



PORCILIS® LAWSONIA ID

THE ENEMY IS INVISIBLE,

NOW THE NEEDLE IS TOO

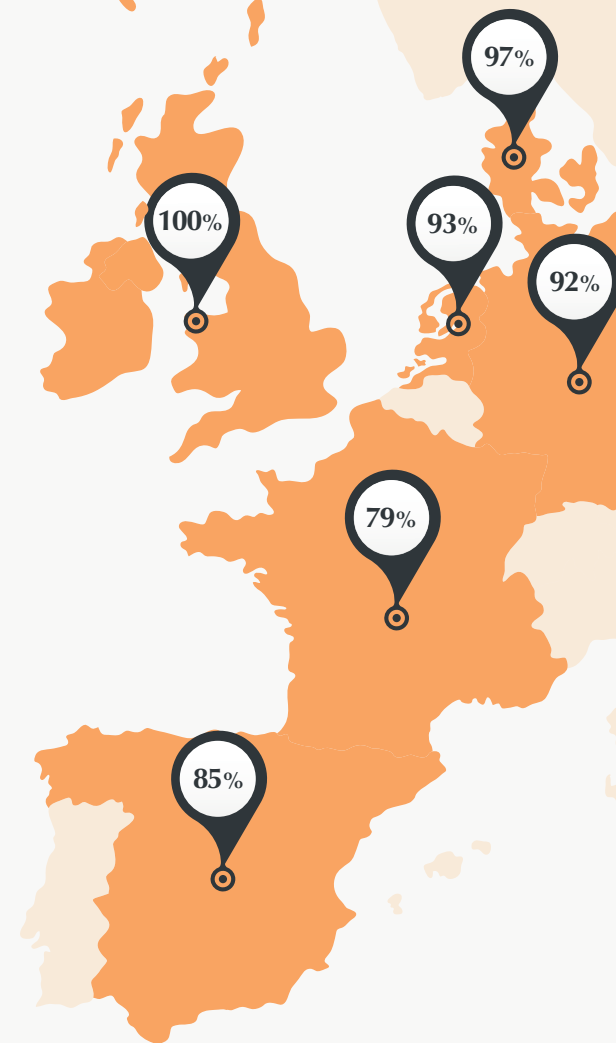
THE IDAL WAY



Prevalence of ileitis¹

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

Herd prevalence



Herd prevalence = % of herds with at least one animal with antibodies against *Lawsonia intracellularis*, as Mirjam Arnold published in 2019 at the Porcine Health Management magazine.



Risk factors associated with the direct detection of *L. intracellularis* in pigs²

Created based on the biological plausibility and distribution of 12 studied variables in:

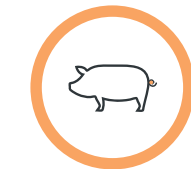
3 CATEGORIES



Environment



Internal Biosecurity



Animal related

CONCLUSIONS

Particular importance in disease prevention:



Weaning and subsequent post-weaning environment of nursery pigs.

Positive influence in disease prevention:



Low number of NP per pen.



More than **78% of** slatted floor in nursery.

ZnO

The absence of **zinc oxide**.



Maximum weaning weight of **7.8 kg**

Attempts to control *L. intracellularis* in pigs by minimizing the various risk factors associated on farm, is extremely complex and not very effective.

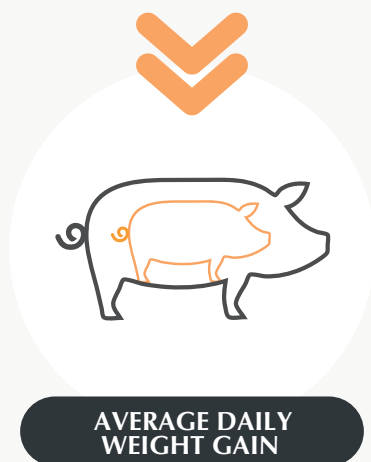
A more profitable and productive way to reduce *L. intracellularis* infection is to individually vaccinate pigs.



Economic impact of ileitis*

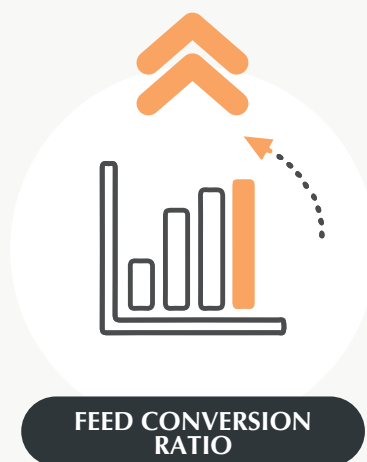
The major source of economic losses associated with ileitis arise from productivity drops caused by the disease.

Increase in growth differences → uneven batches → greater costs.



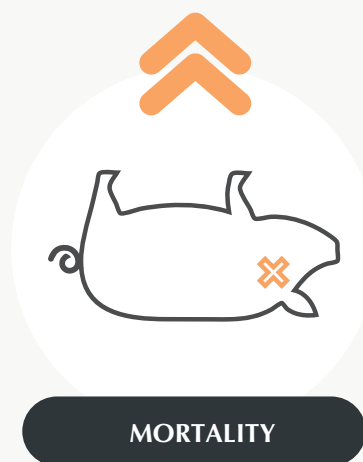
Can decrease by up to 38%

Increase in the time to reach slaughter weight.



Can increase by up to 27%

Lower increase in weight with the same consumption of feed.



Can increase by up to 70%

In the acute stage of the disease (pigs by the end of the fattening stage).

The subclinical ileitis has a 20.8% impact on ADWG and 20.4% impact on Feed Efficiency over 6 weeks.³

*Based on internal information, provided by Derald J. Holtkamp

Economic value of the estimated losses in the fattening stage.

- 01** In Europe, the cost of **1-5€ per pig** has been estimated.
- 02** During the fattening period in continents like Australia, with a production similar to Europe's, losses already reached **\$25 per sow** per year (Cutler & Gardner, 1988).
- 03** In the United Kingdom, they calculated a **loss of £2 to £4 million** per year due to ileitis (McOrist et al, 1997).
- 04** A 2018 report* from Prof. Derald Holtkamp, Iowa State University, estimates the loss due to ileitis at the end of the fattening period as **between \$5.98 and \$16.94 per pig marketed**

VACCINATING IS THE SOLUTION





PORCILIS® LAWSONIA ID

THE ENEMY IS INVISIBLE,

NOW THE NEEDLE IS TOO

THE IDEAL WAY



TAKING CARE OF ANIMAL WELFARE:
LESS STRESS, NO PAIN AND NO INJURIES AT POI*.



SAFER AND EASY HANDLING.
NO NEEDLES MEANS FEWER RISKS:

- FOR YOU (NO SELF-INJECTION).
- FOR YOUR PIGS (LESS IATROGENIC TRANSMISSION).
- FOR THE CONSUMER (NO BROKEN NEEDLES IN THE CARCASS).



THE WISEST DECISION:
INTRADERMAL VACCINATION IS THE MOST
INNOVATIVE AND EASY WAY TO CONTROL ILEITIS.

*Point of injection

Porcilis® Lawsonia ID



- **Ready to use** in a single step.
- There is no need to use water.
- It guarantees that **each** animal receives the **exact dose** (0.2 ml).

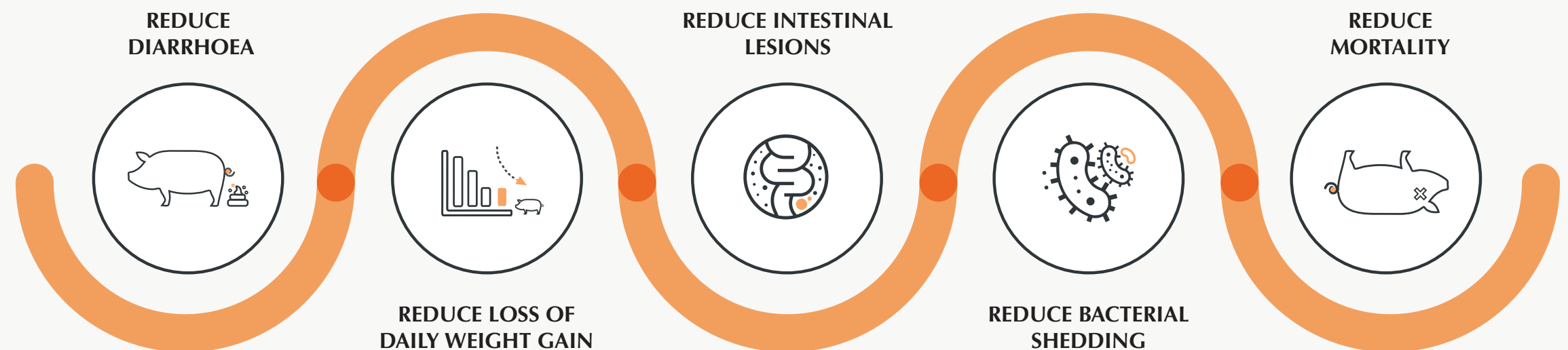


- **Intradermal administration** with IDAL device.
- **No interference** with feed, water chlorination, antibiotics, etc.



- **May reduce the use of antibiotics.**
- It can be reconstituted with **Porcilis PCV ID**.

Proven clinical effects of vaccination with Porcilis® Lawsonia ID⁴



Efficacy of a novel intradermal *Lawsonia intracellularis* vaccine in pigs against experimental infection and under field conditions.⁵

The results of the two experimental vaccination-challenge studies showed that **Porcilis® Lawsonia ID** as a single vaccine or in associated mixed use with **Porcilis® PCV ID**, induced statistically significant protection against experimental *L. intracellularis* infection, **4 weeks** or **21 weeks** after vaccination.


Country: the Netherlands	Design: 2 negative controlled, randomised and masked studies.	Farm: commercial pig herd with a history of PPE associated mortality (acute ileitis close to slaughter age).	Total number of animals: 3261 pigs > piglets randomly allotted to groups of 25 piglets each.
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Study 1

25 piglets 	25 piglets 	25 piglets 
Vaccinated with Porcilis® Lawsonia ID at 3 weeks of age.	Vaccinated once orally with live vaccine at 3 weeks of age.	Non-vaccinated (control)

Challenge: Oral administration of homogenized Li infected intestinal mucosa. **4 weeks after vaccination**

Study 2

25 piglets 	25 piglets 
Vaccinated with Porcilis® Lawsonia ID mixed with Porcilis® PCV ID .	Non-vaccinated (control)

Challenge: Oral administration of homogenized Li infected intestinal mucosa. **21 weeks after vaccination**

All pigs were euthanised and necropsied 21 days post-challenge.

Scoring system

(clinical signs of Li infection):

- 0 = normal
- 1 = mild diarrhoea (soft and shaped like peanut butter)
- 2 = moderate diarrhoea (loose like mush or yogurt)
- 3 = severe diarrhoea (watery and/or with incorporation of blood)

Other observation points

ADG, intestinal (ileum) lesions, serology (ELISA), DNA isolation (qPCR Li) from faeces and ileum mucosa, mortality rate.



Results

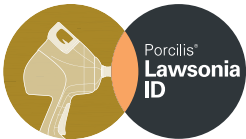
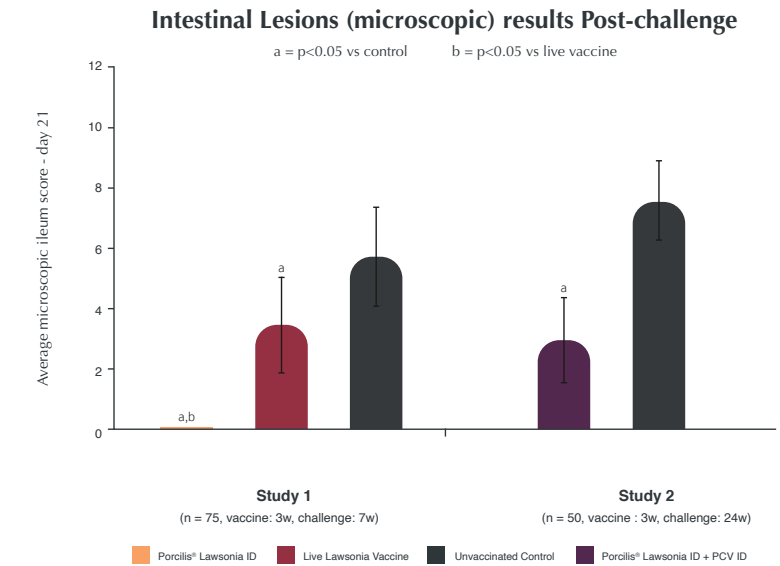
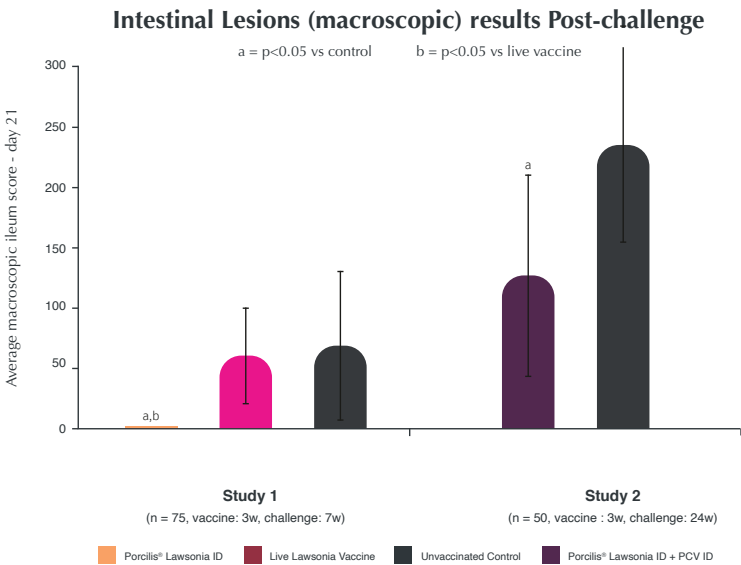
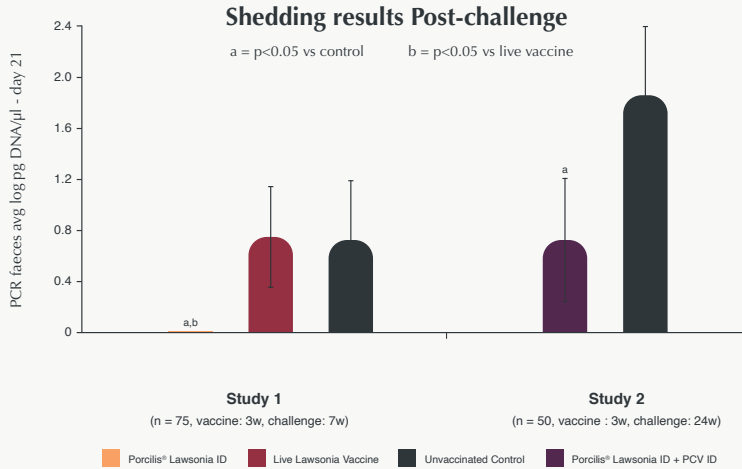
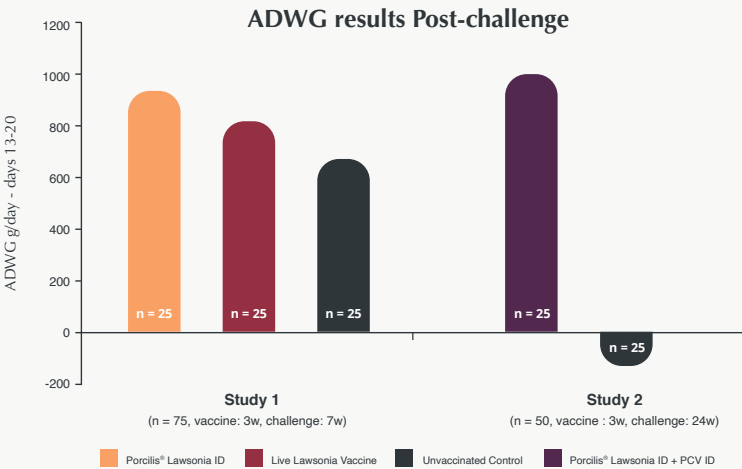


Table Post-challenge results ± SD of vaccination-challenge studies 1 and 2

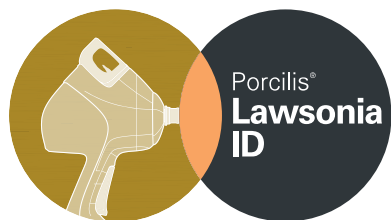
vaccine group	avg clinical score day 13-21	ADWG g/day day 13-20	PCR faeces avg log pg DNA/μl		PCR mucosa avg log pgDNA/μl day 21	avg macroscopic ileum score day 21	avg microscopic ileum score (IHC) day 21
			AUC	day 21			
Study 1: vaccination at 3 weeks of age, challenge at 7 weeks of age, necropsy 21 days after challenge							
Law ID ^a	0.3 ± 0.5	956 ± 119 ^{d,e}	0.13 ± 44 ^{d,e}	0.0 ± 0.0 ^{d,e}	0.03 ± 0.04 ^{d,e}	0.6 ± 1.5 ^{d,e}	0.1 ± 0.3 ^{d,e}
Live vaccine ^b	0.2 ± 0.4	812 ± 287	0.79 ± 0.91 ^d	0.77 ± 0.81	0.50 ± 0.51	61 ± 81	3.4 ± 3.2 ^d
Control	0.5 ± 1.0	674 ± 381	1.44 ± 1.13	0.73 ± 0.93	0.66 ± 0.60	68 ± 125	5.7 ± 3.3
Study 2: vaccination at 3 weeks of age, challenge at 24 weeks of age, necropsy 21 days after challenge							
Law ID + PCV ID ^c	1.3 ± 1.9 ^d	1001 ± 710 ^d	4.23 ± 1.51	0.71 ± 0.96 ^d	0.19 ± 43 ^d	129 ± 165 ^d	2.9 ± 2.8 ^d
Control	3.8 ± 5.4	-139 ± 1210	5.02 ± 1.65	1.90 ± 1.08	0.54 ± 61	241 ± 160	7.7 ± 2.6

^a Porcilis® Lawsonia ID
^b commercially available live attenuated Lawsonia vaccine
^c associated mixed use of Porcilis® Lawsonia ID and Porcilis® PCV ID

^d p<0.05 vs control
^e p<0.05 vs live vaccine



Porcilis®
Lawsonia ID
induces significant
protection against
experimental
L. intracellularis
infections.



THE IDAL[®] WAY

• Needle-free • Efficacy • Innovation •

¹ Arnold M. *et al.* Prevalence of *Lawsonia intracellularis* in pig herds in different European countries. *Porcine Health Management* (2019) 5:31.

<https://doi.org/10.1186/s40813-019-0137-6>

² Arnold M *et al.* Correlation of *Lawsonia intracellularis* positivity in quantitative PCR and herd factors in European pig herds. *Porcine Health Management* (2021) 7:13 <https://doi.org/10.1186/s40813-021-00192-4>

³ Armbruster G. *et al.* Evaluation of Tylan in a finishing pig subclinical ileitis challenge model. *AASV*. 2013. Pp. 237-242

⁴ Technical data on Porcilis[®] Lawsonia ID (SPC). MSD

⁵ Jacobs A.A.C. *et al.* Efficacy of a novel intradermal *Lawsonia intracellularis* vaccine in pigs against experimental infection and under field conditions. *Porcine Health Management* (2020) 6:25 <https://doi.org/10.1186/s40813-020-00164-0>

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International summary of product information

Porcilis Lawsonia ID 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 0.2 ml of reconstituted vaccine in pigs starting at 3 weeks of age.

Vaccinate pigs by the intradermal route using a multi-dose needle-free injection device for intradermal application of liquids suitable to deliver a "jet-stream" volume of vaccine (0.2ml ± 10%) through the epidermal layers of the skin.

Reconstitute the lyophilisate in the solvent or in Porcilis PCV ID as follows:

Lyophilisate	Solvent for Porcilis Lawsonia ID or Porcilis PCV ID
50 doses	10 ml
100 doses	20 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, except for protection against mortality, are available in pigs from 3 weeks of age onwards which demonstrate that this vaccine can be mixed with Porcilis PCV ID. The product literature of Porcilis PCV ID should be consulted.
Shelf-life after reconstitution according to directions: 6 hours.

Composition:

Each dose of 0.2 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):

Paraffin, light liquid 8.3 mg

DL-α-tocopheryl acetate 0.6 mg