

Comparative Performance of Feedlot Cattle with Nematode and Trematode Infections Treated with Doramectin or Ivermectin/Clorsulon Injectable Solutions

E. G. Johnson, D.V.M.

W. K. Rowland, M.S.

Johnson Research

Parma, Idaho 83660

G. L. Zimmerman, D.V.M., Ph.D.

Zimmerman Research

Livingston, Montana 59047

D. J. Walstrom, M.S.

Pfizer Animal Health Group

Lee's Summit, Missouri 64081

Abstract

Two studies were conducted to evaluate the performance effect of liver fluke and gastrointestinal nematode removal from infected cattle, under standard feedlot practices, following treatment with doramectin or ivermectin/clorsulon. In each study, 180 animals (60 per treatment group) with gastrointestinal nematode infections (confirmed by fecal egg per gram counts (EPG)) were selected for the study. The animals had grazed on pastures known to produce gastrointestinal nematode and liver fluke infections. By necropsy and parasite recoveries, three sentinel animals were shown to be infected with gastrointestinal nematodes and immature liver flukes at the time of entry into feedlot. Animals were allocated by weight to six blocks of 30 each, then randomly allotted to 1 of 3 treatment groups within a weight block. Blocking was based on body weights and pen location. Ten animals were assigned per pen with 3 pens per block. In one study, calves (study W) entered the feedlot directly after weaning. In the second study, yearling steers (study S) were used. Prior to placement in the feedlot pens, animals in one group received doramectin injectable solution by subcutaneous injection at 1 ml/50 kg body weight (200 g doramectin/kg), animals in the second group received ivermectin/clorsulon injectable solution by subcutaneous injection at the recommended dose of 1 ml/50 kg

body weight (200 g ivermectin plus 2 mg clorsulon/kg) and animals in the third group served as non-medicated controls. Fecal samples for nematode egg counts and presence of fluke eggs were taken pretreatment and on day 84. Body weights and feed consumption were monitored throughout the (168 or 225-day) finishing period and hot carcass weights, quality grades, yield grades and liver condemnations (attributed to flukes) were recorded at slaughter.

In both studies, compared to controls, both treatment groups demonstrated improved final body weight, average daily gain, feed efficiency, and hot carcass weight. Improvements were significant ($P < 0.05$) for all variables in the study with yearling steers (study S) when doramectin- or ivermectin-treated steers were compared to controls. In the weaned calf study (study W) final body weight was the only variable with differences across treatment groups. Final body weight for doramectin-treated calves was significantly ($P < 0.05$) greater than control or ivermectin-treated calves. The advantages of the treatments were likely due to removal of gastrointestinal nematodes based on reduced nematode EPG counts since positive fluke egg counts at day 84 and liver condemnations at slaughter (attributed to flukes) were not different ($P > 0.05$) between any group. Doramectin was not approved for use in food animals in the US when this abstract was submitted.