

# EVALUATION OF TWO COMMERCIAL ONE-DOSE *MYCOPLASMA HYOPNEUMONIAE* (*M. hyo*) BACTERINS

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## Introduction

*M. hyo* causes a chronic pneumonia characterized by coughing, growth reduction, and reduced feed efficiency (1). Control of *M. hyo* is common through use of vaccination. Both single and double dose vaccination schedules have been used. Single dose vaccines provide additional economic benefits in the form of savings in labour and improved meat quality due to fewer injection sites. The objective of this study is to evaluate two commercial single-dose *M. hyo* bacterins in a commercial piggery.

## Materials and Methods

Sixty piglets, divided into 2 groups comprising 30 pigs each, were vaccinated at 3 weeks of age with vaccine X (a commercial one-shot *M. hyo* vaccine) and SPRINTVAC<sup>®</sup> MH, a new adjuvanted single dose vaccine. The pigs were weaned at 28 days.

Pigs were weighed and bled at the start of the experiment i.e. 3 weeks of age, and at 8 and 15 weeks after vaccination. Serology testing for *M. hyo* antibodies was conducted using the IDEXX ELISA test kit (HERDCHECK<sup>®</sup> *M. hyo*).

At the time of slaughter at 7 months, lungs were collected and examined for lesions according to a method previously described (2). The scores were recorded as 0 to 4, based on the percentage of consolidated lung lesions on the lobe surface. After examination of each lobe, the scores from each lobe were added to derive the total score for each of the lungs. The results of the trial were analyzed with T-test statistic.

## Results and Discussion

Eight weeks after the animals from both treatment groups had been vaccinated with *M. hyo* bacterins, none of the pigs from the Treatment X group had detectable antibody; whereas 26.6% of the pigs in the SPRINTVAC MH group were found positive for antibodies against *M. hyo*. Fifteen weeks after vaccination, 77% and 58% of the Treatment X and SPRINTVAC MH respectively were found seropositive for *M. hyo*. The results showed that the SPRINTVAC MH vaccinated group had earlier seroconversion. However, at 15 weeks, more pigs in the X group had antibodies to *M. hyo*. In the absence of non-vaccinated controls, it is unclear whether the antibodies at this stage are due to the vaccine or field exposure. However, the presence of more severe lung lesions in the X group, as discussed below, would appear to indicate that the antibodies were probably due to field infections.

The SPRINTVAC MH group was found to have lower lung lesion score as compared to Treatment X group (Table 1). Lungs from 6 pigs in the Treatment X group were found with total lung scores greater than 3, while all lungs from the pigs in the SPRINTVAC MH group had scores of less than or equal to 3. The total lobes score which describes the presence and severity of mycoplasma lesions were significantly lower ( $P < 0.05$ ) in the SPRINTVAC MH group as compared to Treatment X (Table 1).

**Table 1:** Total lobe scores and mean scores according to lung lobes

	Treatment SPRINTVAC Group	Treatment Vaccine X Group
	Total score according to each lobe	
Left Apical	4	9
Left Cardiac	9	17
Left Diaphragmatic	1	2
Right Apical	3	13
Right Cardiac	2	24
Right Diaphragmatic	2	1
Intermediate	6	4
<b>Total lobes score</b>	<b>26</b>	<b>76</b>
<b>Mean score per lung</b>	<b>0.69<sup>a</sup></b>	<b>2.38<sup>b</sup></b>

<sup>a,b</sup> Numbers with different superscripts in the same line are significantly different at  $p < 0.05$

## Conclusion

This study within the limits of the experimental design showed that the SPRINTVAC MH group was superior to Treatment X group in having significantly better lung lesion scores (lower mycoplasma lesions) and earlier seroconversion at 8 weeks.

There was no significant difference regarding average daily weight gain between both groups.

## References

1. Thacker E. L., *et al.*, (1999) Journal of Clinical Microbiology, 37: 620-627
2. Madec, F., *et al.*, (1982) Journées de la Recherche Porcine en France, p. 405

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<sup>®</sup> HERDCHECK is a registered trademark of IDEXX Laboratories, Inc. in the United Kingdom and elsewhere.