



HHM-016

ARE PIGS WITH IRON DEFICIENCY LESS ABLE TO PRODUCE ANTIBODIES IN RESPONSE TO VACCINATION COMPARED TO PIGS WITH ADEQUATE IRON STATUS?

R. Friendship¹, V. Seip¹, V. Farzan¹, T. Framstad², J.P. Nielsen³, G. Almond⁴, T. Gillespie⁵.

¹ University of Guelph, Guelph, Canada; ² Norwegian University of Life Sciences, Oslo, Norway; ³ University of Copenhagen, Copenhagen, Canada; ⁴ North Carolina State University, Raleigh, United States; ⁵ Pipestone Veterinary Services-Bethany, Rensselaer, United States.

Introduction

Iron deficiency is common among newly weaned fast growing pigs and it is possible iron status is associated with immune function. Pigs are often vaccinated at weaning for diseases they will face in the grower stage of production. The objective of this research trial was to determine if antibody production in response to vaccination against *Mycoplasma hyopneumoniae* is affected by the iron status of pigs at the time of vaccination.

Material and Methods

Three different iron treatment groups were created. Pigs received via intramuscular injection either 100 mg of iron dextran (Uniferon®, Pharmacosmos) at 3 days of age (n=24) (low-iron), or 200 mg of iron at 3 days of age (n=24) (medium-iron), or 200 mg of iron at 3 days and at 14 days of age (n=22) (high-iron). At weaning and 3 weeks later, pigs were vaccinated against *M. hyopneumoniae*. Six weeks post-weaning the serum was tested using IDEXX antibody ELISA.

Results

The average hemoglobin levels for pigs in the three treatment groups at weaning were 81g/L, 105g/L, and 123g/L for low-iron, medium-iron and high-iron, respectively. Based on the interpretation of an S/P ratio of equal to or greater than 0.4 as a positive antibody titre, there were 54%, 42% and 54% positive pigs in the high-, medium- and low-iron groups, respectively. The S/P ratio at 6 weeks post-weaning was found to be not associated with hemoglobin levels of pigs at weaning.

Discussion and Conclusion

Iron status at weaning was improved by a second intramuscular injection of 200mg of iron dextran at 14 days of age, but the iron status at weaning did not affect the number of pigs that tested antibody positive to vaccination against *M. hyopneumoniae*. Other immune parameters are being evaluated, as we recognize antibody production is only one aspect of the immune response.

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