RESEARCH ABSTRACT

SWINE HEALTH

Title: Characterizing level of PCV type 2 virus in serum and expression of PMWS in different populations of pigs - **NPB #06-143**

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Scientific Abstract: A total of 3,504 pigs were scored at 10 to 14 day intervals for symptoms of PCVAD from weaning through 125 d of age. Blood samples were drawn at weaning, 60 d, 90 d and 125 d of age and analyzed for antibodies to PCV2 and for amount of PCV2 virus in the blood (virology). Approximately 15% of the pigs scored positive for PCVAD. Almost none scored positive at weaning, and only a few were positive at 60 days of age. Most positive scores occurred from 90 to 120 days of age when classic symptoms of PCVAD were evident. Necropsy confirmed symptoms and that scoring live pigs for disease is accurate. Nearly all pigs were positive for serology at weaning, indicating that they were producing antibodies for PCV2, but nearly all were negative for virology, indicating that they were not replicating the virus. Positive ELISA ratios at young ages were likely due to maternal antibodies in pig's serum. Most pigs remained negative for virology at 60 days of age, but a few pigs were beginning to replicate the virus. Serology was more variable at 60 days in that some pigs were no longer making antibody to PCV2. Variation in both serology and virology was great at 90 and 120 days. Heritability of PCVAD score was 17% and heritability of virology at 90 d of age was 38%. Heritability of ELISA ratios were 0 or very low at all ages. Pigs that replicated the virus at high rates at 90 d of age showed severe symptoms of disease, whereas pigs that replicated the virus at low to moderate rates showed only few symptoms of disease – these may be the pigs that tend to recover, although their growth was retarded. Pigs that did not replicate the virus, cleared the virus quickly, or replicated it at low rates showed no phenotypic symptoms of disease. In the presence of PCV2, selection for PCVAD score of 0, low viremia levels, and heavy weights is expected to increase resistance to PCV2. The efficacy of selection on genetic markers to enhance resistance to PCV2 needs to be evaluated.