

Personal Protection & Training

Auditing Best Management Practices



Ken Engele, BSA
Prairie Swine
Centre

In 2017, on-farm best management practices were audited on a total of 24 farms throughout Canada as part of a national project titled From Innovation to Adoption: On-farm Demonstration of Swine Research. This article is part of an eight-part series reporting on these audits.

Ensuring a safe work environment is the responsibility of every employer and one that the Canadian pork industry is committed to. Results in Table 1 indicate pork producers are committed to providing the safest workplace possible for their employees. Audit results indicate that dust masks, hearing protection and hydrogen sulphide (H₂S) monitors are being used to varying degrees in production units across Canada.

While all farms that use H₂S monitors use them for pit pulling, it is very important that they be used in other key day-to-day activities where H₂S could arise. One of these situations would be power washing, as workers may be exposed to

H₂S concentrations that exceed acceptable limits. Locations of peak H₂S concentrations vary within the room. It is important that monitors be provided to all swine barn workers at these key times as H₂S may be present in higher than anticipated concentrations.

While approximately 60% of participating farms offer H₂S training, it is very important that recertification does not get lost in day-to-day activities. Training and standard operating procedures should be provided, at least every three years, so workers can learn how to deal

promote ease of loading pigs include pen-walking before loading, minimal prod use, using appropriate handling boards and ensuring that group sizes are manageable. Producers realize the importance that proper pig handling plays in their operations, as audit results indicate a majority of the farms offer pig training to their employees. A number of different training methods were utilized, ranging from in-house training sessions, in addition to pig handling videos developed by various pork councils and organisations throughout Canada.

“A total of 24 farms were audited making this project the first of its kind to measure best management practices across the Canadian pork industry”

with routine operation and emergency situations generating high H₂S concentrations. Low cost training sources are available through Assiniboine Community College and Prairie Swine Centre, with Prairie Swine Centre offering an online version of H₂S Awareness to keep employees aware of dangers associated with H₂S.

Regarding pig handling, research has shown that proper animal handling reduces stress for pigs and people. Strategies that reduce stress and

Conclusion

Information presented within this article is based on the results of auditing 24 farms across Canada varying in location, size and type of operation. Overall, pork producers are doing a good job of ensuring adequate safety policy and procedures are implemented on-farm. It is important to remember to review policies and procedures annually to ensure the safest work environment possible.

Table 1. Personal Protection and Training Audit Results

Category	Average Percentage of Farms		
Are dust mask used in the facility? It is recommended to use dust masks in the facility.	83 %	0 %	17 %
Is hearing protection used in the facility? It is recommended to use hearing protection in the barn.	100 %	0 %	0 %
Are hydrogen sulphide monitors used in the facilities? It is recommended to always use hydrogen sulphide monitors in the facility.	0 %	50 %	50 %
Do you provide training on hydrogen sulphide awareness? It is recommended to provide training regarding hydrogen sulphide awareness.	54 %	4 %	42 %
Do you provide animal handling training? It is recommended to provide animal handling training.	75 %	4 %	21 %

Legend

Meets recommendation

Partially meets recommendation

Does not meet recommendation

For Further Reading

Mask use in swine barns reduces health effects
 (English) <http://www.prairieswine.com/mask-use-in-swine-barns-reduces-health-effects-2/>

Hydrogen sulphide concentration while pulling pit plugs and power-washing rooms
 (English) <http://www.prairieswine.com/hydrogen-sulphide-concentration-while-pulling-pit-plugs-and-power-washing-rooms-2/>

Engineering controls to reduce hydrogen sulfide exposure of workers in swine buildings
 (English) <http://www.prairieswine.com/engineering-controls-to-reduce-hydrogen-sulfide-exposure-of-workers-in-swine-buildings/>

TRAINING
 Manitoba Pork
 (English) <http://www.manitobapork.com/human-resources/training-opportunities>
 Hydrogen Sulphide Awareness Training for Liquid Manure Handling Systems
 (English) <http://www.prairieswine.com/training/>

PIG HANDLING
 Proper Pig Handling
 (English) <http://www.manitobapork.com/animal-care/pig-handling>
 Video clips on certain practices during the last 24 hours prior to shipment to the slaughterhouse
 (English/Francais) <http://www.cdpq.ca/recherche-et-developpement/projets-de-recherche/projet-221.aspx>



(Finding New Technologies... cont'd from page 9)
 services which has lead them to begin mining the database for trends and the first Big Data output is a realization that most swine herds have 'Super Sows' and that these females can be identified as giving 15 liveborn in the first litter. Records on over a million matings identified that these females have a 6% higher farrowing rate and will produce 26 more live born pigs in her lifetime than their herd-mates. This detailed analysis lead to advanced management procedures that should be followed once the 'Super Sow' is identified. Long-term strategies include selecting for more of these prolific, long lasting females in the herd and use of predictive analytics. The current estimate is that these high-performance sows reduce the cost of production by \$6 USD per 20kg weaned pig produced.

This same group has taken the commercially-available digital pen and created software that allows a pen and paper solution in the barn (instead of expensive phones/PDA). A proprietary software application has been developed that allows the farm to determine the questions they

want to ask and measures they want to be taken in the barn. The special paper form created links to the digital pen and through Bluetooth and wifi links in real-time to the home office. A screen that appears in the office, converts handwritten numbers and letters into digital and allows for verification (sloppy writing) and saving of a digital file for later analysis. This has been used for example to score foot problems in the herd and categorizing individuals by 5 different problems and whether the problem is light, medium or severe. Whole herd shifts in hoof health can then easily be monitored and managed over time. Cost to be determined.

The Vetic was developed by Optimal Pork Production (OPP) in Spain and manufactured by Henke Sass in Germany. This will become available in 2018 and will provide complete traceability of injectables by linking the pig/pen/room through RFID tags by having a reader right on the syringe. This allows the quantity of product with detail of the day and even lot number of the product injected to be recorded and that record linked to that pig. Retail price has not been set

but with changes in antibiotic regulations and RWA programs, this type of technology will likely become part of the future infrastructure of traceability on farm.

The Bottom Line

The technologies identified here are proving to be robust, reliable and inexpensive. It is likely that an abundance of independent manufacturers from diverse industries will look at animal agriculture, and attempt to measure or monitor welfare, environmental pressures and food safety with their technologies. What will be needed is a method to evaluate systematically how well the products work, the data integrity and security and the link to decision support software and methodologies required to get value out of the technology. If this is done correctly there is value for the industry, otherwise we do not need 'High-Tech Hype' technology just for the sake of technology that isn't moving us in a strategic direction of making pork the prime choice of meat protein for consumers world-wide.

