Introduction:
The use of tiamulin (Denagard® - Novartis Animal Health Inc.) has been described to treat avian intestinal spirchaetosis (AIS) in artificial infection studies with Brachyspira pilosicoli and B. intermedia (Stephens and Hampson, 2002; Hampson et al., 2002) and with B. pilosicoli in the field (Burch et al., 2006). Further field work was required to demonstrate the efficacy of the product.

Objective:
The objective of this pilot study was to evaluate the efficacy of tiamulin given in the drinking water to treat a naturally occurring field infection of mixed avian Brachyspira species, causing clinical disease in laying hens.

Materials and methods:
Thirty layers were selected for the trial from a group of hens supplied by a free-range flock of approximately 23,000 hens. The hens were allocated to one of the two treatment groups, either untreated controls or those given tiamulin at 250ppm in the drinking water from trial days 0-5. Faecal samples (FS) were sent for culture and PCR on day 0, 3, 5, 12 and day 18, when the trial was terminated. Five birds per treatment group were necropsied on trial days 3, 5, and 18 and their caecal contents samples (CS) cultured and PCR tested for avian Brachyspira spp.

Results:
The PCR results for faecal and caecal samples are highlighted in Figure 1 and culture results in Figure 2.

Conclusions:
Tiamulin at 250ppm in the drinking water for 3-5 days significantly reduced the colonisation of the caeca by all Brachyspira species identified. Caecal sampling appeared to give more reliable and accurate results than faecal sampling. Although B. intermedia disappeared after 5 days of medication, it did return in the caeca suggesting there was an inhibitory effect against this bacterium. This was observed by Hampson et al. (2002) and may explain the recurring problems that are commonly seen in free-range flocks. Brachyspira pilosicoli disappeared in both groups, possibly due to the strong competitive challenge of the other Brachyspira species. The range of tiamulin MICs for both B. intermedia and B. innocens isolates between 0.5-16µg/ml and B. innocens isolates between 1.0-8.0µg/ml.

References:

Poultry Health Reviews
www.octagon-services.co.uk