

**Abstract:**

The effect of ivermectin delivered by an orally administered prototype sustained-release (IVM SR) bolus was evaluated over a period of 140 days using 12 steers aged approximately 8–10 months and ranging in weight from 150 to 175 kg. They were allocated to two groups of 6 steers each by restricted randomization based on their liveweight. Each of the treatment group received an IVM SR bolus designed to deliver 12 mg of the ivermectin/day for 135 days. The other group was designated as non-medicated controls. The groups were placed on adjacent 3 acre paddocks obtained by sub-dividing of 6.0 acre permanent pasture which had previously been grazed by young untreated cattle so exposing experimental steers to a similar challenge of a contaminated paddock. The faecal egg counts, herbage larval counts and worm burdens of the major gastrointestinal nematodes of cattle were significantly reduced by the use of the IVM SR boluses. These parasitological effects were reflected in the increased liveweight gains in the IVM SR bolus-treated steers. The control steers required occasional salvage treatments over the trial period and the herbage on their paddock was heavily contaminated with infective larvae as reflected in the high worm burden in the control steers necropsied at trial termination and in tracer calves introduced into the paddocks during the initial (Day 31), interim (Day 69) and final (Day 100) stages of the experiment.