

**Title:** Monitoring and updating the value of productivity losses due to porcine reproductive and respiratory syndrome virus – **NPB #15-212**

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**Date report submitted:** December 4, 2018

### Abstract

The value of lost productivity due to porcine reproductive and respiratory syndrome virus (PRRSV) in the US was last updated for 2005 to 2010 (2010 Study). The value was estimated to be US\$664 million annually. In 2014, the National Pork Board (NPB) developed a strategic plan that identified the following goal to drive sustainable production: “By 2020, the NPB will deploy tools and programs to decrease the annual economic impact of PRRS by 20 percent, as adjusted for inflation and measured against the 2012 [“2010 study”] PRRS economic impact baseline study.” The objective of this study was to provide semi-annual updates of the estimated value of lost productivity in the US swine herd attributable to PRRS virus. This semi-annual report (October 2018) to the National Pork Board contains an assessment the value of lost productivity due to PRRSV for the five-year time period extending from October of 2013 to September of 2018.

The same economic classification of breeding herds and growing pigs, sources of data, and methods used to estimate the value of productivity losses due to PRRSV used for the 2010 study were used for this update. Changes in the value of lost productivity due to PRRSV at the national level is a function of four factors; 1) the distribution of breeding females and growing pigs in PRRSV affected and PRRSV unaffected herds, 2) productivity of breeding herds and growing

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These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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pigs in PRRSV affected herds relative to PRRSV unaffected herds, 3) pig prices, input prices and costs and 4) the size of the national herd. The contribution of each factor to changes in the value of lost productivity due to PRRSV was assessed independently, by fixing values for all other factors at the levels estimated for the 2010 study. The combined effect of changes in all factors was also estimated to determine the overall impact on the value of lost productivity due to PRRSV. For the purpose of monitoring progress toward the NPB's goal of reducing the impact of PRRSV, changes in the prices and costs as well as the size of the national herd, factors that were not directly influenced by producer and veterinary efforts to manage PRRSV, were fixed at the values used for the 2010 study.

Key findings for this semi-annual update (October 2018):

1. The incidence of PRRS outbreaks has decreased since the 2010 study which contributed to a significant increase in breeding herds that are PRRS virus positive but have not had an outbreak for at least 12 months. However, the apparent shift favoring control of PRRSV over elimination in breeding herds also occurred since 2010. The net effect of these shifts in the distribution of herds was to increase the value of lost productivity due to PRRSV.
2. Since 2010, progress in managing PRRSV has led to an improvement in the productivity of PRRSV affected breeding herds relative to PRRSV unaffected herds, contributing to a significant reduction in the value of lost productivity.
3. Based on changes in all factors the annual value of productivity losses due to PRRSV was \$560 million, down \$103 million or 15.61%, compared to the \$664 million per year estimated in the 2010 study.
4. For the purpose of monitoring progress toward the NPB's goal, the combined effect of changes in factors directly influenced by producer and veterinary efforts to manage PRRSV resulted in a net reduction in the value of productivity losses attributed to PRRSV to \$525 million dollars. **This is down \$138 million or 20.8%, compared to the \$664 million per year estimated in the 2010 study.**
  - a. Factors directly influenced by producer and veterinary efforts to manage PRRSV include a) the distribution of PRRSV affected and unaffected herds and b) productivity in PRRSV affected herds relative to PRRSV unaffected herds.
  - b. While the goal of a 20% reduction by 2020 was apparently achieved, the analysis was based on a limited set of breeding herd production data. Therefore, caution should be exercised when interpreting the results.