Interaction between *Duddingtonia flagrans* and coccidiostat on viability of *Haemonchus contortus* larvae from lambs

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ABSTRACT

Providing dietary spores of *Duddingtonia flagrans* leads to fewer gastrointestinal nematode (GIN) larvae on pasture, but little is known about interaction with dietary coccidiostats. The objective was to determine the efficacy of *D. flagrans* (Df) fed to sheep with or without decoquinate (Study 1 and 2) or lasalocid (Study 3) to reduce the number of GIN larvae (predominantly *Haemonchus contortus*) cultured. All studies used a 2 × 2 factorial design (± Df × ± coccidiostat). Study 1: An in vivo experiment used 8 lambs/treatment using the recommended 5×10^5 chlamydospores/g carrier, but in retrospect, the package contained 10-fold fewer spores. There was no reduction in cultured larvae associated with Df. Study 2 and 3: anthelmintic-treated lambs were fed a supplement with coccidiostat (+C; decoquinate or lasalocid in Study 2 or 3, respectively) or without (-C) for 7 (Study 2) or 14 (Study 3) days before fecal collection; within diet, Df was administered (+DF) or not (-DF) 1 to 2 days before fecal collection. Feces were cultured on agar plates for 7 days at 2 g/plate + 300 L3 of *H. contortus* or 5 to 6 g/plate + 1000 L3 (n = 3 to 4/lamb) at 25°C. On the 2 g plates, Df reduced L3 recovery ($P < 0.001$) without an effect by coccidiostat in Study 2 ($P = 0.38$) or a slight increased recovery ($P = 0.05$) in Study 3, and no interaction between Df and coccidiostat. Using these methods, dietary coccidiostats did not impair the action of Df (5×10^5 chlamydospores/g) on reducing infective larvae in feces.

Keywords: Coccidiostat; *Duddingtonia flagrans*; Gastrointestinal nematodes; Sheep

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