

Efficacy evaluation of a *Mycoplasma hyopneumoniae* bacterin in a mixture with a porcine circovirus type 2 vaccine

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Introduction and Objectives

Diseases associated with *Mycoplasma hyopneumoniae* (M hyo, enzootic pneumonia) and Porcine Circovirus Type 2 (PCV2) infections are a continual major concern in the swine industry. M hyo has also been implicated as one of the major co-factors in the development of PCVAD^{1,2}. The objective of this study was to evaluate the efficacy against a M. hyo challenge of a *Mycoplasma hyopneumoniae* bacterin and a Porcine Circovirus Type 2 vaccine when the monovalent USDA-licensed vaccines for the two agents are mixed and administered in a single combined injection.

Materials and Methods

The M hyo efficacy evaluation was performed in 62 conventional pigs, 18-19 pigs per vaccine and challenge control group and 6 pigs in the strict control group. Prior to study initiation, pigs were tested and determined to be seronegative by ELISA for antibodies to M hyo and PRRS virus. Pigs were also negative for PRRS virus by PCR.

At approximately 3 weeks of age, pigs were vaccinated with a single 1 mL dose of Ingelvac MycoFLEX[®] or a mixture containing Ingelvac MycoFLEX[®] and Ingelvac CircoFLEX[®] as a single 2 mL intramuscular dose. The vaccine treatment was obtained by mixing equal volumes of the individual monovalent products (each labeled as 1 mL/dose) and then administering the mixture as a 2 mL/dose. Animals were challenged with a virulent M hyo isolate 33 days after vaccination. Animals were necropsied 28 days after challenge and the lungs were removed and scored for consolidation consistent with M hyo infection.

Results

The primary criterion for protection against M hyo challenge was lung consolidation scores. Table 1 contains the lung lesion scores for the respective groups. Statistical significance was

determined by a Wilcoxon Rank Sum Analysis of lung scores for each group.

Table 1. Efficacy of Ingelvac MycoFLEX[®] as a monovalent vaccine and as a mixture with Ingelvac CircoFLEX[®].

Treatment group	N (pigs)	Average lung lesion score (% of lung)
Ingelvac MycoFLEX [®]	18	5.5 ^a
MycoFLEX [®] mixed with CircoFLEX [®]	19	3.9 ^a
Challenge Controls	19	14.3 ^b
Strict Controls	6	0.0

a,b: P < 0.0001

There were no injection sites or other adverse reactions that could be attributed to the monovalent vaccine or vaccine mixture.

Conclusions

The mixture of Ingelvac MycoFLEX[®] and Ingelvac CircoFLEX[®] delivered in a single 2 mL intramuscular injection was safe and efficacious against an M hyo challenge. The ability to mix these two monovalent products not only provides the needed protection against M hyo, it also decreases the number of injection sites and subsequent stress on pigs while decreasing the labor required to safely administer two separate vaccines.

References

1. Dorr, P et al. 2007. J Am. Vet. Med. Assoc. 230(2):244-250.
2. Opriessnig, T et al. 2004. Vet. Path 41:624-640.