

SWINE HEALTH

Title: Economic Impact of PRRS on the Cost of Pork Production –
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Abstract: This study evaluates the cost of PRRS to the United States swine industry. PRRS can lead to reproductive and mortality losses in the breeding, gestation and farrowing phases of pig production. Additionally, losses can carry into the nursery and grow-finish phases of pig production through reduced feed efficiency, increased days to market, reduced average daily gain, increased death loss, etc. The cost analysis is structured to analyze the economic impact of a PRRS outbreak on the three segments of the pig production industry; breeding herd and farrowing, nursery, and grow-finish. Cost impacts are provided by these phases of production. Information for the analysis was obtained from three sources; a case study approach of ten swine production operations which had experienced a PRRS outbreak, the National Animal Health Monitoring System (NAHMS), and a Delphi-type survey of professionals familiar with PRRS and its impacts on pig production efficiency. The issue of the variability of impacts from PRRS is also evaluated. To do this, information from the individual case farms and the Delphi Survey were used to provide insight into the level of variability of PRRS impacts.

Case study results showed that the farrowing rate declined during PRRS outbreak periods by 10.92 points or from a farrowing rate of 79.36 pre-PRRS to 68.44 during the PRRS outbreak. The number of pigs weaned per litter declined by 1.5 pigs or from 9.13 pigs to 7.63 pigs per litter. Mortality level of nursery pigs increased by 10.65 percentage points (from 1.55 percent death loss to 12.2 percent death loss) during a PRRS outbreak. Mortality level in grow-finish pigs increased by 6.05 percentage points. Feed efficiency and average daily gain for nursery and grow-finish pigs were also impacted. Average daily gain declined by .21 pounds per day (25 percent decline) for the nursery pigs and .20 pounds per day (12 percent decline) for the grow-finish pigs.

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Nursery pigs required .18 more pounds of feed (11.69 percent) per pound of gain while pigs in the grow-finish production phase required .24 more pounds of feed (7.57 percent) per pound of gain. The economic impact is as follows: \$74.16 per litter in herds which have outbreaks in the gestation-farrowing phase; \$6.01 per pig in positive nurseries; and \$7.67 per pig in positive grow-finish facilities. The case study analysis shows the total economic impact on production costs to pig producers in the United States is projected to be \$560.32 million annually.

The Delphi survey approach showed a greater economic impact than did the case study approach. Production efficiencies such as litter size and farrowing rate declined. Additionally, Delphi survey respondents indicated that weaned pig values were lower for PRRS positive weaned pigs. Their value declined by about 25 percent during the peak outbreak period and about 10 percent during the recovery phase. Mortality, feed efficiency, and average daily gain were impacted in the nursery and grow-finish phases of production for PRRS positive pigs as well. Additionally, Delphi survey respondents indicated that the level of lightweights and culls increased during PRRS outbreaks. There were 18.57 percent more lightweights/culls in the nursery phase during the peak outbreak period and five percent more lightweights/culls during the nursery recovery phase, on average 11.79 percent more lightweights/culls. The peak outbreak period is defined as the acute time of severe clinical signs and production losses. The recovery period is inclusive of moderate clinical signs. The level of veterinary medicine expense per pig was also higher for PRRS positive pigs. On average, it was \$1.21 per pig higher. For the finishing phase there were, on average, 8.13 percent more lightweights/culls. Veterinary medicine cost was, on average, \$1.49 higher per pig for PRRS positive pigs. The economic impact for the farrowing phase using Delphi survey information is as follows: \$189.58 per litter during the peak outbreak period and \$52.19 per litter during the recovery phase; \$123.47 on average. The economic impact for the nursery phase is \$11.68 per pig during the peak outbreak; \$3.37 per pig during the recovery period; on average \$7.30 per pig. The economic impact during the grow-finish phase is \$15.39 per pig during the peak outbreak; \$6.03 per pig during the recovery phase; an average \$10.66 per pig. The total economic cost on production cost to pig producer is projected to be \$761.8 million annually.