

A newsletter for pork producers



PigBytes

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FMD – reflections from Nepal

Samantha Allan (Senior Veterinary Officer NSW DPI)

Foot and mouth disease (FMD) is caused by a virus. FMD infects a wide range of wild and farmed animals overseas. Cloven hooved species such as pigs, cattle, sheep, goats and deer are the major concerns if FMD ever comes to Australia.

The virus can survive for months even in cured meats and only a tiny dose of virus is required to infect an animal which eats the meat product. This is why the feeding of meat and meat products (swill) is illegal in Australia.

The Australian government is currently funding a program for Australian vets to visit Nepal (where FMD is common in livestock) to participate in a training course to recognise FMD infected animals.

The piggery we visited was communally operated by a group of families, with 45 persons actually working with the pigs. It was sited on approximately 1 hectare of river flats and housed 1400 pigs in open air pens. It had been in operation approximately 6 years and had a slaughter facility on-site which had been operating for 12 months. Although vaccination for FMD is

encouraged by the veterinary authorities, no vaccinations were used on this farm.

Figure 1: Australian vets observe biosecurity protocols in Nepal.



The feed was ‘swill’ collected from a nearby army barracks, and city hotels. It was fed as collected, with no cooking or treatment. Mustard seed was sometimes added as a supplement.

Figure 2: One of the pigs sheds. Swill deliveries are in the small yellow pots.



There was no biosecurity in place at the piggery, with uncontrolled movements of people and things throughout the complex. The slaughterhouse killed both pigs grown on the farm and others sourced

from outside. It was clear that there were many ways for diseases to be introduced and spread.

We observed a variety of disease and parasite problems on this farm ranging from mange and internal parasites, to the big ticket items for Australian vets – classical swine fever and foot and mouth disease! What was surprising was that some farmer's rows had relatively well grown, healthy looking pigs while the row next door might contain thin, mangy pigs with foot and mouth disease as well.

I think it would be fair to say that all Australians working within the livestock industries have a healthy fear of exotic disease, with FMD being the king of them all. I think a lot of us also expect that if an exotic disease did enter Australia, it would be obvious, easy to spot and reported straight away. Our experience in Nepal suggests that might not be true.

Figure 3: FMD foot lesions early in the infection are not that obvious.



In the very early stages of an FMD outbreak, there may only be small numbers of affected animals. Depending on the strain (or variety) of FMD virus involved the symptoms could be very mild.

Pigs are important in the FMD story because they are readily infected and they produce massive amounts of virus in their breath and body fluids. They are called virus amplifiers. Plumes of virus rising from an infected piggery could be a source of airborne infection for a very large area.

Depending on the strain of FMD virus involved, pigs may develop only very mild symptoms, or there may be up to 30% mortality in piglets and significant disease in older pigs.

The classical signs of FMD in pigs are blisters which turn into ulcers on the snout, tongue and coronary band (where the hoof joins the leg). The lesions on the feet are usually the most

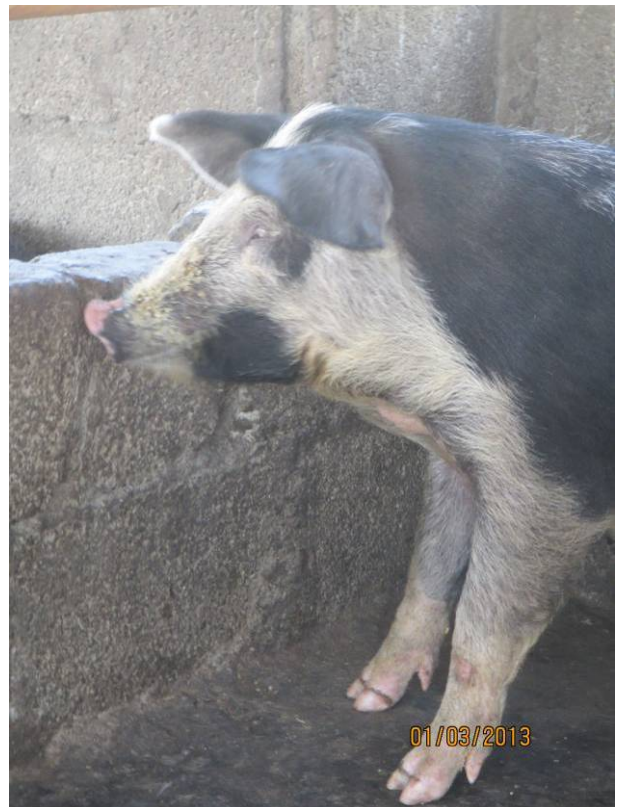
spectacular and painful, and can result in extreme lameness and ultimately the claws being shed.

Figure 4: Ulcerated snout lesion in a resident pig.



In cases where the symptoms are severe it is unlikely that the disease would be missed as the effects on production and welfare would be obvious. However in a situation with mild disease or where pigs are not closely observed nor their performance measured there is a risk of disease being present but not being noticed or investigated.

Figure 5: Well developed coronary band FMD lesions on this pig's feet are very painful.



An example is the UK piggery at the centre of the first of the recent FMD outbreaks. Husbandry conditions on this farm were poor and lame pigs were routinely sent to the slaughterhouse. This became considered as normal – and NOBODY checked. What was blamed on rough flooring and dirty housing was foot and mouth disease – and it had already got away.

Probably the most important lesson I took from my experience in Nepal was not to presume that a sick animal in Australia could not have an exotic disease. Any lame or sick animal should be properly examined. That might mean washing the dirt off its feet so you can have a really close look, or getting someone to help you restrain it so you can have a proper look in its mouth. It's a little extra trouble but I'd rather be safe than sorry.

Report animal disease and deaths to the national Emergency Animal Disease Watch Hotline on 1800 675 888.

Seen any abortions lately?

Trish Holyoake

Sows will occasionally abort their litters. These may not be noticed when sows are housed in groups on slatted floors and they may appear as fail-to-farrow sows.

When (or if) abortion numbers increase, it is worthwhile seeking veterinary advice to rule out infectious causes of reproductive failure. Some farms in Australia experience higher abortion rates in March and April than in other times of the year.

In 1982, SE Sanford penned a letter to the editor of the Canadian Veterinary Journal entitled "Fall Abortions in Sows". The letter described a phenomenon in which sows of all ages and in perfect health, lost their pregnancies, usually late in gestation.

He was unable to make a specific diagnosis on the cause of the abortions and predicted that affected sows had inadequate energy intake to compensate for low environmental temperatures.

This phenomenon was later referred to as "autumn abortion syndrome" (AAS) and was considered to be part of the "seasonal infertility" syndrome of pigs. This late (post 30-days gestation) pregnancy loss results in a decline in farrowing rate of around 3% to 5% depending on environmental factors and housing conditions.

The cause(s) of AAS have not been identified. Sows naturally have a lower concentration of the pregnancy hormone progesterone in autumn than at other times of the year. AAS has also been

found to occur most often when there is the maximum rate of decline in day length – in Australia this is in March/April.

Glen Almond, a Canadian researcher, identified high levels of AAS in sows housed in cold, drafty gestation barns, wet from water spillage. Supplementary heating using an additional propane heater in the gestation barn to maintain an ambient temperature of 18C reduced abortions to less than 0.5%. While not a controlled study, these findings suggest that temperature and energy balance may play a role in AAS.

Pregnancy loss during seasonal infertility is an important factor influencing pig farm profitability. It would seem from observations of field outbreaks of AAS that adverse influences including inadequate nutrition, low environmental temperature, poor lighting, dominance "factors" from neighbouring sows and reduced social contact with boars may act alone or in combination to cause a pregnancy to fail in the autumn when progesterone levels are low. More research needs to be undertaken to determine the environmental and social risk factors that contribute to AAS and to develop strategies to prevent it occurring.

Educating "tree changers" on the joys of pig ownership

Trish Holyoake

Large crowds turned out for the Weekly Times Rural Lifestyle Expo, held in Ballarat on 6th April. This was the second year that the Expo had been held, with crowds in excess of 4000 people. Most attendees were city folk looking for a rural lifestyle change ("tree-changers").

Figure 6: Dr Trish Holyoake talking to potential new pig owners.



Trish Holyoake from the DPI presented three talks on topics ranging from “starting out pig-keeping” to “keeping pigs healthy”. Katy Brown was wonderful in supplying some grower pigs of various breeds to showcase, in addition to a Berkshire sow and litter.

The exhibit drew large crowds, with the general aim to educate persons wanting to own pigs on the complexities of pig ownership to reduce their mistakes down the track.

QA in the feed shed – protect your investment

Jayne Morgan

Whether or not you are a member of the pork industry quality assurance (QA) program APIQTM; the observation of QA practices in the feed shed can be a business saver.

In recent months 2 pork producers experienced potential business catastrophes related to pig feed. One producer was placed in quarantine after a residue trace back and the other producer lost a large number of pigs due to contaminated feed.

Fortunately for the first producer the problem was traced to feed ingredients and the quarantine period was of short duration. Unfortunately for the second producer the situation progressed to a legal situation even though the producer was not at fault.

The following list explains what is meant by QA in the feed shed.

- ☐ If you purchase feed buy your feed from FeedSafe® accredited feed mills if possible. Check the website for accredited mills near you www.sfmca.com.au
- ☐ Keep silos and other storage areas well maintained. Check for leaks and condensation regularly and clean the areas well. Feed may arrive in good order but poor storage systems can result in feed spoilage.
- ☐ Keep delivery dockets and batch numbers of all purchased feed and ingredients. These can be a business saver. Develop a records management system so this information can be retrieved easily if problems occur.
- ☐ Request a vendor declaration for all purchased feed mixes and/or feed mix ingredients if you mix your own feed.
- ☐ Keep samples of all feed mixes and ingredients for at least 6 months or until the pigs eating the feed are sold. Store in a vermin free area and label well. Writing on plastic bags can wear off over time so put a label inside the bag as well.
- ☐ Be generous with your sample size because sometimes samples need to be tested more than once.
- ☐ If you experience dead or sick pigs and you suspect the feed is the cause get a vet to examine the pigs and sample the feed. You then have expert advice on the cause of the pig's deaths or illness.
- ☐ Do not feed OFF feed to pigs. Look for odour, heat, moisture, moulds, excessive dust, odd colour or unusual ingredients. Mycotoxin binders/deactivators can help keep pigs safe from unexpected issues caused by mycotoxins in good quality feeds; but they cannot make poor quality feed safe for pigs.
- ☐ Do not feed prohibited substances (swill) to pigs.
- ☐ If your pigs are run outdoors make sure you know what is in the paddock. Some plants are poisonous to pigs and this includes many 'escaped' garden plants.
- ☐ Make sure pigs don't have access to areas that have contaminated soil such as old dip sites or old building footings which may have chemical residues from white ant treatments. Pigs consuming soil from these areas may have chemical residues and you would be placed in quarantine until the issue was resolved.
- ☐ Clean silos or other feed storage areas regularly. Caked feed residue can be a wicked source of mycotoxin contamination and you don't want to be feeding this to your pigs.

Notes:

Mycotoxins are toxins produced by moulds on feed. There are several types. Some can cause pigs to vomit, some can cause reproductive problems and some can cause deaths. It is also believed that in combination they can depress the pig's immune system making them more susceptible to disease. Mycotoxin binders/deactivators are added to pig feed to minimise the impact of mycotoxins.

Feed Samples Large piggeries may find themselves overwhelmed with the number of samples so you need a good system. Many ingredients are purchased in bulk and not used in large quantities in a feed mix.

If you have a good records system you could try to only keep samples from each new batch number of an ingredient rather than keeping a sample of that ingredient for each mix. Keep a sample of the final mix with a record of the batch number of each of the ingredients used.

Create an “approved suppliers” list for all ingredient purchases. These are suppliers for whom quality

control is important and you can be assured of good service and reliable product quality.

It would be good insurance to always keep samples of meat meal, fish meal and feather meal etc for each feed mix as these can have variable inputs and have been the source of residues in some cases in the past.

A review of transport practices and mortalities in Australia

Sara Willis

A survey was conducted during 2011/12 by Sara Willis, DAFF, John Riley, JCR Associates International and Graeme Pope, Graeme Pope Consulting to examine the impact of transportation time, time of year, stocking density, genetic source, time off feed and transport arrangements on pig deaths between loading on farm and arrival at the abattoir destination.

The survey represented 197,451 market weight pigs sold in 2011/12 by 19 Australian producers representing 14,260 sows. The pigs were transported by six independent transport companies and nine owner operators to three abattoirs located in QLD, NSW and SA. Herd size of participating production units ranged from 220 sows to 4000 sows.

Across the survey there were 71 pig deaths out of 197,451 pigs sent to abattoirs (0.036%). This level of mortality was low compared with previous investigations in Australia (0.24%) and other international studies. Higher death rates have been reported in the Netherlands, Western Germany, Denmark, Belgium and USA, occasionally exceeding 1.0%.

In this survey, deaths were reported by load. The overall percentage of loads with deaths was 5.4% (57 out of 1,050 loads).

The average time in transit was 4.2 hours with only 23% of loads in transit for less than 2 hours. The percentage of loads with deaths in transit increased from 2.04% for short trips (less than 2hrs) to 5.93% for medium trips and 6.74% for long trips (more than 4hrs).

The percentage of loads with deaths was significantly higher in summer (7.3%) compared with winter (3.5%).

Forty-two percent of loads were transported at a low stocking density, ($>0.50\text{m}^2/\text{pig}$) while 56% at a medium stocking density ($0.35 - 0.50\text{m}^2/\text{pig}$).

At the low stocking density, the number of loads with deaths in transit was 2.3% compared to 8.0%

of loads, where a medium stocking density was recorded.

The average time off feed was 10.16 hours. Overall there were 8.0% of the loads with deaths when pigs were off feed for short periods (<6.5 hrs), 7.0% of the loads with deaths for a medium time off feed (6.5 – 13 hrs) and 1.8% deaths for the loads with long times off feed (>13.5 hours).

In this survey of seven genetic sources, genetic source (GS) 1 had a significantly higher number of loads with deaths (20.4%) compared with other genetic sources. GS2 had the next highest percentage of loads with deaths (7.5%), then GS3 (1.8%), GS4 (1.6%), GS5 (1.4%) and other genetics not specified (0.8%).

Deaths in transit recorded in this survey were lower than in previous Australian and international surveys.

Contributing factors to the lower death rate include producers participating in the Australian Pork Industry Quality Assurance Program (APIQ[®]) which requires staff to be trained in animal welfare as well as moving and handling pigs.

The use of species specific contractor's whose employees are trained in the movement of pigs may also be a contributing factor.

In addition, the greater use of the APL 'Is It Fit to Load?' Guide and the fact that all co-operating abattoirs were export accredited facilities could have contributed to the lower death rate.

In summary, producers should be aware that:

1. Losses in summer are higher than in winter
2. Losses decrease as space allowance per pig increases.
3. Deaths in transit increase as time in transit increases.
4. Deaths in transit decrease as time off feed increases

Increasing Producer Awareness of Research Outcomes

Trish Holyoake

Innovation is a major contributor to improving farm productivity and sustainability and yet many new technologies are not implemented. The Pig Health and Research Unit undertook a survey, using questionnaires and focus groups, of producers and veterinarians to better understand the drivers and barriers to the adoption of innovations or new technologies on pig farms. The research was funded by Australian Pork Limited (APL).

The results of the study identified a number of factors limiting innovation awareness and adoption by pig producers in Victoria. We found there was little knowledge of the research being undertaken on new technologies suggesting that current methods of communication could be improved.

This was further supported by our finding that producers with small herd sizes had very little contact with or knowledge of APL. We also found that producers were wary about the perceived benefits of many new technologies.

Our results suggested that the translation of research into practice was dependent on multiple factors which included receiving information of new technologies, identifying benefits and being able to clearly understand how to apply the new technology.

To improve the rate of adoption of new technologies, consideration of their on-farm implementation needs be done in the early stages of the research to ensure they 'tick the boxes' for producers and veterinarians.

Innovations must be shown to confer a relative advantage over existing technologies at a reasonable cost, be easy to understand and implement and have low levels of risk if they are to be adopted.

We would like to thank all those producers and veterinarians who contributed to this study. The winners of the gift vouchers were:

Derek & Jodie Hollis, Donald

W & V Bennett, Birchip

Gunpork Joint Venture, Gunbower

Trevor & Kerrie Linklater, Speed

N & D Tinning, Tongala

Yvette Miller, Welshpool WA

Barriers to Adoption

Jayce Morgan

A similar project was conducted in NSW focussing on pig producers with less than 1000 sows and also funded by APL. I chose to focus on this group because you don't often see farmers from this group at industry events.

Most of the farmers participating in the focus group meetings were mixed business operations, but all claimed that pork production was the major portion of their income.

Gaps in communication were a major issue. Sometimes the problem was technical such as

computer line speeds and problems with wireless internet and mobile phone coverage. Sometimes the problem was simply the complexities of day to day life and the many demands on the farmer's time. Farmers cannot make assessments on new technology if they are not receiving any information.

Other points raised were:

- Information needs to be less complex but with the facts intact.
- Time pressures mean farmers are interested in short pertinent pieces of information.
- It would be good to see the results of trials on real farms from a farmer's point of view.
- There is a tendency to rely on the nutrition consultant or vet to relay the latest information. This adds a filter to the relay of information which can be good and bad.

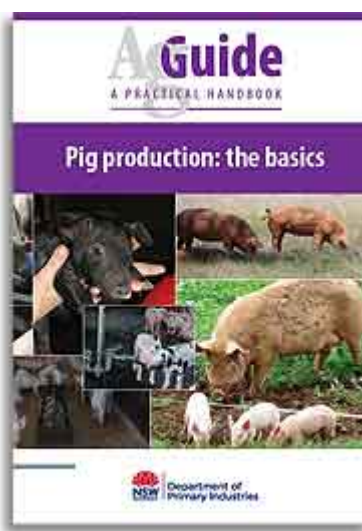
Farms in this group also tend to be the more visible part of the industry. Several farmers in this group regularly hosted vet students and this experience was the student's first contact with industry. It is important that this group of pork producers is kept in touch with industry and the latest technologies.

Pig AgGuide

Jayce Morgan

"Pig production: the basics" is the latest AgGuide title available from NSW DPI.

Content is aimed at the small scale producer and those contemplating pig production for the first time. Contributing authors were Dr Trish Holyoake, Ian Kruger and Jayce Morgan.



Copies can be ordered on line at:

<http://www.dpi.nsw.gov.au/aboutus/resources/bookshop/agguide-pig-production-the-basics>

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