Abstract Example

Microbiological analysis of swine tonsils collected from carcasses at slaughter

Terri L O’Sullivan DVM¹; Robert M Friendship DVM, MSc, Dip ABVP¹; Beverly McEwen DVM, MSc, PhD, Dip ACVP²; Catherine Dewey DVM, MSc, PhD¹.

Department of Population Medicine, University of Guelph¹, Animal Health Laboratory, Laboratory Services Division, University of Guelph²

Introduction: The difficulty of sampling swine tonsils ante-mortem makes collection at the time of slaughter an obvious alternative for disease monitoring purposes. (1) The funnelling of large number of animals during the slaughter process also provides an opportunity to sample a wide range of animals and animal sources on one premise. The objectives of this 7-month study were to determine the prevalence of porcine pathogens of the tonsil of the soft palate at slaughter, to determine if sampling normal or abnormal hog carcasses provides different microbiological profiles, and to determine if the slaughter plant provides

Methods: Twenty (20) tonsil samples were collected every week for 20 consecutive weeks, June to December 2008, from swine carcasses at a federally inspected abattoir in southern Ontario, Canada. The sampling was performed by experienced abattoir staff during normal slaughter operations. Microbiological analyses of the tonsils were conducted by the Animal Health Laboratory (AHL) at the University of Guelph. Guelph, Ontario. Testing included .................................................... The relationship between finding a pathogen from pigs on the hold rail (abnormal carcasses) vs. normal carcasses was examined by logistic regression. A generalized mixed model using farm as a random intercept was utilized to determine whether there was any clustering at the farm level.

Results: A total of 395 samples were collected of which 180 were tonsils from normal carcasses and 215 from carcasses that were on the hold rail. 264 different farms were represented and no clustering occurred at the farm level. Most commonly isolated bacterial pathogens included: S. suis (53.7%), A. pyogenes (29.9%), P. multocida (27.3%), and S. porcinus (19.5%). PRRS virus and PCV-2 were identified in 22.0% and 11.9% of the samples respectively. Tonsils had 2 times greater odds (OR= 2.16, CI 1.44-3.24) ........................................... if sampled from the holdrail vs. normal carcasses. Similarly, tonsils had an 8 (OR= 8.79, CI 4.24-18.23) and 7 (OR=7.51, CI 2.89-19.54) times greater odds of being positive for S. porcinus and Staph hyicus respectively, if collected from the hold rail vs. normal carcasses. However .......

Conclusions: The sampling frame and sampling method proved to be an efficacious way to collect swine tonsil tissue. Accurate tissue recovery occurred (99.7%), the sampling protocol was not technically challenging, and plant production was minimally affected during the sampling periods. Tissue collection during the slaughter process was a superior method of tonsil tissue collection compared to reports of ante mortem techniques where only 48.9% of samples were correctly obtained by tonsil biopsy methods (1). Interestingly....................

Industry Implications: Highlight the important information/message that your research brings to the swine industry........................................

Acknowledgments: Funding provided by............

References: