

SWINE HEALTH

Title: Diagnostic Characteristics of Oral Fluid for Detection of PRRS - NPB #07-129

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Abstract:

Simple and effective surveillance methods are critical for control and elimination of PRRS. Current methods for PRRSV herd surveillance are based on statistical sampling of random individuals repeatedly over time. The methods are well characterized but require significant labor and capital while remaining subject to failure. Zimmerman and colleagues recently described a simple, pen-based community sampling method of oral fluid that is a promising method for low-cost, routine monitoring. The basic evaluation of this method using standard ELISA and PCR methods in experimental and field conditions is promising. Here, we optimize ELISA conditions for testing of anti-PRRSV protein antibodies in oral fluids, and characterized the time course of anti-PRRSV antibody responses. The study, carried out in three replicates, showed that assay conditions must be optimized for oral fluid samples to increase sensitivity, and that anti-PRRSV antibodies appear in oral fluids at the same time or later than in serum. Interestingly, differences were observed in the dominant isotypes present in oral fluids depending on sampling method. IgG was more abundant in sampling of individual pigs with absorbent wicks, whereas IgA was more abundant in pen sampling with rope. The findings support the value of pen-based sampling and suggest that multiple mechanisms regulate antibody secretion into the oral cavity

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