



LAWSONIA INTRACELLULARIS THE INVISIBLE ENEMY THAT HIDES YOUR FARM'S TRUE POTENTIAL



More info at www.lawsonia.net



WHAT IS ILEITIS?

Ileitis is the common name of Porcine Proliferative Enteropathy (PPE):

- Enteropathy, because it affects the intestines.
- Proliferative, because it causes the proliferation of the immature cells in the intestinal crypts (enterocytes).

It is caused by Lawsonia intracellularis. It affects a number of animal species.

Present throughout the world, in 3 different forms.



ACUTE FORM: 4 to 12 month old pigs

- Acute haemorrhagic syndrome¹ (PHE and NE).
- High mortality.
- It mainly affects replacement gilts and fattening pigs approaching slaughter age.



SUBCLINICAL FORM: late nursery stage²

- Without evident diarrhoea.
- Decrease in the growth rate (worse FCR and ADWG).
- It appears sooner in Europe than in America³, during the period just after weaning.

CHRONIC FORM: 6 to 20 week old pigs⁴

- Porcine Intestinal Adenomatosis (PIA), diarrhoea (7-10 days), after which most of the pigs recover.
- Lack of homogeneity in pig batches.

The most common form



		1 DE
CR	HP*	92%
qP(WHP*	30%
SA	HP*	100%
EL	WHP*	32%
		*HP: He



Between 80-100% of European farms are infected with Lawsonia intracellularis

High presence of *Lawsonia intracellularis* in **faeces**. The **viral load** can **vary** depending on the age group or the country.





PREVALENCE OF ILEITIS⁵



ECONOMIC IMPACT

The main source of economic loss comes from production losses.

Increase in growth differences \rightarrow uneven batches \rightarrow greater costs.

The estimated loss per commercialised pig in the USA fluctuates between US\$5.98 and US\$16.94.⁶



The cost of ileitis causes losses between £2 million and £4 million per year in the UK.⁹





PORCILIS® Lawsonia SUSTAINABLE EFFORTLESS EFFICACY

TURN AN INVISIBLE ENEMY INTO A VISIBLE PROFIT

Porcilis Lawsonia is the 1st ever injectable vaccine in Europe to control Lawsonia Intracellularis.



PROVEN TO:

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- REDUCE LOSS OF AVERAGE DAILY WEIGHT
- REDUCE MORTALITY
- REDUCE BACTERIAL SHEDDING
- REDUCE DIARRHOEA AND INTESTINAL LESIONS



Turn an invisible enemy into a visible profit

Injectable vaccine for the control of ileitis in individual pigs.



- Ready to use in a single step.
- There is no need to use water.
- It guarantees that **each** animal receives the exact dose (2 ml).



• 21 weeks of immunity, protecting the pigs throughout the fattening stage.



Killed vaccine with maximum flexibility of use:

- Reducing the use of antibiotics.
- No interference with feed, water chlorination, antibiotics, etc.
- It can be reconstituted with **Porcilis PCV M hyo.**





The final result is improved production performance.



A highly protective Vaccine

This study consisted of two parts:



• Group 3: Unvaccinated controls

	Trial 1 Trial 2 Vacc. 4w Vacc. 4w	Trial 3 Vacc. 5w		
G 1	PL + Emunade 2ml	PL + Porcilis PCV M Hyo 2ml		
G2	Oral Vacc. 2ml	Oral Vacc. x5w PCV2-M Hyo combo x3w		
G3	Unvaccinated			

Results:

Post-challenge results \pm SD of vaccination-challenge trials 1, 2 and 3.

V	accine group	Avg clinical score ^c / day 13-20	ADWG g/day / day 13-20	PCR faeces avg log pg DNA/µl / day 21	PCR mucosa avg log pg DNA/μl / day 21
Trial 1	PL + Emunade	$0.3 \pm 1.2^{\circ}$	935 ± 306 ^{de}	0.23 ± 0.64	0.18 ± 0.43 °
	Oral vaccine	0.9 \pm 2.3 ^{\epsilon}	655 ± 385	0.60 ± 0.82	0.66 ± 0.84
	Control	4.4 \pm 6.5	550 ± 460	0.34 ± 0.62	0.57 ± 0.56
Trial 2	PL + Emunade	3.0 ± 5.5	649 ± 75 1 ⁴ °	0.27 ± 0.54	0.71 ± 0.76 ^a
	Oral vaccine	2.8 ± 5.8	-229 ± 1301	0.11 ± 0.38	1.05 ± 0.84
	Control	5.7 ± 5.5	-655 ± 723	0.46 ± 0.70	1.36 ± 0.57
Trial 3	PL + PCV M Hyo ^a	1.5 ± 2.6	1012 ± 302 ^{4,e}	1.37 ± 1.17 ^{de}	1.10 ± 0.42
	Oral vaccine ^b	3.9 ± 4.4 ^e	549 ± 597	2.43 ± 0.98	1.10 ± 0.51
	Control	1.0 ± 2.9	537 ± 627	2.47 ± 0.78	1.06 ± 0.49

The benefits of Porcilis Lawsonia are:

Daily weight gain.



Lawsonia intracellularis shedding.

Clinical scores.



Macroscopic as well as microscopic ileum lesion scores.

^a Porcilis PCV M Hyo. ^b Commercially available PCV M Hyo vaccine also applied. ^c Diarrhoea scoring. ^d p < 0.05 vs control. ^e p > 0.05 vs live vaccine. *The pigs were challenged with virulent Lawsonia intracellularis (orally, homogenised Ll infected intestinal mucosa). Trial 1: 4 weeks after vaccination. Trial 2: 17 weeks after vaccination. Trial 3: 3 weeks after last vaccination



Porcilis[®] Lawsonia, either as a standalone treatment or used by mixing it with Porcilis[®] PCV M Hyo, induced a statistically significant protection against an experimental infection with Lawsonia intracellularis.

* In the control group 11 animals died or were culled due to acute ileitis. ** Compared with the year preceding the study. If the whole herd had been vaccinated, the improvement of the key production parameters would likely.

Porcilis[®] Lawsonia reduces the losses caused by ileitis in pigs.



¹ McOrist & Gebhart, 2012.

² Paradis M.A., McKay R.I., Wilson J.B., Vessie G.H., Winkelman N.L. and Gebhart C.J. Subclinical ileitis produced by sequential dilutions of *Lawsonia intracellularis* in a mucosal homogenate challenge model. ³ Guedes R.M.C., Clinical signs of lleitis. 2018.

⁴ Lawson y Gebhart, 2000.

 ⁵ Arnold M. et al. Prevalence of Lawsonia intracellularis in pig herds in different European countries. Porcine Health Management (2019) 5:31.
⁶ Holtkamp, 2019.

⁷ Paradis M.A. *et al*, 2005.

⁸ Rubio P., 2018.

⁹ McOrist *et al*, 1997.

¹⁰ Roerink F. *et al.*, AASV 2016.

¹¹ Thechnical data on Porcilis® Lawsonia SPC, MSD.

¹² Jacobs A.A.C. et al. Efficacy of a novel inactivated *Lawsonia intracellularis* vaccine in pigs against experimental infection and under field conditions. Vaccine 37 (2019) 2149–2157.

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International summary of product information

Porcilis Lawsonia lyophilisate and solvent for emulsion for injection for pigs.

Indications for use:

For the active immunisation of pigs from 3 weeks of age to reduce diarrhoea, loss of daily weight gain, intestinal lesions, bacterial shedding and mortality caused by *Lawsonia intracellularis* infection.

Onset of immunity: 4 weeks after vaccination. Duration of immunity: 21 weeks after vaccination.

Administration:

A single dose of 2 ml of reconstituted vaccine in pigs starting at 3 weeks of age. Vaccinate pigs by the intramuscular route in the neck. Reconstitute the lyophilisate in the solvent or in Porcilis PCV M Hyo as follows: Lyophilisate Solvent or Porcilis PCV M Hyo 50 doses 100 ml 100 doses 200 ml Visual appearance after reconstitution: homogenous white to nearly white emulsion after shaking.

Special precautions for use in animals: Not applicable.

Safety and efficacy data are available in pigs from 3 weeks of age onwards which demonstrate that this vaccine can be mixed with Porcilis PCV M Hyo. The product literature of Porcilis PCV M Hyo should be consulted. Shelf-life after reconstitution according to directions: 6 hours. Store in a refrigerator ($2^{\circ}C - 8^{\circ}C$). Do not freeze. Protect from sunlight.

Composition: Each dose of 2 ml reconstituted vaccine contains: Active substance (lyophilisate): Inactivated Lawsonia intracellularis strain SPAH-08: ≥ 5323 U* * Antigenic mass units as determined in the in vitro potency test (ELISA). Adjuvant (solvent): Light mineral oil: 22.4 mg Aluminium (as hydroxide): 2.0 mg

