USE OF AIVLOSIN® IN-FEED FOR TREATMENT AND PREVENTION OF SWINE DYSENTERY

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Introduction and Objectives

Aivlosin is a new macrolide antibiotic with activity against Brachyspira, Lawsonia and Mycoplasma.

This is the first paper to describe efficacy of aivlosin for in-feed medication against *Brachyspira hyodysenteriae* the causal agent of swine dysentery (SD) (1). Dose rates were set in experimental challenge trials, which were followed by trials on commercial farms. The objective of the studies was to compare the response to Aivlosin® with positive controls for SD treatment and prevention.

Materials and methods

In the treatment challenge trial, groups of 10 five wk old pigs were challenged with a pathogenic strain *B. hyodysenteriae* and treated when all pigs showed signs of SD. Treatments were 100ppm aivlosin, 100ppm tiamulin, both for 10 d and 100ppm tylosin for 21 d, all in-feed.

In the prevention challenge trial similar groups were treated for 10 d, 1 day post-challenge with 50ppm aivlosin or 40ppm tiamulin, both in-feed for 10 d.

Clinical responses, pathogen excretion and lesion incidence was measured in both challenge studies.

Six field trials were conducted on commercial farms in Spain and Ireland. *B. hyodysenteriae* was isolated on each farm. Aivlosin was incorporated at 100ppm for treatment and 50ppm for prevention, both for 10 d.
Both prevention trials and one treatment trial used valnemulin (25 and 75ppm respectively for 7 days) as a positive control. Tiamulin was used in the remaining treatment trial at 100ppm for 7 d. In all the field trials the minimum duration of treatment consistent with the data sheet was used. Tylosin was not used due to widespread resistance (1).
Untreated control groups were not included for welfare reasons.

Results and Discussion

Aivlosin® equalled or exceeded the performance of the positive control products in all the trials for the majority of parameters.

Table 1. Treatment challenge trial

	Mean clin. score	Days to recover	Days to clear B. hyo	ADG D0-21	FCR D0-21
Aivlosin	0.55	2.3	3.0	0.65	1.79
Tiamulin	1.10	4.4	5.8	0.74	1.93

FCR = feed conversion ratio
ADG = average daily weight gain
Mean clin. score for trial duration: max = 9

Table 2. Prevention challenge trial

	Mean clin. score	% B. hyo. isolation[1]	% PM lesions[2]	ADG D0-21	FCR D0-21
Aivlosin	0.145	10	0	0.631	1.12
Tiamulin	0.435	33	33	0.520	1.25
Chall C[3]	2.029	90	100	N/a	N/a

1. % B. hyo isolation = days with positive swabs for *B. hyodysenteriae*, over days 0-21.
2. % PM lesions = % with SD lesions at post-mortem.
3. Chall C = challenge control

Table 3. Field trials: prevention

	ADG (kg) Day 0-21	FCR Day 0-11	Max. FCS (Day)	FCS range Day 0-21
Trial 1 (100/group)				
Aivlosin	0.601	2.38	0.22	0.14 – 0.22
Val	0.570	2.44	0.22	0.14 – 0.22
Trial 2 (100/group)				
Aivlosin	0.747	1.93	0.34	0.0 – 0.34
Val	0.748	1.94	0.42	0.0 – 0.36

FCS = faecal consistency score, range 0-2; Val = valnemulin

Table 4. Field trials: treatment

	ADG (kg)	FCR[1]	FCS reduction Day 0-21
Trial 1 (100/group)			
Aivlosin	0.527	1.43	67%
Val	0.502	1.55	77%
Trial 2 (100/group)			
Aivlosin	0.722	1.95	94%
Val	0.727	2.05	100%
Trial 3 (90/group)			
Aivlosin	0.667	2.62	93%
Val	0.634	2.69	91%
Trial 4 (125/group)			
Aivlosin	0.747	2.27	95%
tiamulin	0.687	2.49	80%

(1) FCR over days 0-10 (trials 1,2) and days 0-21 (trials 3,4)

Conclusions

Aivlosin was found to prevent clinical swine dysentery at 50ppm (2.5 mg/kg), and to treat the disease at 100ppm (5 mg/kg), in the feed. It also exceeded the performance of the positive control products in all trials for the majority of parameters.

Reference

(1) Harris DL *et al* (1999) in Diseases of Swine, 8th Ed, p579-600