

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

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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.





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



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 AUC	s DNA/µl day 21	PCR mucosa avg log pgDNA/µl day 21	avg macroscopic ileum score day 21	avg microscopic ileum score (IHC) day 21
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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}	$0.13 \pm 44 \ ^{d,e}$	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 a	ige, challenge at 2	24 weeks of age, r	necropsy 21 days	after challenge		
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Study 2: vaccination	at 3 weeks of a 1.3 ± 1.9 ^d	ige, challenge at 2 1001 ± 710 ^d	24 weeks of age, r 4.23 ± 1.51	necropsy 21 days 0.71 ± 0.96 ^d	o.19 ± 43 ^d	129 ± 165 ^d	2.9 ± 2.8 ^d
Study 2: vaccination Law ID + PCV ID ^c Control	at 3 weeks of a 1.3 ± 1.9 ^d 3.8 ± 5.4	ge, challenge at 2 1001 ± 710 ^d -139 ± 1210	24 weeks of age, r 4.23 ± 1.51 5.02 ± 1.65	necropsy 21 days 0.71 ± 0.96 ^d 1.90 ± 1.08	after challenge 0.19 ± 43 ^d 0.54 ± 61	129 ± 165 ^d 241 ± 160	2.9 ± 2.8 ^d 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

^ep<0.05 vs live vaccine



Intestinal Lesions (macroscopic) results Post-challenge

a = p < 0.05 vs control b = p < 0.05 vs live vaccine



Shedding results Post-challenge



Intestinal Lesions (microscopic) results Post-challenge

a = p < 0.05 vs control b = p < 0.05 vs live vaccine







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



