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TITLE
IRON DEFICIENCY IN NEWLY WEANED PIGS

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CONTENT
Iron deficiency is common among newly weaned fast growing pigs and it is possible iron status is associated with immune function. Therefore it is important to investigate whether anemia is associated with poorer antibody production following vaccination. In addition there is some concern that high inclusion of zinc in starter diets might interfere with iron absorption and exacerbate anemia in the nursery. The objectives are to determine whether iron deficiency affects the pig's immune system and to determine if iron deficiency is corrected once pigs begin eating starter feed.

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=76) (low-iron), or 200 mg of iron at 3 days of age (n=67) (medium-iron), or 200 mg of iron at 3 days and at 14 days of age (n=70) (high-iron). At weaning (3 wk of age) pigs were fed a diet containing 3000ppm of ZnO. Pigs were vaccinated against M. hyopneumoniae. Six weeks post-weaning the serum will be tested using IDEXX antibody ELISA.

The average hemoglobin levels for pigs in the 3 treatment groups at weaning were 76g/L, 102g/L, and 119.6g/L for low-iron, medium-iron and high-iron, respectively. At 3 weeks post-weaning hemoglobin levels were 101, 109, and 111g/L for low, medium and high iron treatment, respectively. The ELISA testing for antibody response has not yet been completed.

Iron status at weaning was improved by a second intramuscular injection of 200mg of iron dextran at 14 days of age, but average hemoglobin levels dropped after weaning in this group of pigs, possibly because of the presence of high zinc levels in starter feed. Pigs in the low-iron treatment group improved but anemia was still a concern 3 weeks post-weaning.