

Sponsors

University of Minnesota

College of Veterinary Medicine

College of Food, Agricultural and Natural Resource Sciences

Extension Service

Swine Center

Thank you to **IDEXX Laboratories** for their financial support to reproduce the conference proceeding book.

Production Assistant

Janice Storebo

Formatting

Tina Smith

CD-ROM

David Brown

Logo Design

Ruth Cronje, and Jan Swanson;
based on the original design by Dr. Robert Dunlop

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, or sexual orientation.

Comparison of 1 and 2 dose vaccination regimens using three currently licensed *Mycoplasma hyopneumoniae* vaccines in pigs

A Baysinger, D Polson, R Edler, R Philips, E Diaz
Boehringer Ingelheim Vetmedica Inc, St Joseph, MO

Introduction and Objectives

This study was performed as a randomized, negative-controlled, blinded laboratory trial to compare the efficacy of a recently licensed 1-dose M hyo vaccine (Ingelvac MycoFLEX[®], Boehringer Ingelheim Vetmedica, Inc.) compared with that of two commercially available vaccines (1 and 2 dose products).

Materials and Methods

Approximately 150 gestating gilts (all from a single breeding group week and previously M hyo-vaccinated) were blood sampled and screened on the Idexx HerdChek M hyo ELISA several weeks prior to farrowing. The 45 gilts with M hyo ELISA s/p ratios at or nearest to a s/p ratio of 0.70 (expected range of 0.40 to 1.0 s/p ratio) were identified and their piglets were included for the study. This range was used because it represents a typical sow herd M hyo serological distribution targeting the 50th to 75th percentile observed in the US swine industry.¹ Offspring were randomized at one week of age by sex using Excel. Pigs were weaned at 18 days of age and placed in growing pig facilities at the source farm/pre-challenge site until moved to the challenge site. Pigs were pre-medicated with tiamulin at the source/pre-challenge facility immediately prior to shipment to the challenge facility. the treatment group size (n = 50 per group) was derived from a power calculation using data from previous M hyo challenge studies and commercially available statistical software (Minitab[®] 14 for Windows[®]). A summary of the groups and treatments are shown in Table 1. All pigs were necropsied 28 days post-challenge and lung lesions scored using the standardized PigMON[®] protocol by two evaluators. In order to determine differences among treatment groups concerning the observed lung lesion scores multiple comparisons were conducted using pairwise Wilcoxon rank sum tests followed by a Bonferroni-Holm adjustment of the p-values to keep the overall significance level of 0.05.

Table 1. Study design

Group	Vaccine	Vaccination Regimen	Challenge (pig age)
1	NVC	NA	9 wks
2	RESPISURE [®] ONE (1 dose)	2 ml IM at 3 wks age	9 wks
3	Ingelvac MycoFLEX [®] (1 dose)	1 ml IM at 3 wks age	9 wks
4	RESPISURE [®] (2 dose)	2 ml IM at 7 days & 3 wks age	9 wks
5	NVNC	NA	NA

Results

Non-vaccinated challenged (NVC) pigs had significantly higher lung lesion scores than non-vaccinated non-challenged (NVNC) pigs validating the M hyo challenge model. RESPISURE[®] ONE scores were not significantly different from NVC scores. Ingelvac MycoFLEX[®] and RESPISURE[®] (2 dose) scores were significantly lower than NVC scores. NVNC scores were lower than all other groups (Table 2).

Table 2: Lung lesion scores

Group	Vaccination	Mean % Lung Lesion Scores	Median % Lung Lesion Scores	Median Comparison*
1	NVC	11.8	11.2	A
2	RESPISURE ONE (1 dose)	9.2	5.6	AB
3	Ingelvac MycoFLEX (1 dose)	6.7	3.5	BC
4	RESPISURE (2 dose)	4.9	1.9	C
5	NVNC	0.8	0.3	D

*Represents statistical significance of p <0.05 if letters are different.

Conclusions

Ingelvac MycoFLEX[®] provided significant protection against M hyo and was as effective as other well recognized commercial vaccines.

References

1. Unpublished data, BIVI.