

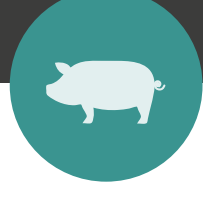
Safety and efficacy of intradermal versus intramuscular vaccination

Against *Mycoplasma hyopneumoniae*

Both IM and ID vaccination are supposed to induce comparable protection against different pathogens.

Aim of the study: To assess the safety and efficacy of the ID one-shot vaccine Porcilis M Hyo ID ONCE in comparison to the IM one-shot vaccine M+PAC in a farrow-to-finish herd with respiratory disease due to *M. hyopneumoniae* infection

Study design



420 weaned piglets were randomly assigned to three treatment groups:

- Intradermal vaccination V1 (n=138)
- Intramuscular vaccination V2 (n=144)
- Unvaccinated control group CG (n=138).

As safety parameters (clinical observations): local injection site reactions (ISR) and rectal temperatures were assessed.

As efficacy parameters: average daily weight gain (ADWG) and pneumonic lung lesions (LL) were measured .

Results

- After both vaccinations, **no adverse impact on appetite was observed** and mean rectal temperatures remained within physiological range.
- More animals** of V1 had firmer ISRs compared with V2 one day after vaccination (P=0.017). **After seven days**, ISRs were observed more frequently (P<0.001) in V1 compared with V2.

- V2 group animals **seroconverted after vaccination** (fig 1).
- Four weeks postvaccination, **74% of the V2 animals and 12% of the V1 animals** were seropositive.
- None of the non-vaccinated animals was seropositive **4- and 12-weeks post-injection**.
- At **4- and 12-weeks post-vaccination**, significantly (P<0.001) more V2 animals were seropositive than V1 and CG.

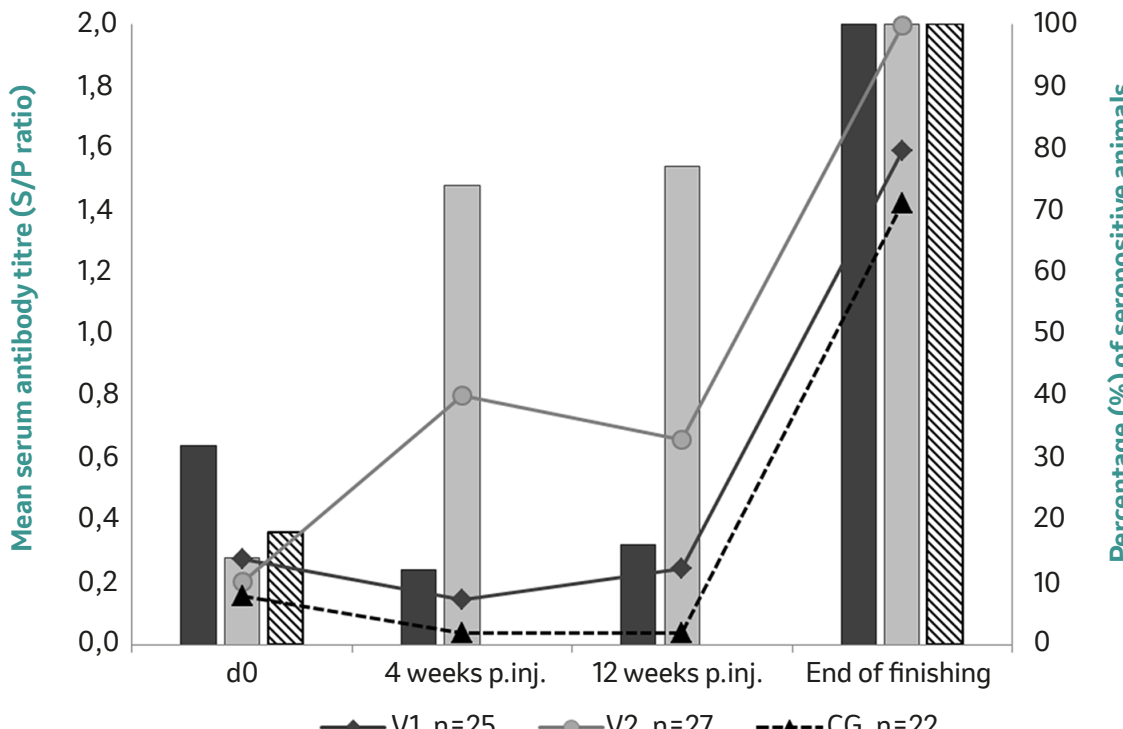


FIG 1: Comparison of *M. hyopneumoniae* antibody titre (line chart) and the percentage of seropositive pigs (bar chart) between V1, V2 and CG during the study period.

ADWG during the fattening period was significantly higher in vaccinated groups (V1: 913.4 g, V2: 924.5 g) compared with CG (875.6 g). No differences in ADWG were observed between V1 and V2.

Vaccinated pigs had a significantly reduced mean extent of LL compared with CG.

Number of animals with pneumonic lung lesions at slaughter and mean extent of lung lesions by study group.

Number of pigs		Mean extent of pneumonic lung lesions (%)		Lung lesion category		
Study group	n	SD	SD	0%	>0%-5%	>5%
				n / %	n / %	n / %
V1	128	2.51 ^a	±9.34	40 (31.3%) ^a	78 (60.9%) ^a	10 (7.8%) ^a
V2	137	3.72 ^b	±13.10	22 (16.1%) ^b	103 (75.2%) ^b	12 (8.8%) ^a
CG	130	4.27 ^c	±9.93	10 (7.7%) ^c	95 (73.1%)	25 (19.2%) ^b

Values with different letters within a same column are significantly different; p<0.005

Keypoints

01 In this study, intradermal or intramuscular vaccination of piglets against *M. hyopneumoniae* significantly improved daily weight gains over the finishing period.

02 The intradermal vaccination with Porcilis M Hyo ID ONCE resulted in a significantly reduced extent of pneumonic lung lesions compared with non-vaccinated animals.

Needle-free intradermal vaccination is safe and efficacious in reducing both the prevalence and extent of lung lesions, as well as in improving performance parameters, in a farrow-to-finish farm with a late onset of *M. hyopneumoniae* infection

Ref.: Beffort L. et al. Field study on the safety and efficacy of intradermal versus intramuscular vaccination against *Mycoplasma hyopneumoniae*. Veterinary Record. 2017.

