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CHEMICAL AND NONCHEMICAL STRATEGIES FOR SUSTAINABLE SUGAR BEET CYST NEMATODE MANAGEMENT IN IDAHO, USA

ABSTRACT

Sugar beet cyst nematode (SBCN), *Heterodera schachtii*, on sugar beet is the most serious pests on sugar beet in Idaho, USA. Chemical and non chemical strategies have been developed to manage the nematodes below the economic thresh old level. Most of the combination practices are commercially adapted by the growers which are environmentally safe and some of them are economically viable which include chemical treatments, new compounds and chemistries, trap crops, crop rotation, use of resistant varieties and seed coat treatment with biological nematicide. New tolerance varieties have been tested in field and greenhouse trials and have proven effective in increasing beet yield and reducing nematode populations. Low rate fumigation of Telone II has been tested in repeated field trials and has proven effective in reducing nematode populations and increasing sugar beet yield. Field trials that combined tolerant varieties and low rate fumigation of Telone II added an increased benefit to both management techniques. Several new products have been tried with the expectation of being effective at managing sugar beet cyst nematodes. Through a number of field efficacy trials we have determined that several new products such as BCS-AR83685, Movento and Nimitz have proven effective at reducing nematode populations. However, phytotoxicity complications in some products have negated the effects of the reduction of populations. New experiments have been proposed and are currently underway to address these concerns. Biological seed treatments in combination with tolerant variety field efficacy trials have also proven effective in sugar beet nematode management. Multiyear trap crops field and greenhouse experiments have also produced positive results with an increase in sugar beet yield and a decrease in nematode populations depending on the variety of trap crops chosen.