TECHNICAL BRIEF

PRRSGard®

Evaluating PRRSGard®, a modified-live PRRSV vaccine, in the face of an experimental 1-4-4 PRRSV challenge

Comparing PRRSGard, a chimeric, lineage 1 modified-live PRRSV vaccine from Pharmgate Animal Health, to another commercial PRRSV MLV in the face of an experimental 1-4-4 PRRSV challenge

Introduction

Porcine reproductive and respiratory syndrome virus (PRRSV) continues to be an impactful disease across the swine industry, costing producers an estimated $1.2 billion annually.[1] The value of PRRSV vaccines in growing pigs, specifically in hog dense areas where lateral PRRSV challenges are prevalent, has been repeatedly demonstrated. As new and relevant strains of PRRSV emerge, it is important to understand the value of current vaccines and vaccination strategies in the face of these challenges. PRRSGard is a chimeric, lineage 1 PRRSV modified-live vaccine (MLV) that has been shown to be effective for the vaccination of healthy swine, three weeks of age or older, against PRRSV. **The objective of this study was to evaluate the use of a PRRSV vaccine in growing pigs (PRRSGard) that is heterologous to the vaccine used on sows on a sow farm, compared to the homologous vaccine used on the sow farm (Prevacent®; ELANCO Animal Health) in the face of an experimental 1-4-4 PRRSV challenge in growing pigs in central Iowa.**

Project Design

- 164, three-week-old pigs were placed into a two-barn nursery site in central Iowa. The pigs were allocated to one of three treatment groups and received an on-label, full dose of the following vaccinations at placement into the nursery:
  - PRRSGard[2] (n=71)
  - Prevacent[3] (n=72)
  - Non-vaccinated control pigs (n=21)
- Pigs originated from a sow farm that had recently conducted a mass vaccination of Prevacent to the sows within the last 60 days.
  - 58% of collected serum samples from weaned pigs at placement (Day 0; D0) tested PRRSV ELISA positive.
  - Sampled pigs were PRRSV polymerase-chain reaction (PCR) negative at placement into the nursery.
- PRRSGard vaccinated pigs and non-vaccinated control pigs were housed in separate pens within the same airspace until D35. Prevacent vaccinated pigs were housed in a separate airspace until D35.
- On D35, all pigs were moved into the same airspace, equally distributed within pens and individually challenged with 2 mL of PRRSV RFLP 1-4-4 isolate.
- The study concluded on D49 when all pigs were euthanized and gross lung lesion scoring was conducted.
- Individual pig weights were collected on D0, D35, and D49.

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Results and Conclusions

- PRRSV was not identified on PCR testing in the non-vaccinated, control pigs prior to challenge on D35, even while being housed in the same airspace as PRRSGard vaccinated pigs. Previous studies have demonstrated limited shedding and spread[4,5] of PRRSGard within a population of pigs after vaccination.
- The PRRSGard vaccinated pigs outperformed the non-vaccinated controls, having a significantly better final weight (p=0.04) and average daily gain (ADG) after the PRRSV challenge (D35-49; p=0.03), while having a numerically better ADG overall (D0 – 49; p=0.07).
- PRRSGard vaccinated pigs had a numerically better ADG overall (Figure 1), end weight, and percent mortality following the PRRSV challenge (Figure 2) than Prevacent vaccinated pigs.
- PRRSGard demonstrated the ability to protect growing pigs and limit production losses in the face of an experimental PRRSV RFLP 1-4-4 challenge.

Figure 1

Average Daily Gain D0 - 49 (lbs)

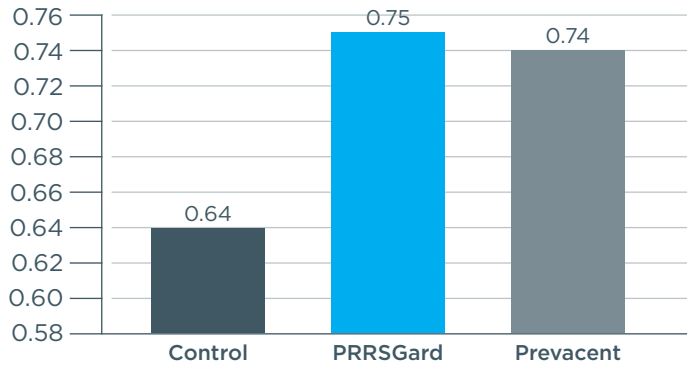
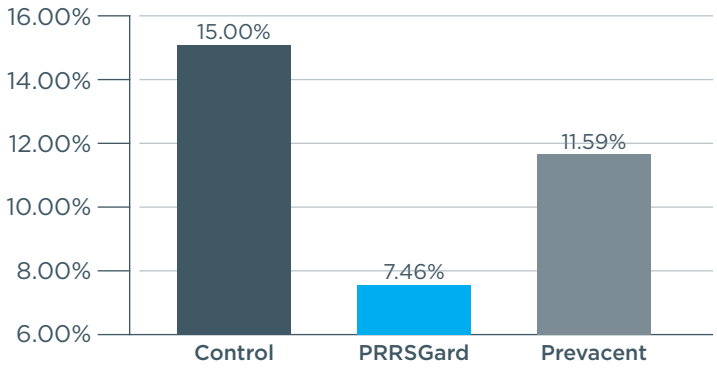


Figure 2

Percent Mortality after D35



This product has been shown to be effective for the vaccination of healthy swine, three weeks of age or older, against Porcine Reproductive & Respiratory Syndrome virus. Duration of immunity is unknown. For more information regarding efficacy and safety data, see productdata.aphis.usda.gov.

The vaccine has been shown to be effective against lung lesions due to Porcine Reproductive & Respiratory Syndrome Virus-associated pneumonia.

ADMINISTRATION AND DOSAGE: The desiccated vaccine is rehydrated with the accompanying liquid diluent, mixed well and used immediately. Dose: 1.0 ml intramuscularly (I.M.).

CAUTION: For animal use only. Do not mix with other products, except as specified on this label. Use entire contents upon opening. Store at 2 to 8°C (35°F to 45°F). Do not freeze. In case of human exposure, contact a physician. If anaphylaxis occurs, use epinephrine or equivalent. Inactivate unused contents before disposal. Do not vaccinate within 21 days before slaughter. Not for use in pregnant swine or boars. Vaccine virus may be shed and transmitted to other populations of swine in contact with vaccinated swine. The duration of potential vaccine virus transmission may vary. Use of the vaccine in herds intended to remain Porcine Reproductive & Respiratory Syndrome (PRRS) virus seronegative is contraindicated. Introduction of vaccinated pigs into herds intended to remain PRRS virus seronegative is contraindicated. The need for annual booster vaccinations has not been established for this product; consultation with a veterinarian is recommended. Product contains penicillin-G and streptomycin as preservatives.

Porcine Reproductive & Respiratory Syndrome Vaccine, Respiratory Form, Modified Live Virus

PRRSGard® | 250 DOSES

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Product No:
Serial No:
Exp. Date:

Manufactured by:
Pharmgate Biologics Inc
2575 University Avenue
West, Suite 100,
St. Paul, MN 55114
612-256-0930

VLN 329
PCN 19S1.R0

Visit USDA website for full label indications & technical information: **productdata.aphis.usda.gov**

[1] *Holtkamp, D. Growing losses from PRRSV cost pork producers $1.2 billion per year, new study shows. Iowa State University News Service. https://www.news.iastate.edu/news/2024/07/29/prrscost. Accessed: January 3 2025.*

[2] *PRRSGard®, Pharmgate Animal Health, Wilmington, NC. Label information.*

[3] *Prevacent® PRRSV, Elanco Animal Health, Greenfield, IN. Label information. https://farmanimal.elanco.com/us/products-services/swine/prevacent-prrs. Accessed January 3 2025.*

[4] *Smith, C.; Chamba, F.; Pittman, J.; et. al. Evaluation of the response to PRRSGard® administration in weaned pigs. 51st Annual Meeting of the American Association of Swine Veterinarians. March 7-10, 2020.*

[5] *Kettelkamp, E.; Betlach, A.; Yeske, P.; et al. Evaluation of airborne shedding and production setback post-weaning from Pharmgate PRRSGard® vaccine in commercial conditions. 54th Annual Meeting of the American Association of Swine Veterinarians. March 4-7, 2023.*

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