

Soybean Aphid Insecticide Application Timing Study - Otter Tail

Cooperator: Mark Schoening
Nearest Town: Underwood
Soil Type: Sandy Loam
Tillage: None
Previous Crop: Soybeans
Variety: Novartis SO8R4
Planting Date: 5-20-05 (good soil moisture)



Planting Rate Target: 200,000
Row Width: 7.5 inches
Fertilizer: 100 material pounds of 21-0-0-24/a
Herbicide: 5-30-05 Roundup at 2pt/a
 7-21-05 Roundup at 1.5 pt/a and CropBooster at 2 pt/a
Insecticide: Warrior at 3 oz., 12 gallons water and 35 psi/a
Treatment Dates: Repeat treated = 6-28, 7-7, 7-20, 8-3, 9-6
 R1 = 7-7, R3 = 7-18, R5 = 8-3, R6 = 8-16, R7 = 9-6
Harvest Date: 9-30-05
Experimental Design: Randomized Complete Block (3 replications)
Plot Size: 90 ft. wide by 500 ft. long

Purpose of Study:

To evaluate soybean aphid populations in relation to crop stage and application timing to better understand aphid economic thresholds.

Results:

Insecticide application timing was identified as a critical component in soybean aphid damage control since the 2002 season. NW and WC MN have annually been subjected to “late” season aphid pressure. This research demonstrates significant yield protection with insecticide usage starting at early flowering (R1) and continuing through beginning seed (R5). It also points out, full seed (R6) and beginning maturity (R7) applications are too late to protect yield. Soybean aphid colonies were subjected to heavy rain and wind events throughout the season before naturally declining in numbers towards the end of August. Natural predator populations were continually low across the site.

No significant differences were detected with percent moisture, test weight, pods/plant, pods/node, seed weight, and percent protein measurements.

Treatment	Aphids per Plant						Yield	Node/Plant	Oil	
	Date Stage	6-28-05 V - 4	7-7-05 R - 1	7-18-05 R - 3	8-2-05 R - 5	8-16-05 R - 6				9-6-05 R - 7
Mult. Treat		11	0	21	25	9	2	44.1	14.6	16.7
R - 1		1	3	0	113	467	88	44.7	15.4	16.9
R - 3		1	2	65	2	72	3	44.9	13.7	17.1
R - 5		2	2	77	355	18	1	46.3	13.4	16.8
R - 6		0	1	98	727	1342	2	42.6	13.3	17.0
R - 7		1	1	47	445	1514	622	41.5	15.4	16.7
Non Treat		0	2	72	285	622	619	41.6	14.4	16.9
LSD 0.10		NS	1.4	NS	NS	447	450	2.3	1.0	0.2

Partnership/Funding:

Minnesota Soybean Research and Promotion Council
 NW Research and Outreach Center

For additional information:

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