

## USE OF AIVLOSIN IN FEED FOR CONTROL OF ILEITIS (PPE) IN USA AND EUROPE

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### Introduction and Objectives

Aivlosin<sup>®</sup> is a new macrolide antibiotic with activity against *Brachyspira*, *Lawsonia* and *Mycoplasma*.

Infection by *Lawsonia intracellularis*, the cause of porcine proliferative enteropathy (PPE, ileitis) has become a serious production problem over the past 5-10 years, highlighted by the decline of swine dysentery as a major herd health problem. The acute form of PPE is produced haemorrhagic diarrhoea and variable mortality. The chronic form is associated with thickening and ulceration of the ileum and duodenum and intermittent diarrhoea. This generally occurs at 4-6 weeks post-weaning and results in reduced growth rate and poor feed conversion efficiency.

### Materials and methods

A previously reported<sup>(1)</sup> challenge study was representative of the acute form of disease. A new study has been completed using a less pathogenic dose of infectious organisms.

Groups of 36 pigs were challenged and treated 5 days later, either with aivlosin at 50ppm for 10 days, or tylosin at 100ppm for 21 days.

Following the challenge study 2 double-blinded field trials have been completed. Groups of 60 to 70 pigs were given feed medicated with either 50ppm of Aivlosin for 10 days, or tylosin at 100ppm for 21 days. Untreated control groups were also included. The pigs were 9-10 week old and approximately 25kg liveweight.

### Results and Discussion

All the studies showed positive improvements for production and clinical parameters for Aivlosin over the untreated groups and the positive controls.

The challenge study showed a clear advantage in reduction of clinical signs (mortality and faecal consistency scores) and a superior feed conversion ratio to the positive control for the duration of the study. Lesion scoring and shedding investigations (PCR) showed that the organism was not eliminated, thus helping to ensure development of protective immunity.

The clinical trials confirmed the findings of the challenge study. No mortalities were recorded, and performance parameters and reduction in faecal scores were superior to the untreated and positive control groups. The improvement in daily weight gain and feed conversion reached statistical significance in the second field trial.

The total use of Aivlosin<sup>®</sup> was less than 25% of the tylosin use (half the inclusion rate for less than half the duration).

**Table 1. Challenge study**

	Mortality %	ADG Day 0-21 (kg)	FCR Day 0-21	Change in FCS Day 0-10
Aivlosin	0	0.364 <sup>c</sup>	1.96 <sup>b</sup>	-4%
Control	5.6	0.273 <sup>a</sup>	2.36 <sup>a</sup>	+22%
Tylosin	2.8	0.350 <sup>b</sup>	2.00 <sup>b</sup>	+21%

Different superscript letters are significant to P< .05 within each category

**Table 2. Clinical field trials**

Treatment Groups	ADG Day 0-28 (kg)	FCR Day 0-28	Change in FCS Day 0-10
<b>Trial 1</b>			
Aivlosin	0.646	1.89	-40%
Control	0.606	1.97	+12%
Tylosin	0.568	2.09	-31%
<b>Trial 2</b>			
Aivlosin	0.723*	1.95***	-17%
Control	0.534	2.36	+86%
Tylosin	0.666	2.05	-23%

\* p<0.05; \*\*\* p<0.001

FCS = Faecal consistency Score: 0=solid, 1=soft, 2=liquid

ADG = average daily weight gain

FCR = food conversion ratio

### Conclusions

Aivlosin<sup>®</sup> has demonstrated consistent clinical and performance improvements over the positive control product in the face of varying challenge from *Lawsonia intracellularis*, and promises to be a valuable therapeutic agent for treatment of PPE.

### References

(1) Winkelman NL, Tasker JB. 2002 Proc. of the 17<sup>th</sup> IPVS, p 145.