

POINDEXTER, STEVEN S.* , THOMAS J. WENZEL, Michigan State University Extension, One Tuscola St., Suite #100, Saginaw MI 48607. **Field Evaluations of Standard Seed Treatments Compared to Metlock Suite/Rizolex and Kabina in Combination With/Without Quadris Applied T-band In-furrow at Planting.**

ABSTRACT

Sugarbeet seed treatment research traditionally has been conducted in the greenhouse or small research trials with disease inoculated soil. The derived results are then surmised as expected results in the field. Field research was conducted on new sugarbeet seed treatments Kabina and Metlock Suite with Rizolex to evaluate several objectives: how well do these seed treatments work in the field under natural disease conditions, assess short-term interactions on emergence with/without Quadris in-furrow and determine what long term effect these seed treatments have on late season Rhizoctonia. Specifically can sugarbeet producers stop using Quadris in-furrow and rely solely on the seed treatments and foliar applications.

Six trials in 2013-14 were randomly located in the "Thumb" region of Michigan. Trials were conducted utilizing grower cooperators planting and harvesting equipment. Quality samples were taken at harvest and yields measured with a sugarbeet dump cart with digital scales. Seed treatments were commercially applied to different varieties from the same seed lot. Seed treatments included Metlock Suite/Rizolex and Kabina compared to the standard (Metalaxyl-Thiram-TACH 20). These new treatments are used in conjunction with standard seed treatments to enhance Rhizoctonia control. All seed treatments were tested alone and in conjunction with a 3-4 inch T-band application of Quadris applied at planting in-furrow. Each treatment was replicated at least 4 times in each trial. All trials and treatments received a 6-8 leaf application of Quadris. Treatments were monitored for effect on emergence and seedling disease. Late season Rhizoctonia counts were taken in late summer in 1200 foot of row in each replication. Seedling disease levels were generally very low for all trials except one.

Current and previous research has indicated Quadris applied alone T-band in-furrow can slightly slow down beet emergence and occasionally reduce stands by 3-5% when seedling disease is not present. In the presence of Rhizoctonia seedling disease, Quadris in-furrow will increase final stand. Results indicate Kabina seed treatments appear to have no effect on speed of emergence and can be used in conjunction with Quadris in-furrow. Metlock Suite/Rizolex with or without Kabina generally appeared to not effect speed of emergence. When Quadris is applied in-furrow with Metlock Suite/Rizolex the speed of emergence was significantly slowed in 3 trials but did not significantly reduce final stand.

Studies conducted by other researchers has concluded that seed treatments of Kabina or Metlock Suite/Rizolex and in-furrow Quadris are effective in controlling Rhizoctonia seedling disease. Long term (late season) Rhizoctonia control has not been demonstrated with seed treatments. In Michigan about 95% of the growers are using Quadris either by T-band in-furrow application, foliar

application or both. Almost 50% are using the combination of in-furrow and foliar applications. This is most often done in fields with moderate to heavy Rhizoctonia pressure. There is a need to understand if seed treatments can bridge the gap in controlling Rhizoctonia until the 4-8 leaf stage foliar applications and if Quadris in-furrow is still needed for long term control.

In 2013, results from two field trial with Rhizoctonia seedling disease showed an improvement of stand over the check when using Quadris in-furrow either with or without Metlock Suite. Metlock Suite alone provided a smaller and not significant increase in stand. The combination of the two did not improve stand over the increase provided by Quadris alone. Additionally, in one of the trials, Quadris in-furrow treatments did significantly reduce dead/dying beets from late season Rhizoctonia by more than half when compared to either Metlock or standard seed treatments alone. In that trial, a yield improvement of about 1 ton/acre occurred with the in-furrow treatments.

Three field trials conducted in 2014 with Kabina and Metlock Suite had almost no seedling disease to evaluate efficacy of seedling disease control. The 2014 trials did not show any detrimental or synergistic effect of using Kabina and Quadris in-furrow together. In all of the trials in both 2013 and 2014, any treatments with Quadris in-furrow improved late season Rhizoctonia control, though some were at a non-significant level. Seed treatments appeared to have no effect on late season Rhizoctonia. In moderate to heavy Rhizoctonia fields, in furrow applications of Quadris can offer both seedling disease and improved long term Rhizoctonia control.