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The Impact of PRRS on the Cost of Pig Production

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A health event that has received much attention in the pork production industry for more than a decade is Porcine Reproductive and Respiratory Syndrome (PRRS). It is a disease that has been identified as causing severe endemic problems. In the recent National Animal Health Monitoring System (NAHMS) survey of pork production operations, PRRS was the second most often reported health problem in breeding herds. It was reported as a health problem in 21.4 percent of the breeding herds. The health status of pigs impact production efficiencies in the swine industry. This in turn can impact producer competition within the industry and the competitive position of the industry.

The primary focus of this paper will be to evaluate 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 on into the nursery and grow-finish phases of pig production through reduced feed efficiency, increased days to market, increased death loss, etc. This study used a combination of techniques and data sources to project the annual cost of PRRS on the United States swine industry. A case study approach and a Delphi survey of swine experts were used. Production parameters for pigs affected by PRRS are compared to those not affected by PRRS. Costs of the disease are summarized for the breeding-farrowing phase, the nursery phase, and the growing-finishing phase of production.

The economic affect of PRRS in the breeding-farrowing phase was calculated to be \$74.16 per litter on affected farms. Of this cost, \$45.00 was derived from a reduction in the number of pigs weaned per litter while \$29.16 was from reduced farrowing rate. The cost of PRRS in the nursery production phase was estimated to be \$6.01 per head on an affected

farm. Of this, increased pig mortality was \$3.58, reduced feed conversion was \$1.17 and reduced average daily gain was \$1.26. The economic affect of PRRS in the growing-finishing production phase was estimated to be \$7.67 per head on affected farms. Of this, increased pig mortality was \$3.23, reduced feed conversion was \$3.00 per head and reduced average daily gain was \$1.44.

In order to extrapolate the projection for the case study farms into a national cost aggregate, information collected by the USDA-National Animal Health Monitoring System (NAHMS) in their study of swine production in 2000 was used to estimate the prevalence of PRRS affected farms in the U.S. industry. Using the NAHMS information and the size of the U.S. pig industry the projected cost of PRRS is projected to be \$66.75 million per year in the breeding-farrowing phase; \$201.34 million per year in nursery pigs and \$292.23 million per year in finishing pigs. Combining the aggregated costs of PRRS yields an annual cost estimate of \$560.32 million.

As a comparison to the case study approach for estimating an average annual cost of PRRS to the U.S. swine industry, a Delphi survey of swine disease experts (primarily swine veterinarians) was conducted. When this data was summarized and aggregated to a national level, a somewhat higher impact of PRRS on the industry was projected. The cost impact of PRRS was estimated to be \$111.12 million per year on the breeding herd, \$244.53 million on the nursery herd, and \$406.15 million on the finishing herd, for a total impact of \$761.80 million.

With approximately 100 million market swine being sold each year in the U.S., PRRS can be estimated to add somewhere between \$5.60 and \$7.62 to the cost per head sold.