EFFICACY OF QUADRIS ON CONTROL OF RHIZOCTONIA ROOT AND CROWN ROT IN 2003

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Introduction and Objective

In recent years, Rhizoctonia diseases, especially mid – to late-season root and crown rot, have been an increasing problem in sugarbeet fields in Minnesota and North Dakota. However few Rhizoctonia tolerant varieties are available, and these varieties typically have yield potentials 10-15% less than the best approved varieties. Research shows that Quadris applied before infection occurs effectively control Rhizoctonia root and crown rot. However it is difficult to know when infection occurs in the field. As such,
Quadris was applied based on soil temperature to determine if Rhizoctonia root and crown rot can be effectively controlled.

Procedures and Preliminary Results

Research was conducted at Amenia, North Dakota. Beta 3800 sugarbeet seeds were planted with a John Deer MaxEmerge 2 planter into plots 11 feet in width (6 22-inch wide rows) and 30 feet in length on April 24. Seeds were placed 1.25 inches deep and 4 inches apart in rows that were 22 inches wide. Counter was applied at 11.9 lb/acre at planting to control sugarbeet root maggot. This experiment was arranged in a randomized complete block design with four replications. Quadris was applied at 9 fl oz per acre in a 7 inch band to the four middle rows of six row plots using a back pack sprayer. Dates of application were May 13 and 19; June 2, 16, and 20; and August 17. Fertilization was done according to standard recommendations for sugarbeet. Plots were kept weed free using micro-rates of herbicides recommended for sugarbeet and hand-weeding. Fungicides were applied on July 17 and August 8 to control Cercospora leaf spot.

The preliminary results are shown in Table 1.

Table 1. Effect of Quadris applied at different soil temperature on Rhizoctonia control at Amenia, ND 2003

Treatment	Date Air/ Soil Temp.	Recoverable Sucrose/A	Recoverable Sucrose/T	Net T/A	% Sucrose	% LTM	Dead Plant/ 100' row
Quadris 50-55^{0}F	05-13 68/53	5614 a	389 a	14.5 ab	20.79 a	1.38 a	0.5 b
Quadris 56-61^{0}F	05-19 73/56	5834 a	378 abc	15.5 a	20.29 a-d	1.38 a	0.0 b
Quadris 62-67^{0}F	06-02 72/64	6491 a	390 a	16.7 a	20.80 a	1.32 a	0.0 b
Quadris 68-73^{0}F	06-16 84/73	5552 a	387 ab	14.4 ab	20.73 a	1.38 a	0.0 b
Quadris 74-79^{0}F	06-20 87/75	6003 a	385 abc	15.6 a	20.58 ab	1.33 a	0.8 b
Quadris 80-85^{0}F	08-17 81/82	4069 b	359 bc	11.4 c	19.31 bcd	1.38 a	20.0 a
Quadris	NO 0	3548 b	356 c	10.0 a	19.16 d	1.38 a	16.6 a

85^0F >	>85^0 F						
Untreated Check		4145 b	355 c	11.7 bc	19.18 cd	1.42 a	18.0 a
LSD (P=0.05)		1263	30	2.9	1.38	0.22	13.2

Means followed by the same letter do not significantly differ.

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