animal welfare."

The article then goes on to discuss the difficulties faced by the stockperson when faced with performing euthanasia. Stockpersons tasked with this role can have a difficult time when faced with the decision about when to euthanize a sick animal.

It is said that there are 6 human barriers to the performance of euthanasia:

- Belief in the faint hope of the animal recovering
- Ignorance
- Lack of training and equipment
- Lack of empowerment
- Repugnance of killing
- Moral food conviction – abhorrence of wasting an animal for use as food

Stockpersons can suffer with internal conflicting beliefs – known as cognitive dissonance – and the result can be some strange behaviour, which emerges as coping mechanisms.

Individuals may avoid situations and information which increase these feelings of unease.

"In euthanasia, one of the outcomes of this internal conflict is that euthanasia; especially methods like Manual Blunt Force Trauma (MBFT) are performed incorrectly. With MBFT, frequently not enough force is used, or employees did not stay to monitor the pig afterward."

"Because other employees are experiencing the same conflict and are dealing with it in similar ways, these incorrect practices can become generally accepted in a farm's culture.

This causes deterioration in euthanasia practices that can go unnoticed because the change may not be easily recognized within the group of employees all sharing in the dissonance. Eventually, these practices can deteriorate to a point that we might be surprised or shocked to see "normal" industry practices on undercover expose."

It is important to create a culture where stockpersons can discuss their feelings and attitudes to euthanasia. No person should be forced to perform this role.

Appropriate training can provide the stockperson with suitable on-farm protocols, decision trees and rules-of-thumb for euthanasia decisions.

The American Veterinary Medical Association (AVMA) recommends timely humane euthanasia for pigs when "death is a welcome event and continued existence is not an attractive option for the animal."

The following are "rule of thumb" characteristics and may help stockpersons recognise when euthanasia should be considered:

- Inadequate or minimal improvement after two days of intensive care.
- Pigs may exhibit extreme weakness or inability to eat or drink.
- Severely injured or non-ambulatory pigs with the inability to recover.
- Suffering from any infection or disease which fails to respond to treatment.
- A 20 to 25 per cent loss in total body weight resulting in a body condition score of 1.

A Perspective of Stockpersons and the Humane Euthanasia of Swine; The Pig Site

How to use the Vet properly

An article in Pig Progress back in February by John Gadd discussed how to use a vet for maximum positive return.

I refer to this article because it is a requirement of Australia's Welfare Code that pig producers have a herd health plan. Such a plan is best worked out in consultation with a vet.

The other thing to remember is that your vet needs to be familiar with your operation before they can prescribe S4 drugs.

Many people just view the cost side of a vet visit but not the benefits that ensue from healthier pigs. Vets can advise on prevention as well as cure.

Pigs can suffer subclinical disease – no obvious symptoms but there are impacts on performance. According to John Gadd the impact on FCR can be equivalent to 20 kg less meat sold per ton of feed for pigs in the 30-105kg range. While in the sow herd it can be less pigs born alive and reduction in the sow's lifetime productivity and the business profitability.

The difference in cost between veterinary visits for 'disease storms' as opposed to veterinary visits for disease monitoring and prevention can be considerable depending on frequency of visit.

However there are many added benefits such as:

- Training staff in health care for pigs
- Herd health plan and farm protocol development
- Early diagnosis of problems
- A fresh set of eyes to see potential problems or failures in normal routines
- Improvements in production and profitability

In John's example the benefits of regular veterinary input into the farming operation far outweighed the costs of extra visits.

Avoiding Disease in Pigs – Pig Progress

Farewell to Trish Holyoake

This is the last PigBytes newsletter for Trish as she leaves the Victorian DEDJTR to concentrate on private veterinary consultancy to the pig industry. Trish may be contacted via email: trishpigvet@icloud.com or mobile 0427 302 754

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