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Be Careful with Susceptible Soybean Variety in Rotation to Manage SCN

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Abstract
The soybean cyst nematode (SCN) can be managed effectively by growing SCN-resistant soybean varieties. There currently are more that 700 SCN-resistant soybean varieties available in maturity groups 1, 2 and 3 for Iowa growers. Information on the varieties is available in ISU Extension publication Soybean Cyst Nematode-Resistant Soybean Varieties for Iowa (PM 1649, pdf).

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

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Be Careful with Susceptible Soybean Variety in Rotation to Manage SCN

March 17, 2008

By Greg Tylka, Department of Plant Pathology

The soybean cyst nematode (SCN) can be managed effectively by growing SCN-resistant soybean varieties. There currently are more than 700 SCN-resistant soybean varieties available in maturity groups 1, 2 and 3 for Iowa growers. Information on the varieties is available in ISU Extension publication Soybean Cyst Nematode-Resistant Soybean Varieties for Iowa (PM 1649, pdf).

Although not 100 percent effective at preventing reproduction of the nematode, SCN-resistant soybean varieties usually prevent increases in SCN population densities and can even decrease the nematode’s numbers throughout a growing season. But since some nematode reproduction occurs on resistant varieties, there is the potential for an SCN
population to become “resistant to the resistance” as resistant varieties are repeatedly
grown.

Soybean varieties that are resistant to SCN possess resistance genes from one of four
sources of resistance (which are breeding lines). To reduce the chance of a SCN
population bring selected for that can readily reproduce on resistant varieties, Iowa State
University recommends growers use varieties with different sources of resistance in
different years. However, almost all SCN-resistant varieties available for Iowa growers
have the PI 88788 source of resistance (“PI” stands for plant introduction). So rotating
varieties with different sources of SCN resistance is difficult, if not impossible.

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*Number of maturity group O, I, II, and III SCN-resistant soybean varieties available to
Iowa soybean growers, 1991 – 2007. Data were not compiled in 1992 or 2005. The red
portion of each bar represents the number of SCN-resistant soybean varieties with
resistance from a specific source other than PI88788.*

Another tactic that Iowa State University recommends to consider using to slow the
development of an SCN population that reproduces well on resistant varieties is growing
a susceptible (non-resistant) variety periodically after resistant varieties have been grown
a few times. Iowa State University cautions that SCN population densities must be low
(2,000 eggs per 100 cc soil or less) before a susceptible variety should be grown in an
SCN-infested field. And a good, representative soil sample should be taken from a field
prior to determine the SCN population density before considering growing a susceptible
variety.

SCN causes much greater damage and seems to reproduce at a greater rate in hot, dry
growing seasons than in years with adequate to excess rainfall. So if a severe drought is
anticipated, growers might opt not to grow a SCN-susceptible variety in an SCN-infested
field, even if SCN population densities are low.

The *Iowa State University management recommendations for SCN* (IPM 63, pdf) are
available online.
Resources

Check Fields for Soybean Cyst Nematode

www.soymbeaninfo.info

www.planthealth.info/scn_scout.htm

www.isuscntrials.info

Greg Tylka is a professor of plant pathology with extension and research responsibilities in management of plant-parasitic nematodes.

Category: Crop Production Insects and Mites

Crop: Soybean

Tags: soybean cyst nematode Soybean SCN resistance

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