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PCV Outbreaks and Clean-Up in a High Health Herd of PCV Negative Status

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Summary: The closed swine herd of Spring Point Project, a research non-profit organization with serves the Schulze Diabetes Institute at the University of Minnesota, was established in 2007. Population of the barrier facility was a year long process consisting of multiple cohorts of caesarian derivations from a swine herd of conventional disease status. The herd is a DPF (designated pathogen free) herd, with PCV (Porcine Circovirus, Types I and II) being a pathogen of exclusion. Five cohorts were introduced over the year, with PCV outbreaks occurring twice, involving three of the cohorts. Steps were taken after each outbreak to eliminate the virus from the barrier and herd. PCV vaccines were not used on swine within the barrier. At this time, the herd is PCV free.

Case Report: The first cohort of Spring Point Project was successfully derived into the barrier, remaining swine pathogen free until approximately three weeks of age. At this point the pigs were moved from a quarantine nursery room, consisting of nursery carts with tenderfoot flooring, into a quarantine grower room. The grower room enclosures were sealed concrete with stainless steel penning and sections of tenderfoot for comfort. Within several weeks after movement into the grower room, the piglets were found PCR and Elisa positive for PCV. Environmental testing suggested the PCV virus was present on the stainless steel penning, prior to movement of the pigs into the room. The virus was removed from the barrier by the following steps: euthanizing all positive animals (all piglets within the barrier at the time), extensive cleaning with detergents and degreasing agents, sterilization of equipment and rooms with chlorine dioxide (Clidox), vaporized hydrogen peroxide (VHP), disinfection with potassium peroxymonosulfate (Virkon or Trifectant) and serial PCR testing of the environment for PCV Three subsequent cohorts were introduced into the barrier , starting approximately two months after the removal of the first cohort. These groups of piglets were derived, quarantined in nursery housing and passed into quarantine grower housing, and were found PCV negative. The fourth group of piglets were co-housed in quarantine grower housing with the third cohort. Approximately two weeks later, the co-housed cohorts (three and four) were positive for PCV by PCR, Elisa and IHC. Environmental testing, record reviews and staff interviews suggested that the PCV virus most likely had entered the quarantine grower room via a staff member. The virus was removed from the barrier by the following steps: euthanizing all positive animals (cohorts three and four, leaving PCV negative cohort two within the barrier), disposing of all removable items from the PCV positive grower room (leaving only the stainless steel penning), sterilization of the room with chlorine dioxide, disinfection of the room with potassium peroxymonosulfate and glutaraldehyde/quaternary ammonium (Synergize). Removal was monitored by serial PCR testing of the environment for PCV and live sentinel testing of the previously contaminated area.

The fifth cohort was derived, quarantined in nursery housing and passed into quarantine grower housing, and found PCV negative. After 6 months, all animal rooms were removed from quarantine status. Currently, more than one year later, the herd is PCV negative.