
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 conference proceedings

Production Assistants

Steven Claas

Michael Klatt

Layout and 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 humoral antibody titers following intramuscular or transcutaneous administration of Suvaxyn Mh One, a novel *Mycoplasma hyopneumoniae* vaccine
Johanne Elsener¹ DVM, MSc and Charles Surprenant² DVM
¹ Fort Dodge Animal Health , ² F. Ménard Inc.

Introduction : Swine producers are looking towards new methods of injection to produce needle-free meat products. The objective of this trial was to compare humoral antibody titers in pigs vaccinated Suvaxyn Mh One, a novel *Mycoplasma hyopneumoniae* vaccine, via the intramuscular or the transcutaneous route.

Materials and Methods :

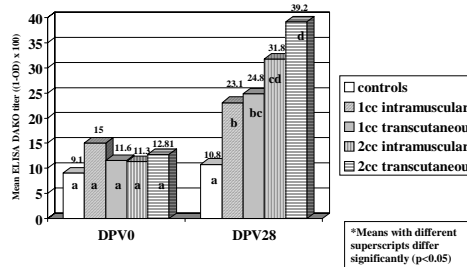
The trial was conducted in a commercial swine herd negative for *Mycoplasma hyopneumoniae*. Sixty pigs approximately 13 weeks of age, with low maternal antibody titers originating from dam vaccination, were randomly allocated to 5 treatment groups : Group 1: Unvaccinated controls, Group 2: Vaccinated with 1cc intramuscularly of Suvaxyn Mh One, Group 3: Vaccinated with 1 cc transcutaneously of Suvaxyn Mh One, Group 4: Vaccinated with 2 cc intramuscularly of Suvaxyn Mh One (label dose) and Group 5: Vaccinated with 2 cc transcutaneously of Suvaxyn Mh One. The gun model used for transcutaneous injections was the Pulse® 250. All pigs were bled at the time of vaccination (DPV0) and 28 days later (DPV28). Serum samples were assayed for antibody using the ELISA DAKO test (Biovet Inc.).

Results:

Results are shown in Figure 1. For the control group, there was no statistical increase of the average antibody titer **over time**, confirming the absence of *Mycoplasma hyopneumoniae* in this herd. There was no statistical difference between groups at the time of vaccination. Groups vaccinated with Suvaxyn Mh One had statistically significant higher post-vaccinal titers than the control group. The 2 cc dose groups stimulated statistically significant higher post-vaccinal titers than their 1cc counterparts. There were no statistical differences between the

transcutaneous groups and their intramuscular counterparts.

Figure 1. Comparison of post-vaccinal titers in pigs vaccinated intramuscularly vs. transcutaneously with Suvaxyn Mh One at different dose regimen



Discussion:

The humoral immune response stimulated by the transcutaneous injection of Suvaxyn Mh One was of the same magnitude as the **response stimulated by** intramuscular injection. Similar results have been shown in other studies using different vaccines.¹⁻² However, to confirm similar protection with Suvaxyn Mh One with the two techniques of injection, challenge studies should be done in pigs. Interestingly, there was a dose effect seen in the humoral response. Half label dose regimens were not as effective as their full dose counterparts in stimulating a humoral response.

Conclusion:

Although extra label, Suvaxyn Mh One injected via the transcutaneous route looks promising in vaccinating pigs to avoid the produce needle-free meat by-products.

References:

- Gergen et al, 2004. IPVS Proceedings, Paper 108.
- Thacker et al, 2004. IPVS Proceedings, Paper 548.