

NUMBER 9

TWO CONTROLLED TRIALS SHOW ECONOR® (VALNEMULIN) CONTROLS CLINICAL SIGNS OF ILEITIS AND PREVENTS WEIGHT LOSS

Ulrich Klein *Dr.med.vet*
International Technical
Services Manager



INTRODUCTION Porcine proliferative enteropathy (PPE), also known as ileitis, is a common disease of pigs worldwide. It is caused by the pathogen *Lawsonia intracellularis* and usually affects pigs from 6 to 20 weeks of age. Ileitis can occur in acute or chronic form and causes a range of problems, including depression, decreased weight gain, poor feed efficiency and sometimes death.

Econor® (valnemulin), a new pleuromutilin antimicrobial, has proved to be highly effective for preventing and treating swine dysentery, another common gastrointestinal problem of pigs. Econor is approved in several countries for preventing and treating swine dysentery and recently was approved in Europe for preventing colitis and treating ileitis.

Danish Trial

A controlled trial in Denmark involved pigs from a commercial farm that developed naturally occurring ileitis, which was confirmed by PCR testing.¹ The pigs were a specific-pathogen-free herd known to be free of swine dysentery.

The trial was initiated when the prevalence of mild to moderate diarrhoea reached 20%. Investigators examined each pig to provide baseline data and scored them for factors such as general appearance, body condition and faecal state. Next, they excluded the heaviest and lightest pigs from an initial 130. The remaining 120 pigs were assigned to pairs matched primarily for faecal score and weight. The pigs were housed in six pens with 20 animals each.

Three days later, weights were taken again and

each pig received either a placebo premix or Econor 10% Premix at a rate calculated to provide 3.75 mg valnemulin per kg bodyweight. Pigs were examined every 2 to 3 days during the 10 days that Econor or the placebo was administered and for an additional 10 days after treatment was withdrawn.

Results

> During the medication period, mean daily weight gain was 658 grams in the Econor group compared to 506 grams in controls (Table 1). In other words, pigs in the Econor group gained 30% more weight than those in the placebo group, a statistic difference that investigators regarded as “very high.”

> During the post-treatment period, the mean daily weight gain of the Econor group (685 g) was 2.9% higher than controls (666 g).

> Econor-treated pigs showed a significantly better feed intake and improvement in feed conversion efficiency during the medication

KEY POINTS

- > Econor® administered in feed significantly reduced the clinical signs of ileitis such as diarrhoea and depression.
- > Pigs receiving Econor gained significantly more weight than those receiving a placebo.
- > Econor also was credited with improving feed intake and feed conversion efficiency.

period compared to controls.

> Diarrhoea in pigs medicated with Econor decreased significantly while increasing in controls during the medication period. This finding was maintained during the post-treatment period. Lower faecal scores were found in Econor-treated pigs during and after treatment (Figure 1).

> The incidence of depression was significantly reduced in Econor-treated pigs and the average body condition score significantly improved during the post-medication period compared to controls.

> Faecal samples positive for *Lawsonia intracellularis*, which were high at the start of the trial, fell in both groups during the trial. There was also evidence that the detection rate fell more rapidly in pigs receiving Econor.

Researchers' observations: "Econor was highly effective in controlling the clinical signs of ileitis and in preventing weight loss associated with the disease. The advantage was

maintained for at least 10 days after the period of medication."

U.S. Trial

Investigators tested the efficacy of Econor for treating ileitis in 120 finishing pigs from a commercial U.S. herd with a naturally occurring acute PPE outbreak.² More specifically, they wanted to assess the efficacy of Econor when administered at a targeted dose of 3.3 mg/kg/day (75 ppm

Econor in the feed) in finishing pigs.

Pigs in the study were about 24 weeks old (bw 62-102 kg). They were randomly assigned to one of 24 pens, each with five pigs. Pigs in 12 pens received Econor and those in the other 12 received a placebo.

Medicated feed was provided *ad libitum* to all groups for 21 days. Clinical observations, which took into account factors such as bodyweight gain and feed efficiency, were performed daily during the 10-day treatment period, then three times weekly until day 28. Feed consumption was monitored throughout the trial. Scores were recorded for diarrhoea, anorexia and depression.

Based on actual feed consumption and bodyweights, the dosage of valnemulin in the Econor group was 1.58 mg/kg.

Results

> Pigs with diarrhoea at the beginning of the trial that were treated with Econor showed significantly improved diarrhoea scores through Day 14 compared to controls (Figure 2).

> Econor-treated pigs exposed to PPE but without diarrhoea at the start of the trial had significantly improved diarrhoea scores from Days 7 to 28.

> At the end of the trial, Econor-treated pigs showed significantly better bodyweights and averaged almost 10 pounds more gain than controls.

> Feed consumption was significantly improved during the entire trial.

> Anorexia and depression tended to be lower in Econor-treated pigs compared to controls.

> Only one Econor-treated pig died due to PPE during the study, compared to three of the controls.

Researchers' observations: "Significant improvements in clinical diarrhoea scores, body-

Table 1

Daily weight gain and feed conversion in pigs receiving a placebo or Econor for ileitis treatment.

	Mean Daily Weight Gain (Grams)	
	Placebo	Econor
Day 0 – 10 (treatment period)	506	658 (+30%)
Day 10 – 19 (post-treatment)	666	685 (+2.9%)
Day 0 – 19 (treatment and post-treatment trial periods)	582	671 (+15.3%)
Feed conversion ratio Days 0 – 10 (treatment period)	1.78	1.48

"Based upon the results of this field study, Econor is effective"

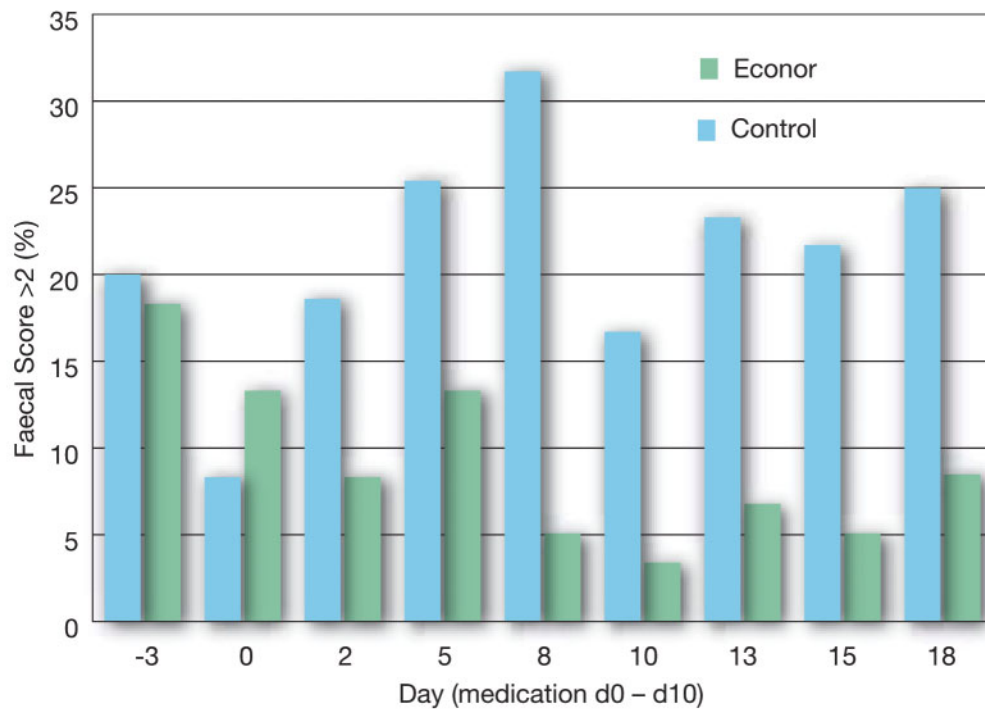


Figure 1

Percentage of pigs with faecal score >2 in the Danish trial.

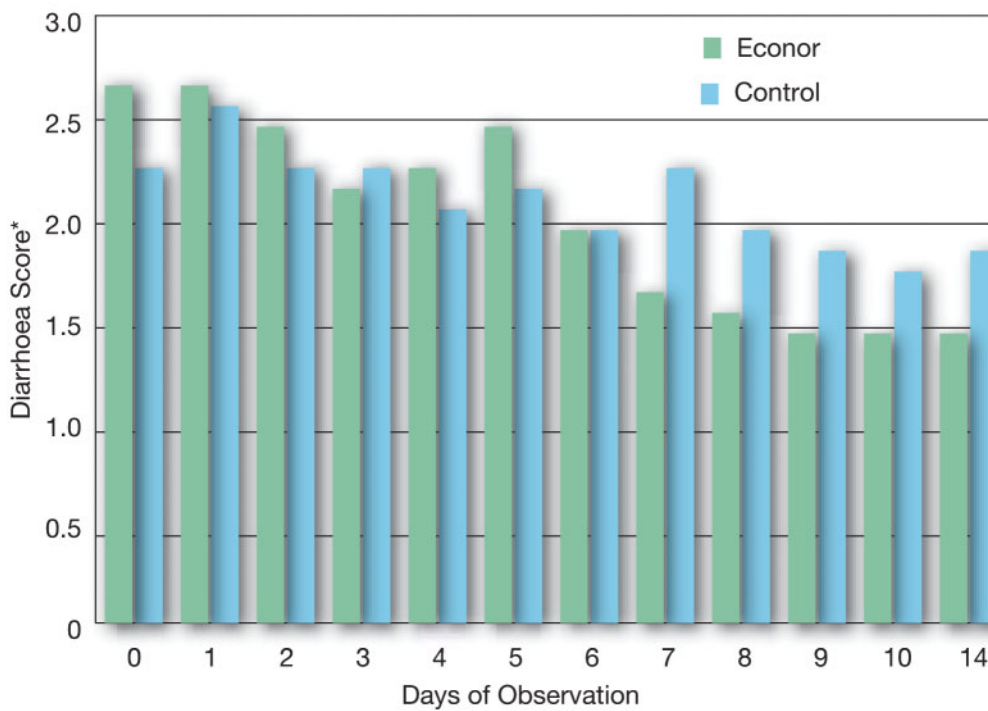


Figure 2

Diarrhoea scores for clinically affected pigs in the U.S. trial.

*Diarrhoea score: 1 = normal and 4 = severe.

weights, feed consumption and efficiency were demonstrated along with trends in reduced mortality and improved anorexia and depression scores even with a lower-than-target dosage of valnemulin in the feed. Based upon the results of this field study, Econor is effective in the treat-

ment and control of naturally occurring PPE.”

SUMMARY

Two controlled trials in herds affected by natural outbreaks of ileitis, one conducted in Denmark and the other in the United States, demonstrate that Econor reduces the clinical signs of ileitis

such as diarrhoea, anorexia and depression. The trial results also indicate that Econor helps prevent costly losses associated with ileitis in pigs, notably reduced bodyweight and poor feed consumption and efficiency.

For more information on these studies, please contact your local Novartis Animal Health representative or Dr. Ulrich Klein at Ulrich.klein@ah.novartis.com.

REFERENCES

¹ Haugegaard John, et al. Evaluation of the efficacy of Econor® (valnemulin) in the treatment of a naturally-occurring outbreak of porcine proliferative enteropathy (PPE) (ileitis) in Denmark. *The 16th International Pig Veterinary Society Congress*. 2000.

² Holck JT, et al. The efficacy of Econor® (valnemulin) in the treatment and/or control of a natural outbreak of porcine proliferative enteritis in US finishing pigs. *The 17th International Pig Veterinary Society Congress*. 2002.

