SCN-resistant soybean varieties for 2007: Many choices, few sources of resistance

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SCN-resistant soybean varieties for 2007: Many choices, few sources of resistance

Abstract
The soybean cyst nematode (SCN) is a major yield-limiting pest of soybeans throughout the Midwest that can be managed very effectively through use of SCN-resistant soybean varieties. Resistant varieties reduce the amount of SCN reproduction (and population density buildup) that occurs while producing significantly greater soybean yields than non-resistant (susceptible) varieties in fields infested with the nematode. The Iowa State University Extension publication titled Soybean cyst nematode-resistant soybean varieties for Iowa has recently been updated, is now available, and lists SCN-resistant soybean varieties available to Iowa growers in late maturity group 0 and maturity groups 1, 2, and 3.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

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The soybean cyst nematode (SCN) is a major yield-limiting pest of soybeans throughout the Midwest that can be managed very effectively through use of SCN-resistant soybean varieties. Resistant varieties reduce the amount of SCN reproduction (and population density buildup) that occurs while producing significantly greater soybean yields than nonresistant (susceptible) varieties in fields infested with the nematode.

The Iowa State University Extension publication titled Soybean cyst nematode-resistant soybean varieties for Iowa has recently been updated, is now available, and lists SCN-resistant soybean varieties available to Iowa growers in late maturity group 0 and maturity groups 1, 2, and 3. The publication also indicates the iron deficiency chlorosis score, relative maturity, glyphosate resistance, and source of SCN resistance for the SCN-resistant varieties. Contact information for the seed suppliers also is included in the publication.

There are 743 SCN-resistant soybean varieties included in the publication for use in 2007, 94 in late group 0/group 1, 337 in maturity group 2, and 312 in maturity group 3. Most (90%) of the varieties are Roundup Ready®. The number of SCN-resistant varieties available in the current publication is over 100 more than has ever been available in past years.

Despite the record-high number of SCN-resistant soybean varieties available to Iowa growers for the 2007 growing season, only 24 of the varieties have SCN resistance from a source other than PI88788. With repeated use, SCN populations may build up or overcome PI88788 resistance because the resistant soybean varieties allow low levels of SCN reproduction, and SCN completes three or more generations in a single growing season. This can lead to selection of SCN populations capable of effectively reproducing on PI88788. So to maintain long-term soybean productivity in Iowa, it is critical that there are large numbers of soybean varieties with different sources of SCN resistance. The percentage of SCN-resistant soybean varieties with resistance other than PI88788 is 3 percent for the 2007 growing season; that's down dramatically from 15 percent of 586 SCN-resistant soybean varieties in 2004.

The lack of diversity of SCN resistance also is reflected in a list of SCN-resistant varieties compiled annually by University of Illinois Extension. In the most recent version of their list, published in January 2006 (available on the Internet at https://netfiles.uiuc.edu/tjw/www/cover.htm), there are 974 SCN-resistant varieties listed for maturity groups 0 through 3, but only 5 percent have resistance from a source other than PI88788.

Single copies of the list of SCN-resistant soybean varieties available for Iowa growers can be obtained by calling the Department of Plant Pathology at 515-294-1741 or e-mailing Carla Harris at charris@iastate.edu. Ask for Iowa State University Extension publication PM 1649. Alternatively, the publication can be accessed on the Web at www.extension.iastate.edu/Publications/PM1649.pdf.

Field performance data (yields and SCN control) of SCN-resistant soybean varieties in variety trial experiments conducted throughout Iowa can be viewed at www.isuscnvarietytrials.info. And additional information about the biology, distribution, and management of SCN is available at www.soyscystinfo.org.

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