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Control strategies for mortality in a multiple site finishing system

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Cargill Pork

Background of the system

Cargill Pork is a business unit of Cargill, Inc., a multi-national, privately owned company which employs 80,000 people worldwide. Cargill's entry into the swine production business occurred 20 years ago as a result of the need to utilize an acquired feed mill in Arkansas.

Cargill Pork presently consists of 110,000+ sows, primarily in small, farmer-owned, contract sow farms of 500-1000 head located in Arkansas, Oklahoma, North Carolina, southern Illinois, and Missouri. Our contract nurseries are 3200 or 6400 head facilities, which means each nursery fills from 16-30 sow farms. Nurseries are located in Missouri, Iowa, southwest Minnesota, and southern Illinois.

Ninety percent of the production out of these nurseries are sold to around 500 independent producers into Iowa, southern Minnesota, western Illinois, and northern Missouri. The pigs are sold (at 55#) on a formula according to futures price and input costs which allows the producer to lock in a predicted profit as long as he hits projected production parameters. Producers purchase their nutritional inputs from Cargill Animal Nutrition and can choose to sell their market hogs to Excel Packing (a Cargill subsidiary).

These 500 independent producers who purchase pigs from Cargill expect technical support from Cargill. A team of eight Technical Service Managers and myself strive to provide this support.

Addressing mortality in a multiple site finishing system

When working with a common pig source and multiple finisher sites, including multiple producers across a large geography, it is imperative that management recommendations are simple, concise, and lead to concrete on-the-farm implementation of best management practices. In addressing the mortality issue, we like to divide mortality cases into two classes:

“Chronic” facility: Continual poor performance across many groups over time

Facility and environment problems

- Temperature fluctuation problem due to ventilation system or operator error
- Overcrowding: < 7.6 sq. ft. with 280#+ market hogs
- Feeder competition, water in-take, flooring & gate injuries, pen jumpers
- Feed micron size to enhance efficiency without ulcers, HBS issues

Poor management

- Lack of preventative practices
- Improper treatment of disease and injury
- Poor or slow recognition of disease
- Lazy, unwilling to inject or remove sick hogs

System wide mortality problem due to pathogen load (finisher symptoms)

- PRRS activity with Strep, *H. parasuis*, +/- PCV2
- SIV (H1N1 & H3N2)
- Ileitis
- Hemorrhagic bowel syndrome
- Gastric ulcers

The following list represents various techniques and system approaches we use to try to address these mortality issues. It is imperative to realize that these recommendations are system-specific and will not be appropriate for other systems. Each system needs to develop procedures and protocols that address the needs, desires, and problems of the customers in that system.

- Standardized BMPs for disease prevention (feed grade and pulse dosing)
- Disease treatment BMP (by symptom; protocols for treatment).
- Diagnostic protocols (necropsy/tissue submission; digital pictures of disease)

- Bacterial sensitivity guide development (for use by field support and veterinarians)
- Formulary (guide to use of common therapeutics)
- Ventilation principles to address temperature fluctuation
- Feed micron size analysis on farm
- Viewpoints and theories regarding our experiences with:
 - Dermatonephropathy syndrome
 - SIV: serology, vaccination
 - Ileitis: control, vaccination
 - Salmonella: control, vaccination
 - HBS
 - Gastric ulcers
 - Erysipelas

A number of color photos and graphs to supplement this paper are available via e-mail from the author. Contact Dr. Eric Christianson at Cargill Animal Nutrition Division, (641) 592-1290.

