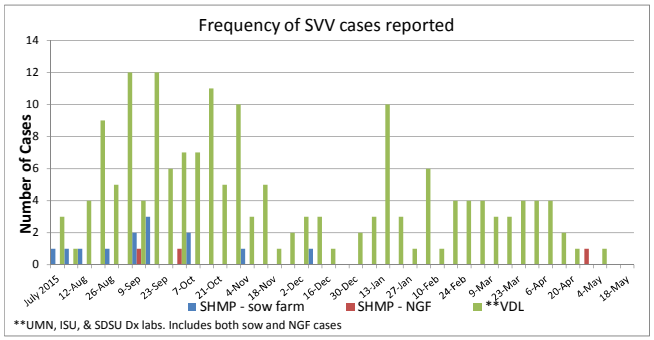
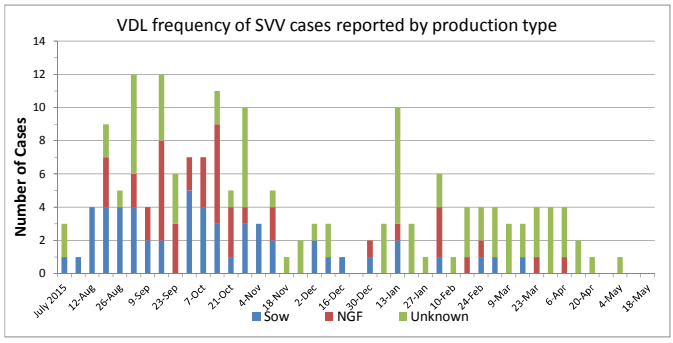
Seneca Valley Virus Update

We requested SHMP participants and UMN, ISU, and SDSU diagnostic labs to report frequency of Seneca Valley virus cases each week.

- 0 new cases to report this week
- Note that the reported cases between data sources may overlap





Economic Analysis of Vaccination Strategies for PRRS Control

Daniel Linhares, Clayton Johnson, Bob Morrison

Keypoints:

- A partial budget is a useful analytic tool for assisting with decision making.
- We used a partial budget to compare MLV to FVI as the exposure method of load-close-expose program to control and eliminate PRRSv from infected breeding herds.
- Under the assumptions used in this study, MLV held economic advantage over FVI.
- Veterinarians should use your own economic circumstances to determine the economically best program for your situation.

Introduction

When a sow herd becomes infected, in an attempt to hasten control and elimination of PRRSv from the breeding herd, some veterinarians have adopted a strategy called load-close-expose. This consists of interrupting replacement gilt introductions into the herd for several months (herd closure) and exposing the whole herd to a replicating PRRSv. Either modified live virus (MLV) vaccine or field-virus inoculation (FVI) is used. In an earlier study that we conducted, herds that used MLV required 7 additional weeks to reach PRRSv-stability compared to herds that used FVI. However, MLV herds recovered production levels 11 weeks sooner and had less total loss in pigs weaned (advantage of 1,443 pigs per 1,000 sows). Depending on economic conditions at the time, there is a need to determine which program (MLV or FVI) has better overall economic advantage for a farm.

Methods

The partial budget was a deterministic simulation of net margin over feed costs (MOFC) for a breeding herd of 1,000 sows. Additional costs included MLV vaccine estimated to cost $1.00 per dose with 3 doses being administered per sow per year. For FVI, $100 was assumed for extra diagnostic costs to test the PRRSv inoculum used for herd exposure. Decreased costs were none. Additional revenue was none. Decreased revenue included the opportunity cost for pigs not weaned estimated as margin over cost of feed not consumed. Market price of $80.00/cwt carcass, average carcass weight of 200 lbs, and wean to finish feed cost of $ 99.49 per pig were assumed to yield an opportunity cost of $66.72 per pig not weaned. Secondly, the opportunity cost for impeded growing performance was calculated by multiplying the number of weeks it took for herds to achieve "time to PRRS stability" status (TTS) by the "number of pigs weaned per week" (500 pigs) and "cost attributed to PRRSv infection" in growing pigs ($13.52).

Results

The longer TTS observed in herds exposed with MLV resulted in approximately $ 67,000 disadvantage per 1,000 sows compared to FVI herds. Conversely, the lower total production loss in MLV herds resulted in advantage of approximately $ 96,000 per 1,000 sows compared to FVI herds. The net advantage for MLV herds of $ 26,548 per 1,000 sows. Sensitivity analysis revealed that decreasing margin over variable costs below $ 47.32, or increasing PRRSv-attributed cost above $18.89 or achieving time-to-stability before 25 weeks resulted in advantage of FVI over MLV.

This project was published and is available online. The citation is *Linhares DCL, Johnson C, Morrison RB (2015) Economic Analysis of Vaccination Strategies for PRRS Control. PLoS ONE 10(12): e0144265.doi:10.1371/journal.pone.0144265.*

Or contact me for a copy – Bob Morrison (BobM@UMN.Edu)