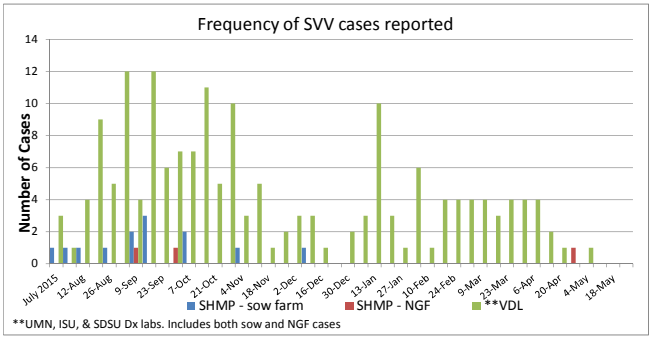
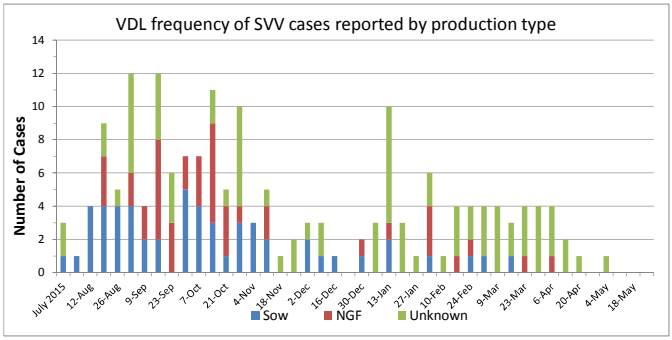
Seneca Valley Virus Update

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

- 0 new cases this week. 1 new additional case reported for week of 3/9/16
- Note that the reported cases between data sources may overlap





Economic Analysis of Vaccination Strategies for PRRS Control

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Key Points

- Last week, we reviewed a partial budget that was based on our project studying Load / Close / Expose in 61 sow herds. This week, we review impact of preventive vaccination in sow herds.
- Under the assumptions used in this study, preventive vaccination of sow herds was beneficial when the frequency of PRRSv infection was at least every 2.1 years.
- Veterinarians should use your own economic circumstances to determine the economically best program for your situation.

Introduction

See last week's Science Page for the details on the study and partial budget model.

Methods

Herds with preventative vaccination achieved TTBP and TTS 10 weeks and 3.3 weeks sooner than herds that did not practice preventative vaccination (11 weeks versus 21 weeks and 26.0 versus 29.3 weeks, respectively). Similarly herds with prior immunity (those practicing preventative vaccination) had 550 piglets not weaned/1000 sows after infection with field-type PRRSv, while PRRSv-negative herds (not vaccinating) lost 2,457 pigs not weaned/1000.

A breeding herd that was continuously vaccinated with PRRSv-MLV was assumed to have decreased annualized production of 2 pigs per sow per year which resulted in an increase of $2.96 dollars per weaned pig (worst case scenario). Also, it was considered that growing pig flows positive for a MLV PRRSv had an impact of $1.33 per marketed pig ($ 0.33 of average daily gain, $ 0.40 of feed conversion and $ 0.60 of other costs) compared to growing pig flows free of PRRSv. The outcome of the model was break-even frequency, in years, that a breeding herd would become infected with field type-PRRSv to justify preventative MLV-PRRSv practice. A sensitivity analysis was performed to compare the effects of 'margin over feed per pig' (MOFC), 'sow herd productivity' (measured as number of pigs weaned / sow / year) and 'attributed PRRSv-cost per infected growing pig' on the economic advantage of practicing preventative vaccination using MLV-PRRSv.

Results

Preventive vaccination of sow herds can be beneficial depending on the risk (i.e. expected frequency) of infection with wild type PRRSv (Table 5). The potential impact of MLV on sow and pig performance plays a critical role in this decision and is poorly understood. Sensitivity analyses showed that 'cost of attenuated PRRSv on growth performance' and 'reduction in pigs per sow per year (PSY)' influenced the break even (number of years between PRRSv outbreaks) to justify preventive vaccination. Lower attenuated-PRRSv-impact on productivity (via growth performance or breeding herd productivity) reduced the break even for practicing preventive vaccination. Considering 1.5 pigs and $1.00 for reduction in PSY and attenuated PRRSv-impact on growth performance respectively, the break even for preventative vaccination was 1 year and 9 months.

Table 5. Minimum infection frequency (in years) to justify PRRSv preventative vaccination with attenuated vaccine on a production system with one thousand sows.

	Benefit over cost (USD)		Probability of field-type PRRSv introduction per year (Pct)*		Project value (USD)*
Breeding herd becomes infected with field-type PRRSv	122,047	*	0.49	=	59,447
Breeding herd does not infect with field-type PRRSv	(115,899)	*	0.51	=	(59,447)
Long term difference					$ 0
Minimum frequency of field type-PRRSv-infection to justify preventative vaccination with MLV-PRRSv					2.1 years

* Probability of production system infecting with field-type PRRSv to reach break-even of benefit of preventative vaccination.

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