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Using PCR for PRRS on Semen to Screen Boars for Entry into a Boar Stud

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Introduction. In the last ten years since the PRRSV has infected herds in the United States, researchers have shown that PRRSV infected replacement breeding stock can be a source of virus and thus clinical outbreaks in commercial swine herds. Veterinarians have been attempting to evaluate serologically positive replacement breeding stock to try to determine if those animals are shedding the PRRS virus. Pre-entry isolation procedures have been implemented to: acclimate incoming animals to herd pathogens, allow animals a period of time to clear PRRS virus without reexposure, and to allow testing protocol to be completed that try to evaluate those replacements and reduce the risk of carrying PRRS virus into the herd. One of the testing procedures that has been utilized in evaluating boars pre-entry to an AI collection boar stud is the PCR (polymerase chain reaction) for PRRS. The most common samples for PCR analysis have been serum and semen. The following is a retrospective compilation of data from a testing program that used PCR for PRRS on semen over a two year period to evaluate boars during pre-entry isolation as to whether or not they were shedding the PRRS virus.

General information. From April, 1996 to November, 1996 (GROUP A), the pre-entry isolation period for this AI collection boar stud was 30 days. Beginning on day 25 of isolation, 100% of the boars in isolation had semen collected. That raw semen was submitted chilled or frozen for PCR for PRRS and the results were used to evaluate the readiness of those animals for entry into the AI collection boar stud. If any animal was positive for PRRSV on the PCR test, then that animal and the animals in the neighboring crates were retested at 10 days post first collection and again at 15 days post first collection.

From November, 1996, to August, 1998 (GROUP B), the pre-entry isolation period for this AI collection boar stud was extended to 60 days. Beginning on day 45 of isolation, 100% of the boars in isolation had semen collected. That raw semen was submitted chilled or frozen for PCR for PRRS and the results were used to evaluate the readiness of those animals for entry into the AI collection boar stud. If any animal was positive for PRRSV on the PCR test, then that animal and the animals in the neighboring crates were retested at 10 days post first collection and again at 15 days post first collection.

Results. GROUP A totaled 131 boars. Of those animals, 12 (9.1%) were positive for PRRSV on PCR at 25 days isolation or greater. Of those positive animals, zero (0%) were positive on the second collection 10 days post first collection. Zero (0%) were positive on the third collection 15 days post first collection. Neighboring boars to positive animals were never positive on subsequent collections.

GROUP B totaled 440 boars. Of those animals, 7 (1.6%) were positive for PRRSV on PCR at 45 days isolation or greater. Of those positive animals, 1 was positive on the second collection 10 days post first collection. One animal was positive on the third collection 15 days post first collection. Neighboring boars to positive animals were never positive on subsequent collections.