The Western Canadian Association of Swine Practitioners (WCASP) held its annual meeting in Saskatoon in September. The meeting provided an excellent overview of current issues in the veterinary medicine field for our industry; this is not just a scientific meeting. Issues facing swine veterinarians and their clients in Western Canada such as welfare, economics, legislation, practice management and people management issues also appear on the agenda. Approximately 40 swine veterinarians attended from across western Canada and Ontario. Here are some highlights:

The Changing Approaches to Disease
Dr. Steve Henry, a well known practitioner from Abilene, Kansas, presented “PRRS eradication – thoughts and facts.” Recent advances in knowledge and diagnostic testing have now given veterinarians the ability to eliminate PRRS from a herd, rather than just control it. This is major breakthrough in swine health, given the current cost and difficulty of managing PRRS. Dr. Henry outlined how a planned program of testing, biosecurity, pig flow, replacement animals, sentinel animals and culling can successfully eliminate PRRS from a herd. Elimination requires significant planning, coordination, discipline and investment in testing, but the benefits should outweigh the costs.

Dr. Keith West, from Prairie Diagnostic Services (PDS) in Saskatoon, reviewed the history of Porcine Circovirus (PCV) and current thinking on the complex diseases associated with PCV. Post Weaning Multi Systemic Wasting Disease (PMWS) was first recognized in Canada in 1996, but it is now seen in most pig producing countries around the world. Other diseases such as Proliferative Necrotizing Pneumonia (PNP), reproductive disorders and post weaning PRRS have also been associated with PCV. Only some pigs seem to be affected by the virus, so a pig’s individual immune response may play a role in disease from PCV. Perhaps today’s multi-site management practices are affecting the pig’s immune status and the development of these diseases.

Changing Swine Practice
Dr. Steve Henry outlined how his practice is changing in “The Post-Antibiotic Era.” As antimicrobial use in food animal production is less acceptable to consumer, veterinarians must increasingly use other tools to control disease. Tools currently available include disease exclusion and elimination, biosecurity, immune stimulation, antibody containing feedstuffs, genetic resistance to disease and management of animal flow. New tools being developed include new diagnostic systems and environmental management systems. As antimicrobials are used less and less, the focus of food animal practice will change dramatically, and so must veterinarians.

Changing the Swine Research Focus
The Prairie Swine Centre’s (PSC) John Patience described their new research unit at Elstow and its capabilities for doing new types of projects on production efficiency, environment and animal welfare. Dr. Stephane Lemay, also from PSC, presented research data on the lack of effect of reduced nocturnal temperature on performance of finishing pigs. Dr. Matt Schoonderwoerd from Fletcher’s shared health data collected from slaughter checks and how it can be used to improve producers performance and herd health. Dr. Sylvain Queissy, Health Canada, Quebec, and Dr. Andrijana Rajic, Alberta Agriculture both presented current research on the prevalence and control of Salmonella on farm. Research is increasingly focusing on controlling food-borne diseases at the farm, before slaughter.

Changing Attitudes to Pig Welfare
Nancy Simmons, an Alberta SPCA constable, explained some of the laws surrounding animal care and transportation. She also outlined some of the cases she has recently been involved in. Keeping ill or injured animals too long before making the decision to euthanize or slaughter is one of the common problems. Dr. Terry Whiting, Manitoba Agriculture, described some of the shortcomings in the current livestock transport regulations and his experiences with the problems. There is a need for increased attention to humane transport of swine in today’s welfare conscious society. Dr. Claude Mason of the Puratone Corporation in Manitoba compared methods of swine euthanasia and the difficulties involved in training staff to use them properly. The captive bolt is an excellent method for adult swine, but staff training is necessary for it to be effective.

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Infecting clean pigs with members of the same stomachs of pigs. Based on DNA studies they were found to In 1990 similar spiral-shaped bacteria were found in the great changed the way ulcers are now treated.

were considered to be the common cause of gastric ulceration although many farms did not have a significant bleach-out rates due to bleach-outs in the groups at 3.4 per cent. In one study of 68 close-out groups, running out of feed increased the mortality in the following week by 29 per cent.

The humidity level in the air was positively correlated with mortality rates and may explain the seasonality of the problem.

The advent of modern grain processing techniques has led to the emergence of ulcers as a major health concern in swine operations. The role of feed particle size is important in feed nutrient utilization, but also has been shown to be a major contributing factor in the prevalence of stomach keratinization (fibrous tissue formation) and gastro-esophageal ulcers in all ages of pigs.

Research at Kansas State University has shown that for each 100 micron decrease in average particle size of corn in swine diets, there is approximately a 1.3 per cent increase in efficiency of gain. It’s also been shown that in grow-finish pigs, the incidence of ulcers tends to increase when they are fed cereal grain diets with an average particle size less than 700 microns. Pelleting of feed tends to increase fibrous tissue formation on the stomach lining and/or ulceration.

However, all the blame cannot be placed on feed manufacturing as the incidence of ulcers has been shown to be affected by grain type and the stressfulness of housing and shipping conditions. The addition of one per cent sodium or potassium bicarbonate to the feed (to decrease the pH of the stomach contents) has been tested and resulted in reduced stomach lesions. However, researchers say more study is needed to justify widespread use in the swine industry.

Recent studies on herds in North Carolina have found that a high proportion of mortality attributed to gastro-esophageal ulcers occurs during the summer months. Pigs that die from ulcers are usually in good condition, but at death, they are characteristically very pale in color. The paleness is a result of rapid loss of blood from the body into the stomach via the lesions. Thus, these pigs are commonly referred to as “bleach-outs.”

Data collected from one study of 103 groups of pigs in North Carolina during the latter half of the year showed mortality rates due to bleach-outs in the groups at 3.4 per cent. Although many farms did not have a significant bleach-out rate, mortality due to bleach-outs on some farms was as high as 20 to 25 per cent. From these studies, researchers observed the following:

- Mortality due to bleach-outs varies over time, with peaks in mortality in September close-outs, but lower in June and December close-outs.
- Very little bleach-out mortality was seen in the January-to-June closeouts.
- Peaks in mortalities due to bleach-outs occur around 100 days on feed (with a typical bell shaped curve around that age).
- In some herds, clustering of mortalities due to ulcers can be seen and does not always fit a typical bell shaped curve.
- In one study of 68 close-out groups, running out of feed increased the mortality in the following week by 29 per cent.
- The humidity level in the air was positively correlated with mortality rates and may explain the seasonality of the problem.
- Mixing pigs does not have a significant effect on the occurrence of mortality due to ulcers.
- Barrows have higher rates of mortality due to ulcers.

The Role of Feed

- Mixing pigs does not have a significant effect on the occurrence of mortality due to ulcers.
- Barrows have higher rates of mortality due to ulcers.

Monitoring Your Herd for Ulcers

To get a handle on your herd’s ulcer situation:

- Monitor and record grow-finish mortality rates and “bleach-out” rates.
- Do post-mortem checks to determine causes of death.
- Record timing of ulcer outbreaks with respect to days on feed and season.
- Investigate the occurrence of other contributing factors such as disease, feed and water shortages, mixing, stressors and feed particle size.

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What We Know About Gastric Ulcers in Pigs

(In this is a summary of three presentations made by Dr Robert Friendship, University of Guelph; Dr John Deen, University of Minnesota; and Dr Joe Hancock, Kansas State University, at the 2000 Allen D. Leman Swine Conference, Minneapolis, Minnesota in August 2000.)

In most operations, gastro-esophageal ulcers in grow-finish pigs are a major concern. The outcome of this condition is usually death. Mortality due to ulcers can also be seen (to a lesser degree) in nurseries and in sow units. In many grow-finish barns, affected pigs often appear pale and slow-growing. Most of these pigs don’t die since their ulcers heal with time, but the result is slower growth. Thirty years ago, ulcers in pigs caused significant problems and high mortality. At that time, the problem was largely attributed to poor feed milling practices. In the 1990’s, this problem has resurfaced, and deaths due to ulcers are a significant part of the total mortality reported in many grow-finish units.

Bacteria in the Stomach and Ulcers

Spiral-shaped bacteria were found in the stomachs of animals as early as 1881. Although similar organisms were found in human stomachs as early as the 1930’s, it was only in 1984 that the curve-shaped bacteria (known as Helicobacter pylori) were considered to be the common cause of gastric ulceration and chronic gastritis in humans. Research on the cause has greatly changed the way ulcers are now treated.

In 1990 similar spiral-shaped bacteria were found in the stomachs of pigs. Based on DNA studies they were found to be members of the same Helicobacter genus. This bacteria has yet to be definitely identified, and until that happens, the name proposed for this new species is Candidatus Helicobacter suis. Early studies of pig stomachs from various locations around the world have found Helicobacter-like organisms to be in about 10 per cent of pig stomachs. In addition, several studies conducted over the last three years have found that pigs from certain herds have a higher prevalence of this bacteria. Often, 60 to 80 per cent of the pigs test positive.

In summary, we now know:

- Helicobacter-like organisms can be found in stomachs of pigs and are widespread in the pig populations with marked herd-to-herd variation occurring.
- These organisms are likely transferred from pig-to-pig through feces.
- Management factors such as all-in all-out and good barn sanitation reduces the prevalence.
- The presence of Helicobacter-like organisms in pig stomachs has not been clearly linked with stomach lesions.
- Infecting clean pigs with Helicobacter organisms has not produced gastro-esophageal lesions or ulcers.

Ulcers – When Do Herds See Them?

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