



Myco Shield™

Mycoplasma Hyopneumoniae Bacterin

For use in healthy swine, 2 weeks of age or older, as an aid in the prevention of pneumonia caused by *Mycoplasma hyopneumoniae*.

Product Numbers

Myco Shield™

#103 - 100 mL

#104 - 250 mL

■ Safe

Myco Shield is a clarified vaccine. Only the essential antigens are utilized to produce a safe, highly immunogenic product. In field trials, no side effects were observed in vaccinated pigs.

■ Effective

Lung lesions were dramatically reduced (5-8 times) in vaccinated pigs. Vaccinated pigs gained 15 pounds more by 155 days of age than did unvaccinated controls.

■ Convenient

The 1-mL dose provides ease of administration to small pigs. **Myco Shield** is approved for piglets 2 weeks of age or older, with a booster 14 days following the first dose.

■ Composition

This bacterin contains inactivated cultures of *Mycoplasma hyopneumoniae*.



Myco Shield™

DIRECTIONS: Shake well before using. Administer 1 mL intramuscularly. Revaccinate in 2 weeks.

PRECAUTIONS: Store out of direct sunlight at 2°-7° C (35°-45° F). DO NOT FREEZE. Use entire contents when first opened. Do not vaccinate within 21 days prior to slaughter. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains penicillin and thimerosal as preservatives.



Customer Service
(800) 843-3386

www.livestock.novartis.com

© 2007 Novartis Animal Health US, Inc.
Myco Shield is a trademark of Novartis AG.
4500025979a, AUG07



Technical disease information

Enzootic pneumonia of swine, caused by *Mycoplasma hyopneumoniae*, is a common disease with worldwide incidence. Slaughter checks have revealed evidence of the disease in 30-80 percent of the slaughter-weight swine in the United States.

Mycoplasma is a component of porcine respiratory disease complex (PRDC). Spreading within a herd often occurs from sows to their piglets, and then from piglet to piglet once litters are mixed together at weaning. Transmission requires direct contact with respiratory secretions from infected pigs, which contain high levels of organisms. There is also some evidence that airborne transmission may occur between farms within one mile of each other.

Clinical signs include a dry cough and are common in pigs 6 weeks of age or older. The disease has a slow onset with a long incubation period. It spreads slowly throughout the group of pigs. Uncomplicated *M. hyopneumoniae* infections show a high morbidity, but low to no mortality. Often, the only clinical sign will be a chronic, non-productive cough in pigs with an “unthrifty” appearance. Since affected pigs will show decreased rates of gain and a decreased feed conversion ratio because of chronic pneumonia, potential losses are evident in lower revenue and higher feed costs.

Mycoplasma infections frequently occur concurrently with other bacteria, viruses, *Mycoplasmas* and migrating parasites. Unfortunately for swine producers, almost all *M. hyopneumoniae* infections are complicated by secondary bacterial pneumonias, which can result in high death losses and severe economic hardship. *Mycoplasma* infection predisposes pigs to *Pasteurella* and *Actinobacillus pleuropneumoniae*, both of which can add significantly to losses in performance and net profit. Often changes in weather or other stresses will precipitate severe pneumonia in these mixed infections. Severe disease is often due to a complex interaction between *Mycoplasma*, bacteria, viruses such as SIV and PRRSV, a poor environment and sub-optimal management levels.

On postmortem, lungs of pigs with *M. hyopneumoniae* infections will show purple to gray areas of “meaty” consolidation, almost always in the cranio-ventral portions of the lungs. Lesions are usually clearly demarcated from surrounding areas of the normal lung. Uncomplicated *Mycoplasma* pneumonia is not common and most pigs suffer from severe, mixed infections.

Diagnosis is based on a combination of clinical signs, postmortem lesions, histopathology, serology and other laboratory tests, such as fluorescent antibody staining, PCR and immunohistochemistry (IHC) of affected lung tissue. Diagnosis by culturing the organism is unreliable, since *M. hyopneumoniae* is extremely difficult to culture even from known infected lungs. Differential diagnosis must include swine influenza, bacterial pneumonias, and parasites such as ascarids and lungworms.

Trial Data:

Weight Gain

	Avg. wt. 5 days	Avg. wt. 83 days	Avg. wt. 155 days
Myco Shield vaccinates	5.78 lbs.	66 lbs.	195.3 lbs.
Controls	5.94 lbs.	62 lbs.	179.7 lbs.
Wt. gain advantage of vaccinates	-.16 lbs.	+4 lbs.	+15.6 lbs.

Piglets from 20 litters were divided evenly between vaccinate and control groups. Vaccinates were inoculated with two doses of **Myco Shield** and weights were taken at 5 days of age, 83 days of age, and 155 days of age. Vaccinates, even though they were lighter at 5 days of age, showed significant weight gain advantages at both 83 days of age and 155 days of age.¹

Vaccination and Challenge

Trial #1

	Nr.	Avg. % Lung Consolidation
Vaccinates	20	1.85%
Controls	10	10.9%

All pigs were challenged with *M. hyopneumoniae* on four different occasions beginning three weeks after the second dose of **Myco Shield**. Pigs were necropsied 9 weeks post-challenge, at which time lung consolidation scores were measured. Pigs from the vaccinated group showed statistically significant reductions in the degree of lung lesions present.¹

Trial #2

	Nr.	Avg. % Lung Consolidation
Vaccinates	10	1.2%
Controls	10	10.4%

(P=0.0001)

Pigs in each group were challenged and lung lesion scores were subsequently measured. In addition, attempts were made to isolate *M. hyopneumoniae* from both vaccinates and controls. Isolation was successful in only one of the vaccinates (10%) vs. five of the controls (50%), indicating the effectiveness of vaccinating with **Myco Shield**.¹

Various antibiotics have been used to treat *Mycoplasma* infections. Vaccination or vaccination and medication should be considered in controlling *Mycoplasma* pneumonia. Prevention of the disease involves maintaining an optimum environment and a strict all-in/all-out program to minimize pig-to-pig spread of the disease.

The final step to preventing *Mycoplasma* problems involves incorporating a vaccination program into the management system. Vaccination has been shown to greatly reduce both the severity of disease and the economic losses associated with *M. hyopneumoniae* infections. **Myco Shield** is a convenient 1-mL dose vaccine that can be given to any pig 2 weeks of age or older. Revaccination with a booster dose in two weeks produces elevated and extended immunity to help prevent the potentially devastating effects of *M. hyopneumoniae* infections.

1. Data on file at Novartis Animal Health US, Inc.