The NEW vaccine against Swine Erysipelas and Porcine Parvovirus infection

A powerful immunity you can rely on
Erysipelothrix rhusiopathiae can be found on most pig farms: it causes Swine Erysipelas, a worldwide disease that has an important economic impact.¹

Swine Erysipelas has different clinical presentations and is capable of affecting all stages of pig production.²

- Joint infection
- Arthritis
- Chronic lameness
- Acute death
- Pyrexia ≥ 40-42°C
- Abortions
- "Diamond-skin" lesions
- Poor growth
- Decreased carcass value
- Reproductive losses
- Production losses
- Decreased economic performance

E. rhusiopathiae is zoonotic²

Gilt and sow vaccination is essential for controlling Swine Erysipelas.

Characteristic skin lesions in a pig infected with E. rhusiopathiae.
Porcine Parvovirus infection

Porcine Parvovirus (PPV) has spread worldwide and is endemic in most swine herds.³

An acute outbreak of disease in a non-vaccinated herd can cause devastating reproductive losses:

- **Infertility** due to resorptions in early gestation stages.
- **Smaller litter sizes** associated with embryo loss before 35 days of gestation.
- Increased number of **mummified foetuses**.
- Increased number of **stillbirths**.
- Increase in **low birth weight piglets**.
- Decreased **farrowing rate**.

Consequences of PPV infection according to gestation time (adapted from Diseases of Swine, 10th edition)

Maternal reproductive failure is the major and only well-established clinical sign of PPV infection.³
Exceptional efficacy against **Swine Erysipelas** thanks to two main components:

- A **highly immunogenic antigen**. Its quality could be related to the presence of the cell surface **spa A** protein of *E. rhusiopathiae*:
  - Responsible for inducing the **production of highly protective antibodies**.\(^2\)
  - Considered to be the **major immunizing antigen** of *E. rhusiopathiae*.\(^2\)

- **Hipramune®** **G**, a powerful adjuvant that enhances the duration of immunity against *E. rhusiopathiae*: **6 months** after primary vaccination.

**Effectively protects sows and gilts against Porcine Parvovirus** and also their progenie against transplacental infection.

The immunity conferred by Eryseng® Parvo covers the entire gestation period\(^5,6\):

- Females reach **high PPV specific HI antibody titres**.
- **Foetuses protected** against PPV infection.
- **Reduced reproductive losses**:
  - Infertility.
  - % abnormal foetuses.
- **Improved litter size**: more total piglets born and total piglets born alive.
HIPRAMUNE® $G^d$ is a state-of-the-art aqueous adjuvant developed by HIPRA based on GINSENG saponins with known immunological properties.

Promotes antigen particulation increasing its availability.\(^8\)

Activates mixed cellular and humoral immune responses.\(^7\)

Improves antibody production.\(^7\)

Stimulates the production and maturation of antigen presenting cells (APCs) such as dendritic cells and macrophages.\(^7\)

HIPRAmune\textsuperscript{\textregistered} $G^d$ enhances animals’ antigen presentation process:

- An increase in the number of APCs and the amount of antigen on their surface is one of the keys in the ability of adjuvants to increase the effectiveness of vaccines.\(^9\)
A study was performed to compare the humoral immune responses elicited in naïve pigs against *E. rhusiopathiae* by three different inactivated bivalent Porcine virus (PPV) and *E. rhusiopathiae* vaccines.\(^{10,11}\)

- **Vaccine A** was ERYSENG\(^{TM}\) PARVO.
- **Vaccine B** was a commercially available vaccine adjuvanted with aluminium hydroxide.
- **Vaccine C** was a commercially available vaccine adjuvanted with dl-α-tocopherol acetate.

### Results

#### 1. Humoral immune response\(^{10}\)

**Mean antibody levels against E. rhusiopathiae**

The humoral immune response against *E. rhusiopathiae* in the group of animals vaccinated with **Hipramune®Gd** is faster, higher and lasts longer.

An immunological study was conducted to investigate the action of Hipramune\(^{\circledR}\) G\(^d\) on the length of seroconversion against *E. rhusiopathiae*.\(^4\)

- Gilts were vaccinated twice intramuscularly with a 2 ml dose three weeks apart against *E. rhusiopathiae* with one of the following formulations: aluminium hydroxide (group A), Hipramune\(^{\circledR}\) G\(^d\) (group B) and PBS as a negative control (group C).

* Vaccines from groups A and B contained the same concentration of *E. rhusiopathiae* antigen with different adjuvants.
against clinical signs of Swine Erysipelas

2. Body temperature after challenge

- **Average body temperature (°C) post-challenge**

  - Graph showing temperature over study days for different groups:
    - **Eryseng® Parvo**
    - Group B
    - Group C
    - Placebo

  - Statistically significant differences within the same day (Anova 1F; p<0.05).

3. Skin lesions after challenge

- **Serotype 1** strain: affected animals (%)
- **Serotype 2** strain: affected animals (%)

  - Graph showing percentage of affected animals for different groups:
    - **Eryseng® Parvo**
    - Group B
    - Group C
    - Placebo

  - Statistically significant differences with the placebo group (Anova 1F; p<0.05).

The humoral immune response against *E. rhusiopathiae* in the group of animals vaccinated with vaccine containing HIPRAMEUNE is faster and longer.
A NEW vaccine for the breeding herd

Highly-protective and long-lasting immunity

Reduction of Swine Erysipelas clinical signs

Effective protection against Porcine Parvovirus infection

Basic vaccination. Sows and gilts which have not been previously vaccinated

Re vaccination.

1st dose

2nd dose

6 - 8 weeks before AI

3 - 4 weeks before AI

ARTIFICIAL INSEMINATION

2.3 weeks before AI

ARTIFICIAL INSEMINATION

References: