

## AIVLOSIN® - THE NEW ILEITIS THERAPY FOR PIGS - A PRACTITIONER'S VIEW

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### Summary

*The clinical and economic effects of Porcine Proliferative Enteropathy (PPE) are described by the author. PPE, or Ileitis, is common on modern pig units and more so, perhaps, on higher health premises. This could be due to the absence of competitive gut pathogens. Controlled treatment trials were carried out on selected infected groups, using either Tylosin or Aivlosin®. Results indicated that those groups treated with Aivlosin® showed increased body weight at slaughter.*

The clinical signs of Ileitis or Porcine Proliferative Enteropathy (PPE) are commonly seen in pig production units. These signs include the classical picture of loose, grey faeces seen in the dunging area of weaner pens in pigs between 8 and 12 weeks of age. On viewing the associated pigs, one can see unevenness, typical of some pigs suffering from malabsorption in the ileum, resulting in poorer average Daily Live Weight Gain (DLWG). From the farmer's perspective, the consequence of ileitis is increased days to slaughter or reduced slaughter weight, greater spread in weights at slaughter and more grading and re-grouping at slaughter, in order to be able to sell even batches of pigs.

The manufacturers of Aivlosin® (acetylisovaleryltylosin acetate) sought a farm that was high health, but had an existing problem with clinical (and sub-clinical) ileitis. Presence of ileitis was confirmed pre-trial using faecal PCR and faecal samples were also screened for the absence of other diarrhoea causing bacteria, including *Salmonella spp.* and *Brachyspira spp.* that could interfere with the clinical observations required by the trial.

The criteria set out in the initial trial protocol (Trials 1 and 2) were to compare Aivlosin® to the current standard treatment product Tylosin and to a control group where no treatment was given. These were "blind" studies with neither the farmer nor the study investigator aware of which medication, if any, was being fed to the different batches of pigs. Feed bags were colour coded so that each pen received specific coloured feed bags on specified days.

The initial farm selected was a 300-sow integrated minimal disease unit, screened as negative for *Mycoplasma hyopneumoniae*, *Brachyspira hyodysenteriae*, PRRS and Aujeszky's Disease. There were no clinical signs of PMWS on the unit at the time of the trial. The accommodation for the trial consisted of 6 pens, each capable of holding 35 pigs. Two pens were assigned to each treatment type (colour) giving a group size of 70 pigs per trial group. Pigs were double tagged to ensure accurate recording of identities and to minimise losses.

The data sheet for Aivlosin® indicates that it should be fed at an inclusion rate of 85mg/kg for 10 days equivalent to 2kgs Aivlosin® 42.5mg/g per tonne. However, an inclusion rate of 1kg Aivlosin® was used for this initial (pre-licensing) trial. In a subsequent trial (Trial 3), two different inclusion rates of Aivlosin® were used - 1kg and 2kg per tonne.

Tylosin is indicated at 100mg/kg to be fed for 21 days, equivalent to 2kgs Tylan G50 per tonne. Pigs were weighed before the trial commenced (day 0) and subsequently at day 10, day 21 and day 28 on completion of the trial period.

### Parameters:

At each weighing, pigs were checked for faecal consistency (FC) and body condition score (BCS). Faecal consistency was scored using a 0, 1, 2 scoring system, with 0 firm, 1 loose and 2 watery. Body condition score was similarly scored, with 0 well-conditioned, 1 less conditioned and 2 hollow. Other general observations were made during the weighing sessions.

On the initial weighing, attempts were made to equalise, where possible, the weights of each trial group, the sexes and the faecal consistency and body condition scores of each group. This task was not easy, considering the number of variables involved. A subsequent trial (Trial 2) removed sex variation from the equation by choosing male pigs only.

### Results:

The results for the individual trials are summarised in Tables 1, 2 and 3.

Table 1 - Trial 1 results

	DLWG (kg) d.0-28	FCR d.0-28	FC Day 10	% FC change Day 0-10
Control	0.534 <sup>b</sup>	2.36	1.90 <sup>b</sup>	+86
Aivlosin <sup>®</sup> 42.5mg/g	0.723 <sup>a</sup>	1.95**	0.83 <sup>a</sup>	-17
Tylosin 100ppm	0.666 <sup>b</sup>	2.05	0.80 <sup>a</sup>	-23

\*\*p<0.01, Parameters with differing superscripts are statistically significantly different (p<0.05)

Table 2 - Trial 2 results

	DLWG (kg) d.0-28	FCR d.0-28	FC Day 10	% FC change Day 0-10
Control	0.606 <sup>b</sup>	1.97	1.53 <sup>b</sup>	+12
Aivlosin <sup>®</sup> 42.5mg/g	0.646 <sup>a</sup>	1.89	0.93 <sup>a</sup>	-40
Tylosin 100ppm	0.568 <sup>b</sup>	2.09	1.14 <sup>a</sup>	-31

Parameters with differing superscripts are statistically significantly different (p<0.05)

Table 3 - Summary Average DLWG results from all 3 trials

	Aivlosin <sup>®</sup> 1Kg/tonne	Aivlosin <sup>®</sup> 2Kg/tonne	Tylosin	Control
Trial 1 IRL	723		666	534
Trial 2 IRL	646		567	606
Trial 3 IRL	575	579		488

Table 1 shows that the average DLWG values over the entire trial period were significantly better for the Aivlosin<sup>®</sup> group over the Tylosin and control groups.

In trial 2, again, the average DLWG values over the entire trial period were significantly better for the Aivlosin<sup>®</sup> group over the Tylosin and control groups.

Trial 3 showed no significant difference in average DLWG between the 1kg and 2kg inclusion rates of Aivlosin<sup>®</sup>.

Faecal consistency (FC) scores were significantly better for both treatment groups over the control group on day 10 of both trials 1 and 2. Faecal consistency improved in both the treatment groups, whereas it deteriorated in the control group on both trials.

## Discussion

Ileitis (PPE) is a common condition in modern pig production premises. Anecdotal evidence suggests that it is more common in higher health units, perhaps because of the absence of competitive inhibitory gut flora or gut pathogens. In recent years, it has gained additional prominence because of its appearance as a consequence of or as a concurrent condition with PMWS.

Ileitis costs farmers significant amounts of money. If the DLWG element of trial 1 were to be extrapolated to the remaining 8 weeks of the pigs' lives and if the severity of the condition were to remain the same over time, then the difference between the treated pigs and the non-treated pigs at slaughter would be between 7.4Kg (Tylosin treatment group) and 10.6Kg bodyweight (Aivlosin<sup>®</sup> treatment group). Improving performance and decreasing cost of production is the best way of convincing the modern pig farmer that not only is the condition significant, but that the losses associated with it could be in the order of £7 per animal slaughtered.

Current restrictions relating to the spreading of animal wastes onto pastures (nitrates directive) mean that farmers are increasingly aware of the importance of reducing slurry volumes in order to be able to have sufficient storage available for the winter period. With this in mind, washing of all housing between batches of pigs is not being carried out, resulting in a build-up in infection pressure between successive batches of pigs. Strategic use of Aivlosin<sup>®</sup> for 10 days on entry to vacated buildings would significantly reduce the impact of ileitis on the pigs.

An individual treatment form of Aivlosin<sup>®</sup> (8.5mg/g) is now available. This presentation is ideal for treatment of pigs that are in hospital pens or have been removed because of inability to cope with competition, or due to poorer

growth rates. Fed continuously for 10 days, this can assist the speedy recovery of these poorer pigs and get them back to health and to acceptable growth rates much faster than before. In summary, Aivlosin<sup>®</sup> certainly has a place in reducing the impact of ileitis, through strategic medication at key stress periods such as moving and mixing of pigs.

## BOOK REVIEW

### *VETERINARY MEDICINE –*

*A textbook of the diseases of cattle, horses, sheep, pigs and goats  
(10th Edition)*

**Editors:**

Radostits, O.M., Gay, C.C., Hinchcliff, K.W. and Constable, P.D.

Hardback - 2156 pages - in 36 chapters - 7 contributors

Publishing date: 2007

ISBN: 9780702027772

Price: £99.99 inclusive of P & P (5.1kg)

Undoubtedly, this massive tome will become the reference manual for all forthcoming veterinary students and large animal practices, as its forerunner 'Blood and Henderson,' did for me 40 years ago.

It covers all major farmed species and is divided into two parts. Part 1 deals with General Medicine and the individual body's systems and Part 2 on Special Medicine covers infectious, metabolic, toxic and inheritable diseases. However, of particular interest are the sections on the pig, which have been written by our own Pig Journal chief scientific editor Prof. Stanley Done. There are exceptional reviews of the Porcine Reproductive Respiratory Syndrome (257 references), Post-weaning Multisystemic Wasting Syndrome (229 references), Pleuropneumonia (167 references) and Enzootic Pneumonia (a modest 136 references). Respiratory diseases have been his lifelong work and the results are reflected in these outstanding sections. Enteric diseases have not been overlooked, with Ileitis (102 references) Swine Dysentery (86 references) and even Colitis (58 references).

Other pig diseases and infections are broadly covered in the book and there is a useful Appendix (2) on reference laboratory values and uniquely, Appendix (4) on drug doses for pigs. The book is well indexed for finding out the relevant part or disease for the species in which you are interested.

It was particularly sad that the chief editor, Otto Radostits, died just before the publication of this book, but it will be a lasting tribute to his amazing effort to bring all this information into just one book and is of excellent value.

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