

# A newsletter for pork producers



## PigBytes

Issue 23 November 2014

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### Animal Welfare

Jayce Morgan

As more and more food manufacture or retail food outlets add a commitment on farm animal welfare to supplier guidelines it is clear that animal welfare debates will remain front and centre for some time.

Nestlé recently announced a pledge for improved animal welfare standards from its supply chain.

Recently the animal welfare group at Edinburgh University ran an Animal Welfare MOOC (online course) under the Coursera group of short online courses. Thirty three thousand people signed up for this course.

I was one of them and I am glad I did. It has opened my eyes to just how far the concept of animal welfare has evolved. Matching reality to perceptions remains at the core of the debate.

Animal welfare means different things to different people so settling on an appropriate definition for good welfare can be problematic with different perspectives resulting in different outcomes.

Farmers and vets were said to judge welfare in terms of animal health and their physical

environment and their physical wellbeing. But this was said to be one dimensional and there is the risk of not all aspects of animal welfare being considered – there is also the animal's naturalness and its psychological state to consider.

Animals do have the ability to experience negative sensations (pain) or emotions (boredom) and this is at the core of the animal welfare debate. It was said that animal feelings are the most important dimension in discussions about animal welfare.

It was how the individual animal experienced its surroundings that determined its welfare state – good or bad. The animals feelings/sensations and what was happening in its mind that mattered.

Different definitions of animal welfare were discussed – the Five Freedoms was described as well-known worldwide but that the first 4 freedoms had a negative connotation – freedom from something. It was also described as problematic when you considered the welfare of companion animals and wild animals.

A definition of animal welfare from Professor Donald Broome was referred to in several presentations. It was “the state of an animal in relation to its ability to cope with its environment.”

The Duty of Care framework was also touched upon. “If you are responsible for an animal, you have a duty of care for that animal, regardless of why you are responsible for the animal, the animal's purpose or how long you will care for the animal.” They need a safe happy environment they can enjoy.

The course touched on the objective measurement of animal welfare such as observational studies of behaviour, physiological and immunological studies and various hormonal changes and the health effects on the animals exposed to different surroundings.

Animals can suffer a range of welfare issues and there is a need to use an evidence-based approach and not our own perceptions or feelings. It is the animal's experience that matters.

Dairy, pigs and poultry were covered in the farm animals' week and student comments were interesting to read. Many found the videos distressing even though most animals looked and sounded to be content to me.

One participant's comment was "I never realized that there were so many people who knew so little about farming." The part that stuck with me was the presenter/researcher using the term 'mutilations' to describe husbandry practices such as tail docking or ear notching – this is a term I always associated with animal activism publicity not used as part of a research scientist vocabulary.

If the course is offered again (possibly in February 2015) I would recommend that you take part if you can – it gives insight into this evolving concept of animal welfare and does allow you to better understand the different perspectives.

Few people understand the realities of farming livestock – the day to day juggling of demands on your time – and how pigs are not always kind to each other regardless of how they are being managed.

A recent article in Pig Progress e-newsletter showed the US Fair Oaks farm's new venture in agro-tourism – its 'Pig Adventure'. Tourists are able to visit and view all aspects of a fully functioning pig farm. Maybe a good sideline for an enterprising farmer if you can entice the financiers – visit [Tourists on a Pig Farm](#).

## Antibiotic Resistance Study

*Trish Holyoake*

The Pig Specialist Centre, Bendigo is working in collaboration with the Adelaide Research & Innovation Pty Ltd (ARI) at the University of Adelaide on an antimicrobial resistance pilot project.

In the project, all *Staphylococcus* and *Escherichia coli* micro-organisms isolated from samples sent to the diagnostic lab at the Pig Specialist Centre, Bendigo were stored and forwarded to our collaborators in South Australia.

Isolates were tested by disc diffusion with several antibiotics to determine the resistance prevalence.

The results from the testing will provide the first national prevalence data on antimicrobial resistance in these particular animal pathogens with potential to be transmitted from animals (specifically pigs) to humans.

This will provide each participating laboratory with an individual report on the accuracy of their current

susceptibility testing methodology according to standard laboratory quality methods.

The pilot study will also perform minimum inhibitory concentration testing (MIC) to accurately detect antimicrobial resistance of these bacteria to commonly-used antibiotics.

A survey of resistance prevalence in animal pathogens isolated from all over Australia will provide laboratories with up-to-date data to assist veterinarians with treatment options for specific diseases.

Results from the survey have the potential to reduce antibiotic usage on farm by specifically targeting these disease-causing pathogens with the correct antibiotic.

For more information on how the Pig Specialist Centre can assist you in disease diagnosis in your herd, contact the Diagnostic Laboratory, Corner Midland Highway & Taylor Street, Epsom, Victoria, 3551. PH: 03 5430 4569.

## Are you qualified?

*Trish Holyoake*

Do you own pigs? Did you know that the Victorian Welfare Standards and Guidelines for Pigs requires that anyone caring for pigs must be "suitably qualified" or work under the direct supervision of someone who is?

There is similar legislation in other states as well (check with your relevant State government agency).

In Victoria, the easiest ways to get "qualified" are:

1. work on a commercial pig farm for 12 months and get relevant training and experience; OR
2. get training in the Pork Industry Skill Set, OR
3. be assessed as competent by a registered training organisation (RTO). DEPI in Victoria in association with GoTAFE run a 3-day Skill Set training 1-2 times each year (according to demand) to meet the needs of the welfare legislation.

The most recent course was held in Bendigo on 17-19 September, 2014.

Twelve trainees from farms with a variety of herd sizes (some were in the planning stages whilst some had around 150 sows) and genetics (improved commercial genotypes to Berkshires and Large Blacks) participated in the training.

Topics covered are listed below. These 8 units can be used as part of a Certificate III in Agriculture:

- Move and handle pigs
- Care for health and welfare of pigs
- Comply with industry animal welfare requirements
- Administer medication to livestock
- Euthanase livestock
- Implement animal health control programs
- Comply with industry quality assurance programs
- Contribute to OHS processes

The cost of the course is \$300 - \$400 per person, depending on whether you qualify for government-assisted funding. For more information or to enrol in future courses contact Mr Harry Gillis at GoTafe on PH 0428530675.

**Figure 1: Pork industry skill set trainees learn how to restrain a pig with a snare whilst giving an intramuscular injection.**



## Wanted! Scouring sucker or weaner pigs for clinical trials

Trish Holyoake

Victorian DEPI and Anantara Lifesciences are on the lookout for farms interested in trialling a new non-antibiotic preventative for scouring in piglets. Detach™ contains the active ingredient bromelain,

a natural extract from pineapple stems that is safe and residue free.

Detach™ works in two ways:

1. by preventing scour-causing organisms from attaching to the small intestine, and
2. by blocking the activity of toxins produced by bacteria.

Because of its dual-action, Detach™ is likely to be effective against a range of different causes of scour (*E. coli*, rotavirus, coccidiosis), making it a single product solution.

Detach™ is not an antibiotic, nor a vaccine, therefore use of Detach™ should not lead to selection for microbial resistance.

An earlier version of Detach was registered in Australia in 1991. In clinical trials of over 6,000 piglets on several Australian pig farms, it was shown to reduce scour and scour-related death, improved weight gains and reduced the use of antibiotics.

Detach was removed from the market after only 6 months for commercial reasons, and not because of lack of efficacy or any safety issues.

Anantara Lifesciences, a Brisbane based company, would like to register a new formulation of Detach™ in Australia.

Recent field trials in Spain have shown that the new formulation of Detach™ is effective in reducing the incidence and severity of post-weaning scour and the number of antibiotic treatments needed.

Anantara now propose to conduct field trials on Australian farms using Detach™ to re-confirm its efficacy under Australian conditions.

Please contact Dr Trish Holyoake on 0419231534 or [trish.holyoake@depi.vic.gov.au](mailto:trish.holyoake@depi.vic.gov.au) for further information.

## Take care when drenching piglets

Trish Holyoake

Two 14-day-old piglets were recently submitted to the Pig Specialist Centre for post mortem. The farm had a history of meningitis in piglets and these two were observed with illthrift and difficulty breathing.

The veterinarian suspected an infectious disease (*Streptococcus suis* or Glassers Disease) to be the cause of the clinical signs in these piglets.

At post mortem, both piglets had varying degrees of pneumonia and there was pleurisy in one pig.

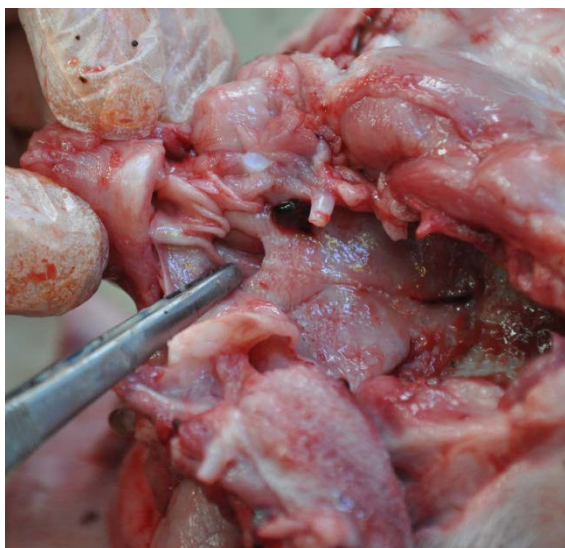


On closer inspection, both had abscesses draining from the back of the pigs' throat and extending into the chest cavity.

A perforation was present in the throat of one pig and this perforation drained into the abscess.

Following consultation with the farm's veterinarian it was determined that piglets were routinely given two oral drenches in the first 2 weeks of life to prevent diseases later.

**Figure 2: Perforation in the pharynx of the piglet.**



It is likely from the post mortem findings that damage resulting from inappropriate drenching technique led to the demise of these piglets.

It is vital that staff caring for pigs have the correct equipment and are competent to administer medication by all routes (mostly via injection or oral drench).

There are a number of drench nozzles available commercially and staff must be shown how to use these correctly.

This case highlights the importance of training staff to maintain the health and welfare of the pigs in their care.

## Will the real *Brachyspira* please stand up?

Trish Holyoake

The Pig Specialist Centre is currently collaborating with Tom La from Murdoch University in WA on a Pork CRC – funded project to more clearly identify the significance of various species of *Brachyspira* bacteria as the cause of scouring and colitis in grower pigs.

The most common causes of scouring in grower and finisher (10 – 14 weeks) pigs include:

- *Lawsonia intracellularis* ("ileitis")
- *Brachyspira hyodysenteriae* ("swine dysentery")
- *Brachyspira pilosicoli* ("intestinal spirochaetosis")
- *Salmonella hyodysenteriae*
- Worms (roundworms and whipworms)
- Porcine Circovirus Type 2 (PCV2)

Determining the cause of the scour requires laboratory testing including culture of faeces and/or gut contents, faecal flotation (worms), PCR testing and/or histopathology on tissue sections (PCV2).

Tom's CRC project seeks to classify *Brachyspira* spp following culture on special selective media, observing for degree of haemolysis (generally the more haemolytic the more pathogenic) and using polymerase chain reaction (PCR) testing.

(Haemolysis refers to breakdown of the red blood cells with cell contents released into the surrounding fluids. Scours can appear bloody and pigs can become anaemic)

So far, Tom has been able to provide our laboratory with the results from his highly specialised testing to differential pathogenic *Brachyspira* spp (*B hyodysenteriae* and *B pilosicoli*) from the non-pathogenic *Brachyspira* spp (*B innocens*, *B intermedia*).

The testing will also allow early detection of lesser-known *Brachyspira* spp that cause disease in pigs overseas (*B hampsoni* and *B suanatina*).

For more information on the project or to submit samples, contact Mr Patrick Daniel at the Pig Specialist Centre. PH: 03 5430 4570.

## NSW Export support services

Rob Harrison

NSW Trade & Investment boast a culturally diverse team of trade & investment professionals that are focussed on assisting your business succeed in export.

We support new and established NSW exporters with a broad range of free services to improve your global competitive edge.

## Market Intelligence

We can support your market selection and research projects by drawing on our extensive global networks and internal data resources.

## Networks

In addition to our overseas office network, the NSW Government has fostered strong links with a broad range of strategic partners around the world and we can facilitate targeted introductions that deliver results to your business.

## Capability development

Our team of experienced Export Advisers provide tailored advice and coaching to improve your understanding of the export process. We also deliver group training and skills development sessions such as the *Getting Started in Exports*, *NSW Export Lab* and the *NSW Export Skill Builder Toolkit*.

## Information & advice

Independent advice for every step of your export planning process (market entry models, logistics, pricing, payments, marketing, website development etc.) and assistance to implement those plans effectively.

## In market support

We can offer your business a range of tailored support services in key overseas markets, including Partner Searches, Business matching and delivering relevant export opportunities.

## Connecting your business with buyers

We host a range of business networking events and offer ongoing high profile opportunities for your business to connect with international customers, including our International Missions & Events Calendar and supported inbound buyer delegations.

## TradeStart Partnership

Our team of Export Advisers located across regional NSW deliver the TradeStart Program - a formal partnership with Austrade promoting and supporting export, international business and the government's trade agenda. A single access point for both state and federal government export support

## Contact Details

Visit [coaching with our export advisors](#) for more details.

## Antibiotic Resistance in Pig Respiratory Pathogens

*Dr Conny Turni (Queensland University)*

Antibiotic resistance is a well-recognized problem. However, until recently, the extent of the problem

of resistance in bacterial respiratory pathogens has not been fully understood in Australia.

Research funded by the Pork CRC has now established the extent of the problem. Denise Dayao from the Microbiology Research Group (MRG), which is based within the Queensland Alliance for Agriculture and Food Innovation (QAFFI) at the University of Queensland, has looked at antimicrobial resistance in *Actinobacillus pleuropneumoniae*, *Bordetella bronchiseptica*, *Haemophilus parasuis* and *Pasteurella multocida*.

As the MRG is a national reference laboratory for these bacteria, the collection used for the study was as reflective of the national pig herd as possible.

The work had a major challenge - that there was no standardized, validated methodology for *Haemophilus parasuis*. This is no longer the case as Denise has developed a validated test.

The methodology developed by Denise allows antimicrobial sensitivity of *H. parasuis* to be performed. The methodology has been provided to front line diagnostic laboratories so that the pig industry has access to the technology.

The work showed that resistance to some of the older antibiotics, such as erythromycin and tetracycline, was marked in all species, for example 89% and 75% of *A. pleuropneumoniae* isolates showing resistance to these two agents, respectively.

A worrying outcome was the resistance to the newer antimicrobial agents, such as tilmicosin, where resistance was found in 25% of the *A. pleuropneumoniae* isolates. As well, an elevated minimal inhibitory concentration for tilmicosin was found in 22% of the *H. parasuis* isolates showed.

There were also isolates observed with multiple drug resistance – resistance to three or more different types of antibiotics. However, the level of multiple resistance was low e.g. 9% of *A. pleuropneumoniae* isolates showed multiple resistance.

More work is needed to develop interpretation criteria for *H. parasuis*. While there is now a validated test, there is no universal agreement on what constitutes “sensitive” or “resistant” for *H. parasuis*.

Dr Conny Turni from the MRG is building a collaborative proposal with colleagues in Europe that will seek to establish a universally agreed set of interpretation criteria. In the meantime, diagnostic laboratories can now test *H. parasuis* and provide results that veterinarians can use as

guidance for control/treatment of Glässer's disease outbreaks.

In summary, this Pork CRC funded work has established the baseline of resistance present in key respiratory pathogens, with clear evidence that antibiotics need to be used with caution and care to ensure on-going efficacy.

While further work is required (specifically how to interpret the results for *H. parasuis*), the work has provided key information and diagnostic tests that will greatly improve the sustainability of respiratory disease prevention and control programs in Australian pigs.

Dr Conny Turni, Queensland Alliance for Agriculture and Food Innovation, The University of Queensland

E-mail: [c.turni1@uq.edu.au](mailto:c.turni1@uq.edu.au)

## Some plants are poisonous to pigs

Jayne Morgan

Pork producers farming pigs outdoors should be aware that some plants and plant products are poisonous to pigs.

The recent PigSite e-newsletter contained an article about [pigs poisoned by parsnips](#). The description of the affected pigs indicated a painful demise for the pigs and a very expensive mistake for the owner. Some sows were put down and it is believed the rest aborted.

Pigs do not always know if the things they eat are good or bad for them. It is our responsibility to ensure that the feed our pigs eat is wholesome and nourishing for the pig.

If you are sourcing by-product or vegetable waste to feed to your pigs ensure it is an allowable and appropriate feedstuff. Remember to check your paddocks for poisonous weeds, ensure the feed and bedding you buy has no mycotoxin-contamination and know what your pigs are eating.

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## NSW DPI Pig Industry Group

Jayne Morgan  
Development Officer Pigs.....02 6763 1257

Dr Amanda Lee  
Senior Veterinary Officer (Pigs and Poultry)  
.....02 4640 6308

Tim Burfitt  
Manager Dairy & Intensive Livestock Industries  
.....02 6391 3729

## Victorian DPI Pig Industry Group

Dr Trish Holyoake  
Senior Veterinary Officer - Pigs .....03 54304412

Patrick Daniel  
Manager Pig Health Monitoring Service  
(PHMS) .....03 54304570

## Queensland DAFF

Sara Willis  
Senior Extension Officer.....07 4688 1214

*PigBytes* is a newsletter from the pig industry team at NSW DPI, Victorian DEPI and Queensland DAFF.

Editor: Jayne Morgan  
[jayne.morgan@dpi.nsw.gov.au](mailto:jayne.morgan@dpi.nsw.gov.au)

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