

Rotation Effects on Soybean Cyst Nematode Populations

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Objective

To assess the effects of rotation and soybean cultivar selection on soybean cyst nematode populations.

Background

Crop Year:	1997	Previous Crop:	1994-Corn
Cooperator:	Beck Bros.	Previous Crop:	1994-Corn
County/Town:	Henry/ Napoleon	Planting Date:	Soybeans: May 28, 1995
Major Soil Type:	Millgrove Loam (sandy)	Harvest Date:	Soybeans: October 12, 1995
Tillage:	None		

Materials and Methods

A 3.1-acre site known to be infested with soybean cyst nematode was selected. In 1995, four soybean cyst nematode-resistant varieties (Asgrow 3134, Asgrow 3431, AgriPro 3460, Callahan 3377) and two susceptible varieties (Resnick, Asgrow 3237) were each replicated three times and randomly planted into the field. Individual plots were 15' x 500'. Soil samples were randomly collected at four-inch depths in each of the 18 plots. Samples were taken in June and September each year (1995 soybeans, 1996 corn, 1997 corn). Cyst counts were conducted by Dr. Paulette Pierson, Ohio State University Department of Plant Pathology, and reported as number of soybean cyst nematode eggs per 200 cc of soil.

Results

Variety	Average Number of Cyst Nematode Eggs/200 cc Soil					
	Soybean		Corn		Corn	
	June 1995	September 1995	June 1996	September 1996	June 1997	September 1997
Asgrow 3134 - (R)	2880	213	1427	373	1120	120
Resnick - (S)	3813	9947	5093	2840	907	133
AgriPro 3460 - (R)	3827	667	1467	1053	773	120
Asgrow 3431 - (R)	2840	1840	1760	680	867	93
Callahan 3377 - (R)	2560	533	1067	307	800	107
Asgrow 3237 - (S)	3280	7840	3200	1613	813	427
LSD (0.05%)	2877	3887	2764	1865	696	203
Average Susceptible	3546	8893	4146	2226	860	280
Average Resistant	3027	813	1430	603	890	110

Summary and Notes

Soybean cyst nematode egg counts for susceptible varieties were significantly higher than resistant varieties at the end of the soybean growing season. At the end of the first year of corn, cyst counts after one susceptible variety (Resnick) were significantly higher than three resistant varieties. After two years of corn rotation, cyst counts decreased to non-critical levels for all varieties in the trial.

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