MICHIGAN STATE UNIVERSITY EXTENSION

Michigan State University AgBioResearch

Evaluation of in-furrow and banded fungicide applications to manage Rhizoctonia root and crown rot, 2024

Chris Bloomingdale and Jaime Willbur, Michigan State University

Location: Frankenmuth (SVREC)	**Treatment Timings:** In-Furrow & Banded (6-8 leaf stage)
Planting Dates: May 31, 2024	**Pesticides:** see table
Soil Type: Loam	**O.M.:** 5.08 **pH:** 7.9
Replicates: 4	**Variety:** BTS-1122

Summary: Significant differences in the percent stand loss were observed among tested program ($P < 0.0001$). Programs 7-10 and the non-inoculated control (No. 2) had lower rates of stand loss, ranging from 0.2 to 2.7%, than the inoculated control, which had a 23.1% stand loss. Root disease index values also differed significantly among fungicide programs ($P < 0.0001$). Programs 6-10 and the non-inoculated control had lower disease indices than the inoculated control. Yield estimates were significantly different among programs ($P < 0.01$). Programs 7-10 and the non-inoculated control had significantly greater yield than the inoculated control. No differences were detected among RWST values. It was noted that programs with a banded application resulted in lower disease and greater yield parameters.

Table 1. End-of-season stand loss, Rhizoctonia root rot index, yield, and RWST from the tested fungicide programs.

No.	Treatment; Rate[a]; Timing[b]	Stand Loss (%)[c,d]	Disease Index (%)[e]	Yield (t/A)	RWST[f]
1	Inoculated Control[g]	23.07 a-c	39.48 ab	1.70 cd	218.0
2	Non-Inoculated Control[g]	2.71 d	0.00 d	4.30 ab	230.1
3	GWN-12047; 32 fl oz; IF	13.38 b-d	24.43 bc	1.68 cd	222.3
4	GWN-12047; 48 fl oz; IF	29.75 a	44.83 a	2.05 b-d	225.3
5	GWN-12047; 64 fl oz; IF	20.04 a-c	25.50 bc	2.15 b-d	213.0
6	Quadris; 13.9 fl oz; IF	8.90 cd	13.95 cd	3.98 a-c	230.4
7	GWN-12047; 48 fl oz; IF GWN-12047; 48 fl oz; B	0.62 d	3.75 d	4.95 a	232.3
8	GWN-12047; 48 fl oz; IF Quadris; 13.9 fl oz; B	0.16 d	6.60 d	4.50 ab	226.9
9	Quadris; 13.9 fl oz; IF GWN-12047; 48 fl oz; B	0.16 d	3.38 d	4.93 a	234.8
10	Quadris; 13.9 fl oz; IF Quadris; 13.9 fl oz; B	0.44 d	1.05 d	4.50 ab	241.1
11	EXP Biocontrol; 14 fl oz; IF	24.88 ab	32.33 ab	1.30 d	215.2
12	EXP Biocontrol; 14 fl oz; IF EXP Biocontrol; 14 fl oz; B	29.20 a	32.05 ab	1.20 d	225.1

[a] All rates are listed as a measure of a product per acre.
[b] In-furrow treatments (IF) were applied at planting (May 31), banded applications (B) were applied at the 6-8 leaf stage (Jul 9).
[c] Stand loss percentages calculated from initial stand counts collected Jun 17 and final dead beet counts collected Sep 10.
[d] Column values followed by the same letter were not significantly different based on Fisher's Protected LSD (α=0.05).
[e] Disease index was calculated by multiplying the Rhizoctonia root rot incidence (0-100%) by the mean symptomatic root severity (1-7) and dividing by 7.
[f] Recoverable white sugar per ton of beets.
[g] Non-treated control.