

Willingness to approach behavior and feed disappearance of weaned pigs following vaccination with *Mycoplasma hyopneumoniae* vaccines

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Introduction and Objectives

The objective of this study was to determine if field observations of markedly reduced pig activity following vaccination with certain *Mycoplasma hyopneumoniae* vaccines could be confirmed and quantified by observing post-vaccinal pig behavior and feed disappearance.

Materials and Methods

Eighteen hundred thirty two (1832) weaned pigs 17-23 days of age were obtained from a PRRS and SIV-negative, *M. hyopneumoniae* positive production system. Pigs were blocked by subjective weight classification and allocated across 72 nursery pens. Two weeks post nursery placement, pigs were evaluated to determine willingness to approach and feed disappearance behavior pre- and post-vaccination. The SWAP swine behavior protocol¹ was utilized. After entering and kneeling down in a pen, the blinded observer counted all pigs that approached him during a 15 second period. The pigs approaching the observer during this period of time were designated as willing to approach. The initial (pre-vaccination) observation occurred at 1600 hours on the day prior to vaccination. Vaccination occurred the following morning (36 pens received Ingelvac MycoFLEX[®], Boehringer Ingelheim Vetmedica Inc, 36 pens received Respire[®]-One, Pfizer Animal Health) and was completed by 10:30 hours so that the 6 hour post-vaccination willingness to approach observation took place at 16:00 hours (24 hours after the pre-vaccination evaluation). The difference in these two values is reported here as a *decrease in % approachability*. Feeder (a pair of pens shared each fence line feeder) was the experimental unit (n=18 per treatment group). The willingness to approach data was analyzed utilizing the Pearson Chi-square test. Feed disappearance data were analyzed using one-way ANOVA having treatment, sex, and weight block as model effects. Results were considered significant when P values were ≤0.05.

Results

A significant decrease in post-vaccination willingness to approach was observed within both groups of pigs (P<0.0001). However, the decrease in willingness to approach was significantly less for the Ingelvac MycoFLEX[®] vaccinated pigs compared to the Respire[®]-One vaccinated pigs (11.38% vs 27.05%, P<0.0001, Table 1). The Ingelvac MycoFLEX[®] vaccinated pigs consumed significantly more feed through 24 and 48 hours post vaccination (Table 1).

Table 1. Willingness to approach and feed disappearance following vaccination.

Item	Ingelvac MycoFLEX [®]	Respire [®] -One	P value
Decrease % approach ^a (Δ)	11.38	27.05	<0.0001
0-24 hr feed use, kg/pig	0.982	0.813	<0.0001
0-48 hr feed use, kg/pig	2.02	1.83	0.0001

^a % approach = % pigs approaching observer within 15 seconds.

Conclusions

Both willingness to approach and feed consumption significantly decreased in pigs that received Respire[®]-One compared to Ingelvac MycoFLEX[®]. These findings suggest that willingness to approach and feed consumption may be useful parameters for assessing vaccine reactivity (side effects) in pigs. This study notably lacked the inclusion of a placebo-injected group to quantify responses attributable solely to the injection procedures.

References

1. National Pork Board. Swine Welfare Assurance Program 2003. Animal Observation :12-17. NPB, Des Moines, Iowa.