

EVALUATION OF AT-PLANTING FUNGICIDE TREATMENTS FOR CONTROL OF *RHIZOCTONIA SOLANI*

Project Description (Continuing): *Rhizoctonia solani* causes damping-off and crown and root rot on sugarbeet throughout the growing season. Diseases caused by *R. solani* have been the most common problems in samples received by the NWROC sugarbeet plant pathology laboratory for several years. There continue to be questions about how various at-planting fungicide applications control Rhizoctonia damping-off and crown and root rot.

Project Leader: Ashok K. Chanda, University of Minnesota, NWROC

Other Personnel Involved: Jason Brantner and other personnel at NWROC

Project Location: University of Minnesota, NWROC

Objectives: Compare various at-planting fungicide treatments for control of Rhizoctonia damping-off and crown and root rot

Materials and Methods: The trial will be established at NWROC, inoculated with *R. solani* AG 2-2 IIIB. Treatments will be arranged in a randomized block design with 4 replicates. A susceptible sugarbeet variety will be planted-to-stand so efficacy in disease control and effect on emergence of seed and in-furrow treatments are reflected in stand and yield data. Registered and non-registered seed (**Kabina, Vibrance, Systiva, Kabina + Metlock, Metlock, and potential products in the pipeline**) and in-furrow (**Quadris, Azteroid, and potential products in the pipeline**) fungicides will be evaluated on a susceptible cultivar. The experiment will include a *Rhizoctonia*-inoculated and non-inoculated control with no fungicides. Data will be collected for emergence, stand, Rhizoctonia crown and root rot ratings, yield, and quality.

Time Line of Anticipated Accomplishments:

2018

March-April: Prepare inoculum of *R. solani* on sterilized barley

May: Plant trials, collect emergence and stand data

June: Continue collecting stand data

September-October: Assess Rhizoctonia crown and root rot, harvest for yield and quality

November-December: Analyze data and write Sugarbeet Research & Extension Reports

Progress Toward Objectives of On-going Projects:

Results from 2017 will be included in the Sugarbeet Research and Extension Reports. This trial was established at the NWROC. Inoculation with *R. solani* (35 kg/ha) and planting was done on May 1. There were significant differences between treatments for initial stands at 2, 3, 4, 5, 6, 7, and 9 weeks after planting (WAP). Stand emergence continued until 3 WAP. From 2 to 4 WAP, untreated control and in-furrow applications had lower stands compared to seed treatments. By 9 WAP the difference between some seed treatments (Kabina and Vibrance) and in-furrow applications became smaller whereas few seed treatments (Systiva and Metlick Suite + Kabina) still had higher stands. From 2 to 9 WAP there were significantly lower stands in in-furrow treatments compared to seed treatments based on orthogonal contrast analysis. All the harvest parameters except sugar lost to molasses (SLM) were not significantly different between seed and in-furrow treatments and untreated control.

Budget Requested: \$16,709.00

LABOR: SALARIES (12,189.00) AND FRINGE (3,170.00)

EQUIPMENT (OVER \$250.00): NONE

SUPPLIES: 1,000.00

TRAVEL: NONE

LEASES: NONE

OTHER: 350.00

TOTAL: \$16,709.00