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MANAGING RHIZOCTONIA OF SUGARBEET WITH AZOXYSTROBIN BASED ON SOIL TEMPERATURE

Abstract

Rhizoctonia solani (Kühn) AG-2-2 causes seed rot damping-off of seedlings, and root and crown rot of sugarbeet. Disease severity and losses are highest in warm, wet conditions where sugarbeet is planted intensively, and in close rotation with alternate host crops, such as edible beans and soybean, of the pathogen. Practices such as using non-host crops in the rotation, early planting, reduced cultivation and avoid throwing infected soil into crowns, and planting tolerant varieties that have 10-15% less yield potential compared to approved varieties, can be used to manage Rhizoctonia. Recently, Azoxystrobin, labeled for use in sugarbeet, was shown to effectively control *R. solani* when applied before infection occurred in artificially-inoculated disease nurseries. Research was conducted in an infected field to determine if azoxystrobin, applied at different times based on soil temperature can control Rhizoctonia. The temperature regimes were 50-55 F, 56-61 F, 62-67 F, 68-73 F, 74-79 F, 80-85 F, >85 F, and an untreated check. One application of azoxystrobin applied at 694 ml/ha between 56 F and 73 F resulted in complete protection from Rhizoctonia. Azoxystrobin applied at 50-55 F and 74-79 F resulted in a few plants killed by Rhizoctonia; however the number of surviving non-infected plants were not significantly different from the treatments where no plants were killed. Fungicide applied after a soil temperature of 79 F was attained did not protect the plants from Rhizoctonia, and the numbers of plants killed were not significantly different from the untreated check.

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SPORE TRAPS AND PATTERN OF DISPERSAL OF CERCOSPORA BETICOLA CONIDIA IN SUGARBEET FIELDS

Abstract

Cercospora beticola is the most damaging foliar pathogen of sugarbeet. Information on the time of primary discharge and dispersal of Cercospora conidia, the progressive increase in conidial population, and the eventual exhaustion of conidia dispersal can be useful in managing Cercospora leaf spot in sugarbeet. Spore traps were installed in four sugarbeet fields in 2002, and two sugarbeet fields in 2003. Conidia were trapped on 645 mm^2 of a microscope slide that was covered with petroleum jelly, and on sticky-tape in a 7-day volumetric spore trap. The slides and tapes were replaced weekly and examined microscopically to determine the number of spores trapped per week. In 2002, highest number of conidia were trapped in late August to mid-September, which corresponded to the time that Cercospora leaf spot was most prevalent in the sugarbeet fields. Locations that had higher number of conidia had more severe disease. Data for 2003 will also be presented with graphics of the spore traps.