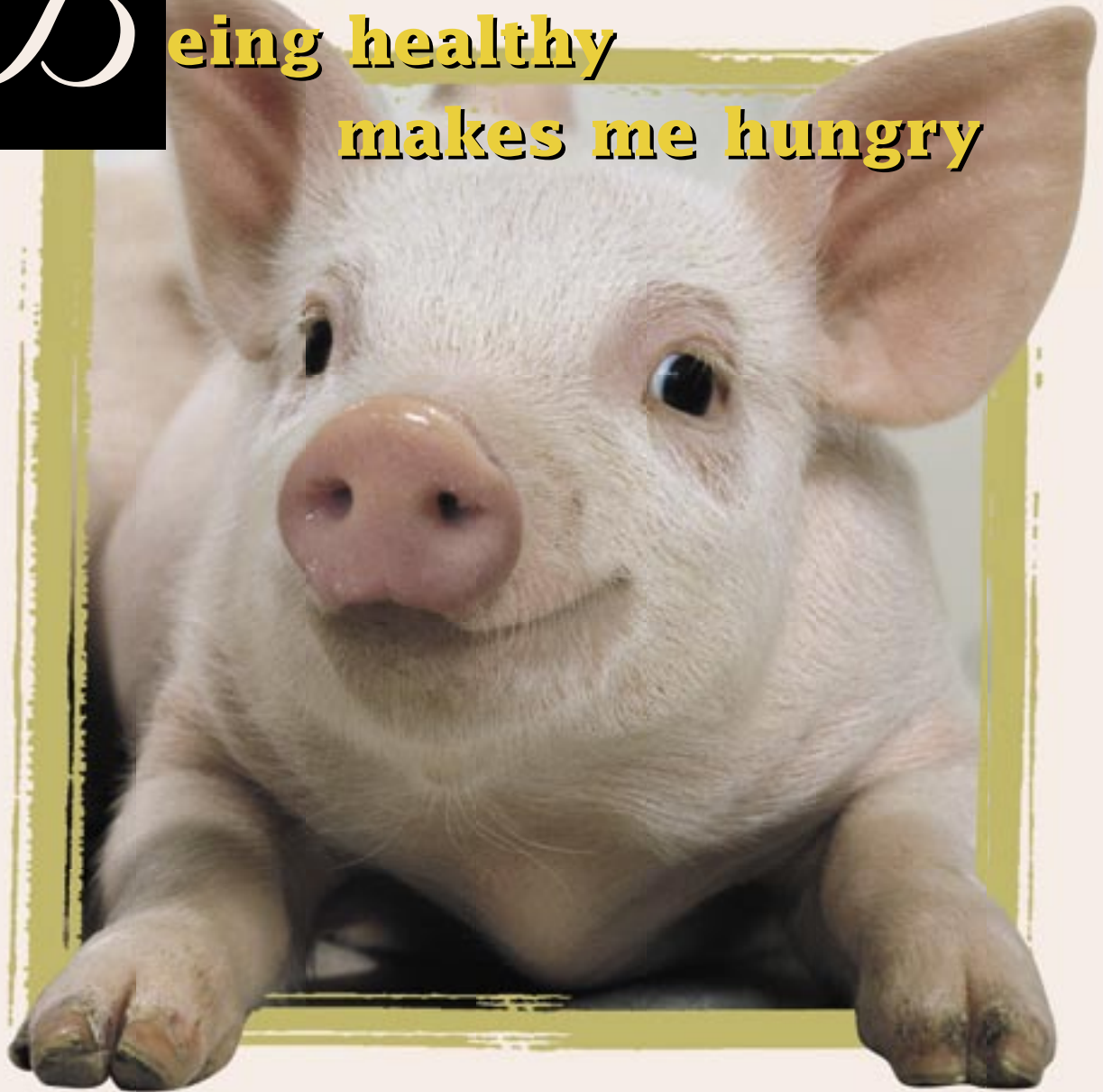


Porcilis[®] M Hyo

B

**eing healthy
makes me hungry**



The M. hyo vaccine that protects
your profits, too

B

eing healthy makes me hungry.

To perform well, pigs need to be greedy.

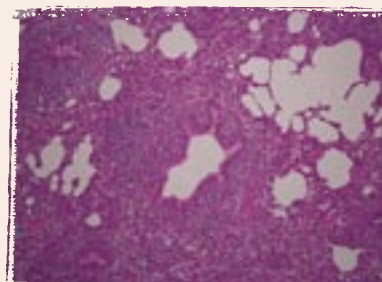
But pigs with respiratory disease often don't eat as well as they should.

The role of *M. hyopneumoniae* infection in PRDC

Mycoplasma hyopneumoniae is one of the most important contributors to respiratory diseases in pigs. It interacts with other infections, damaging the cilia and epithelia of the airways of the lower respiratory tract, making the invasion by other pathogens easier. Viral infection can complicate the picture even further. PRRS-virus is known to aggravate *M. hyopneumoniae* infection. And both pathogens interact with the host's immune system. Only a few reasons why *M. hyopneumoniae* is such an important trigger for Porcine Respiratory Disease Complex (PRDC).



Macroscopic *M. hyopneumoniae* lesion



Microscopic *M. hyopneumoniae* lesion

Diagnosing *M. hyopneumoniae* infection

Diagnosis of *M. hyopneumoniae* infection is based on:

- Clinical signs such as chronic non-productive coughing
- Lung lesions at necropsy
 - Lung lesions at necropsy are meat-like and purple-grey in colour. Typically they can be seen in the cranio-ventral regions of the lungs, though Influenza virus can cause similar lesions.
- Laboratory tests
 - ELISAs are often used to detect antibodies, their limitation being that antibodies may take up to 6 weeks before they appear.
 - PCR testing is performed on lung tissue or washings to demonstrate the *M. hyopneumoniae* antigen itself.
 - Histological examination of lung tissue can be useful, revealing alveolar inflammation and peribronchiolar accumulations of lymphocytes.

For a proper diagnose of a *M. hyopneumoniae* infection a combination of different diagnostic approaches is advised.

Treatment and prevention of *M. hyopneumoniae* infection

- Prevention depends a lot on good management – attention to air quality, ventilation, temperature and stocking density. Measures such as age segregation and a strict all-in-all-out policy are also very important.
- Antibiotics are also used in the treatment and prevention of *M. hyopneumoniae* infections, but timing is a real problem. Treating too late or too early is ineffective, so it often needs to be continued over an extended period.
- Vaccination of piglets before the infection occurs can be an efficient strategy for preventing damage from *M. hyopneumoniae* infections.

Vaccination is a strategic approach to controlling PRDC problems.

Porcilis M Hyo safety

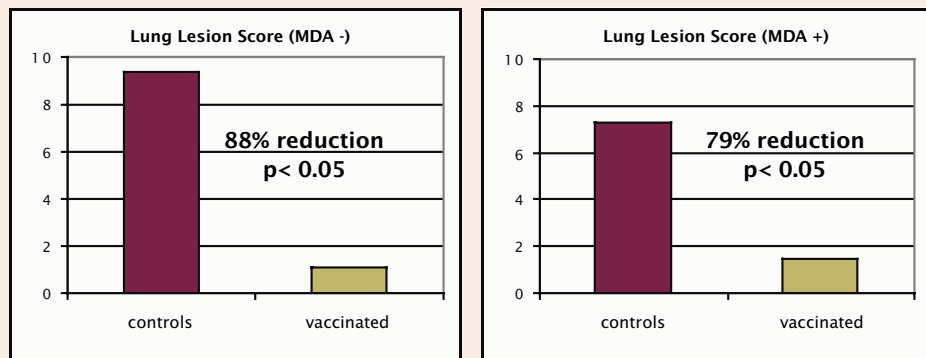
Standard safety trials were performed to test Porcilis M Hyo.

Only a minor transient temperature increase after vaccination which was only significant after the first dose appeared. For all other parameters like Average Daily Gain, abnormal systemic or local reactions, no negative effects were observed.

Porcilis M Hyo onset of immunity

- **Significant reduction in lung lesions in the vaccinated groups versus controls.**
- **Excellent immunity 2 weeks after second dose.**
- **No difference in onset of immunity between MDA- and MDA+ animals.**

Fig. 1:
results of onset of immunity trials (both in MDA- and MDA+ animals).
Vaccination:
at 1 and 4 weeks of age.
Challenge:
at 6 weeks of age.



Porcilis M Hyo duration of immunity

- **Significant reduction of lung lesions in the vaccinated groups versus controls.**
- **Immunity lasts at least until 20 weeks after second dose.**
- **No difference in duration of immunity results between MDA- and MDA+ animals.**

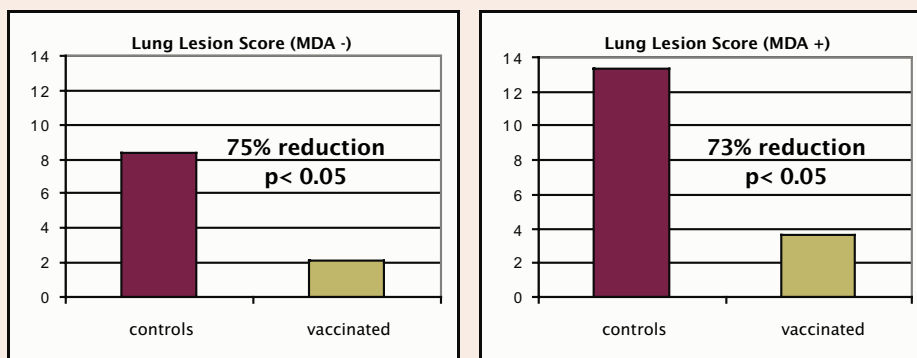


Fig. 2:
Results from duration of immunity trials (both in MDA- and MDA+ animals).
Vaccination:
at 1 and 4 or 2 and 5 weeks of age.
Challenge:
at 24 weeks of age.

Porcilis M Hyo field trials

- **Significant reduction of lung lesions in the vaccinated groups versus controls even on farms with a low *M. hyo* field challenge.**
- **Significant improvement of ADG on the farms with normal *M. hyo* field challenge.**
- **Tendency of improved ADG on the farms with low *M. hyo* field challenge.**

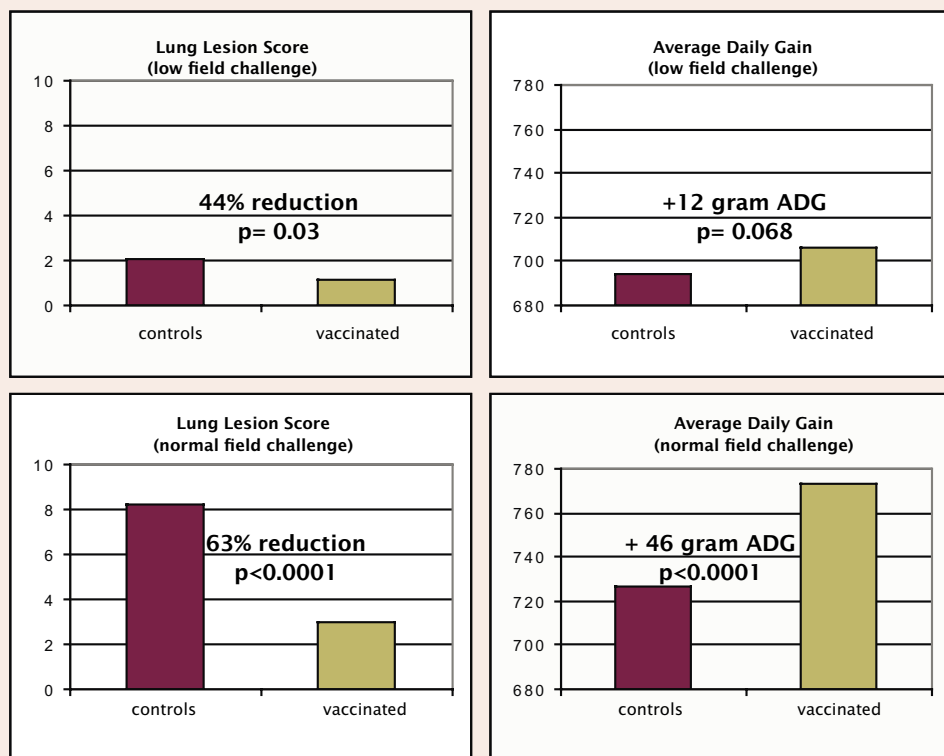


Fig. 3: Results from field trials performed in herds with a low field challenge¹⁾ and on farms with normal field challenge²⁾ of *M. hyopneumoniae*. Vaccination: at 1 and 4 weeks of age.

***Porcilis M Hyo.....
.....rapid onset of immunity and
significant protection up until slaughter***

Diluvac Forte, a unique adjuvant

Diluvac Forte, a unique, patented dl- α -tocopherol (vitamin E) based formulation was specially developed for the Intervet pig range to:

- Increase stimulation of both T- and B-lymphocytes.
- Increase phagocytosis.
- Protect the immune cells from critical damage by peroxidases.

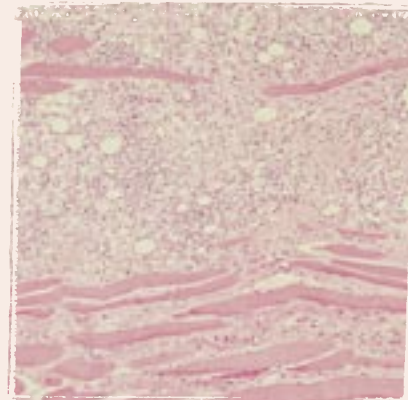
By incorporating vitamin E into the adjuvant, these effects at the vaccination site result in a prolonged and enhanced immune response.

Furthermore, Diluvac Forte is very tissue tolerant, with no reaction at the injection site.

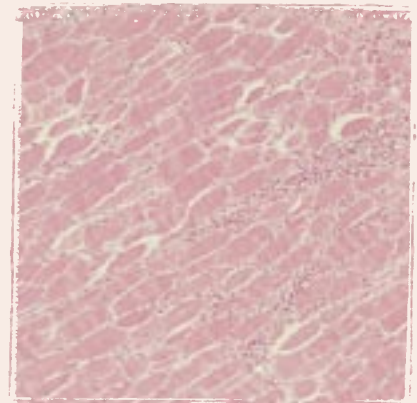
The aqueous formulation means a vaccine with:

- Low viscosity and excellent syringeability, even at low temperatures.
- No foaming.
- Easy to clean equipment.

For these reasons Diluvac Forte is the standard choice of adjuvant for Intervet's pig vaccine range.



Histology of muscle tissue
14 days after mineral oil adjuvant application



Histology of muscle tissue
14 days after Diluvac Forte application

The first step in a new approach to controlling PRDC

The addition of Porcilis M Hyo to the portfolio is a further expansion of Intervet's wide range of respiratory vaccines.

The current range of products:

- Porcilis M Hyo: An effective vaccine against *M. hyopneumoniae* with no interference by MDA
- Porcilis PRRS: A PRRSV live vaccine based on a EU strain to protect against the economic losses of a PRRSV infection
- Porcilis APP: A *A. pleuropneumoniae* subunit vaccine containing APXI, APXII, APXIII and OMP antigens offering broad protection
- Porcilis Glässer: The *H. parasuis* vaccine with proven efficacy against the most important serotypes
- Porcilis Begonia: An ultimate weapon in the control of Aujeszky's Disease Virus
- Porcilis AR-T: A highly effective vaccine containing *P. multocida* Non-toxic toxoid and *B. bronchiseptica* antigens.

Intervet's wide range of very effective vaccines to help you control PRDC

Solid protection against *M. hyopneumoniae* infections

Both laboratory trials and field trials demonstrate solid protection against *M. hyopneumoniae* infections.

Onset of immunity:

- From 2 weeks after second vaccination.

Duration of immunity:

- At least until 20 weeks after second dose.
- Significant reduction in pulmonary lesions due to *M. hyopneumoniae* infection, even on farms with a low *M. hyopneumoniae* challenge.
- Consistently improved weight gain during the fattening period, even on farms with a low *M. hyopneumoniae* challenge.

No interference by MDA

Trial data indicate that the efficacy of Porcilis M Hyo is not affected by the presence of maternal antibodies at the time of vaccination because:

- All field trials involving the vaccination of MDA+ pigs resulted in a significant reduction in lung lesions and a consistently improved weight gain during the fattening period.
- Results of vaccination/challenge studies were the same whether MDA present or not.
- There is no correlation between MDA levels at vaccination and the efficacy of Porcilis M Hyo.

Diluvac Forte Adjuvanted

Porcilis M Hyo is adjuvanted with Diluvac Forte resulting in:

- Prolonged and enhanced immune response.
- No tissue damage at injection site.
- Ease of use.

Porcilis[®] M Hyo
PRDC control starts here!

Porcilis[®] M Hyo

The M. hyo vaccine

that protects your profits, too

Active ingredients

Inactivated whole-cell concentrate of *Mycoplasma hyopneumoniae* strain 11 incorporated in an adjuvant based on dl- α -tocopherol acetate (Diluvac Forte) to prolong immune stimulation. Each dose contains $\geq 2^{7.0}$ Ab titre*.

* Mean antibody titre (Ab) obtained after inoculation of mice with a 1/20th of a pig dose.

Indication

For the active immunisation of (finishing) pigs to reduce pulmonary lesions due to infection by *Mycoplasma hyopneumoniae*.

Vaccination programme

Two doses with a three week interval between, beginning as early as 1 week of age.

Immunity

Onset of immunity: 2 weeks after the second dose.

Duration of immunity: At least 20 weeks after the second dose.

Dosage and method of administration

Each dose: 2ml by intramuscular injection in the neck, behind the ear.

Pharmaceutical precautions

Store between +2°C and +8°C. Do not freeze.

Allow the vaccine to reach room temperature (15-25°C) before use.

Shake well before use.

Presentation

Porcilis M Hyo is available in 10, 50 and 100 dose presentations.

Not all pack sizes may be marketed in all countries.

1) Bouwkamp FT, et al. A field efficacy trial of Porcilis M Hyo in fattening pigs in The Netherlands. Proceedings 18th IPVS congress Hamburg 2004 Vol 1 p 188.

2) Tzivara A, et al. Field evaluation of the efficacy of an inactivated vaccine (Porcilis M Hyo) for the control of enzootic pneumoniae in *Mycoplasma hyopneumoniae*-infected pig units. Proceedings 18th IPVS congress Hamburg 2004 Vol 1 p 389.

