

ABSTRACT

Most North American sugarbeet growers are at some level of risk from yield losses due to one or more soil-dwelling arthropod pests that can cause plant stand losses and corresponding yield reductions. Conventional granular and liquid insecticide formulations have been used to manage these pests for decades. Insecticidal seed treatments, if proven efficacious against these pests, would be attractive alternatives to these materials because they are convenient and relatively safe to deploy. Trials were carried out in 2005 and 2006 to compare the efficacy of experimental seed treatments and conventional insecticides against the following: 1) sugarbeet root maggot (SBRM), *Tetanops myopaeformis* Röder; 2) wireworms (*Limonius* spp.); and 3) subterranean springtails (Collembola). Poncho+Cyfluthrin (60:16 g ai/ unit [100,000 seeds]) provided similar levels of SBRM control to that of the conventional insecticide (Counter 15G at 11.9 lb product/ac). Excellent wireworm control was provided by Poncho+Betacyfluthrin at two rates (60:8 g and 30:4 g ai/unit), Cruiser 5FS (60 g ai/unit), and Poncho 600 (60 g ai/unit). Results from the springtail trials demonstrated that seed treatments (i.e., V-10170 at 75 g, V-10170+Danitol [60:15 g, respectively], and Poncho+Betacyfluthrin at 60:8 g ai/unit seed were comparable in performance to low and moderate rates (6 to 8 lb product/ac) of Counter 15G. Seed treatments appear to be less likely to cause stand losses due to phytotoxicity than conventional insecticides. Overall, these findings suggest that the experimental seed treatments evaluated are likely to provide similar levels of root protection from SBRM, wireworms, and subterranean springtails as currently labeled conventional soil insecticides.