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Evaluation of the Efficacy of M+Pac® in One- and Two-Dose Regimens Against Competitor One-Dose Mycoplasma Hyopneumoniae Bacterins

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The objective of this study was to evaluate the efficacy of M+Pac when administered to seronegative pigs as either two 1-mL doses according to label, or as a single 2-mL dose product. For comparison, swine were also vaccinated with 2 competitor products currently licensed for administration as a single dose (Ingelvac® M.hyo¹ and RespiSure-ONE™²).

Vaccinates and nonvaccinated control pigs were challenged by intratracheal inoculation of 10 mL of a virulent *M. hyopneumoniae* culture 4 weeks after vaccination. Pigs were scored daily for cough, necropsied 30 days after challenge, and lungs scored for consolidation. Sera, collected pre-vaccination, pre-challenge, and at the time of necropsy, were tested for antibodies to *M. hyopneumoniae* by the Tween 20 ELISA (conducted at Dr. Eileen Thacker's laboratory, Iowa State University) and the DAKO ELISA.

The mean lung consolidation score in the nonvaccinated control group was 12.2%. All vaccinated groups had a significant reduction in lung lesions compared to the controls and there were no statistically significant differences between the lung scores of the vaccinated groups (Chart 1). For M+Pac 2-dose, the mean score of 2.78% represented a 77.1% reduction vs controls ($P = 0.007$) and for M+Pac 1-dose the mean score of 0.83% represented a 93.2% reduction vs controls ($P = 0.0006$). For Ingelvac M. hyo, the mean score of 2.57% represented a 78.9% reduction ($P = 0.0065$) and for RespiSure-ONE the mean score of 1.51% represented a 87.6% reduction ($P = 0.0015$).

All vaccinate groups, except for swine vaccinated with RespiSure-ONE, showed a high rate of seroconversion following vaccination (Chart 2). All vaccinate groups showed an anamnestic antibody response after challenge. The DAKO test was more sensitive at measuring *M. hyopneumoniae* antibodies post-vaccination and post-challenge than was the Tween 20 ELISA.

In this study, swine administered a single 2 mL dose of M+Pac had the lowest numerical lung

scores of any of the vaccinate groups. However, the lung scores of all vaccinate groups were significantly lower than the scores of the controls, and there were no significant differences between the single or two-dose vaccinate groups.

Chart 1

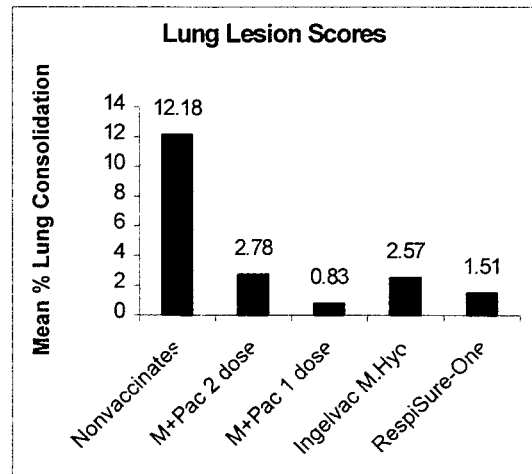
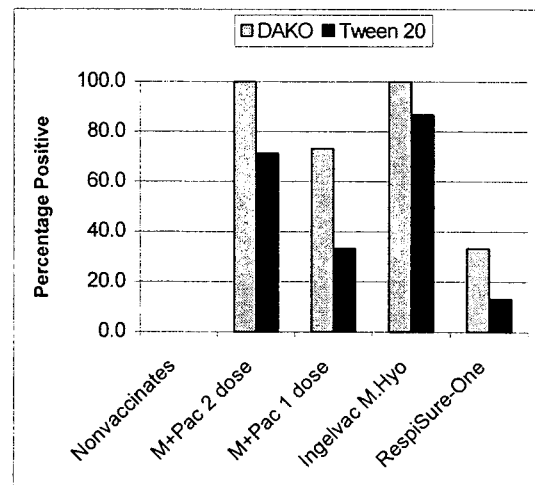


Chart 2



The authors acknowledge Dianne Sweeney, PhD, for the statistical analysis and Rebecca Fluckey, MS, and the staff at VRI for technical assistance.

¹ Boehringer-Ingelheim Vetmedica, Inc.

² Pfizer Animal Health