



SOYBEAN FACTS

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Selecting Soybean Cyst Nematode Resistant Varieties

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Planting soybean cyst nematode (SCN)-resistant varieties is one of the most effective tactics available to growers for controlling this pest. But not all resistant varieties are created equal, so soybean producers should take care when selecting SCN-resistant soybean varieties.

The most important characteristic to look for in any soybean variety is yield. When selecting SCN-resistant varieties, look for yield data taken from SCN infested fields or plots. Select several varieties and evaluate their performance on your farm.

Next, look at the ability of the resistant varieties to inhibit SCN reproduction in infested fields. Varieties vary widely in their ability to reduce SCN reproduction and population densities. Since SCN population density directly affects long-term soybean yields, population reduction should be a primary goal in any SCN management strategy. When evaluating SCN-resistant varieties, farmers are advised to collect soil samples at planting and at harvest or as close to those times as possible. In effective SCN-resistant varieties, the numbers of nematodes recovered from the harvest sample should be lower than the one collected in the spring. After growing resistant varieties for a few years, SCN populations could be low enough to return to a SCN susceptible variety for one year.

There are three main genetic sources for SCN resistance: PI88788, PI548402 (Peking) and PI437654 (CystX or Hartwig). All three allow a low level of SCN reproduction to occur. In a single growing season, this is not a problem. However, if varieties with the same resistance

source are continually planted in a field, the SCN population capable of feeding and reproducing on the resistant variety can reach damaging levels. Growers can prevent this situation by planting SCN resistant varieties with different sources of resistance and adding non-host crops to their rotations.

The final attribute to consider when selecting SCN-resistant varieties is disease tolerance or resistance. The severity of sudden death syndrome and brown stem rot is increased by SCN infestations. Selecting varieties that are tolerant to these diseases usually improves performance in fields with a history of infestations.

Seed dealers are an excellent source of information on disease tolerance and sources of SCN resistance. Additionally, printed materials are available from several universities.

Iowa State University conducts the most comprehensive SCN-resistant variety trials in the U.S. The annual report, ISU Extension publication IPM 52, provides data on yields and the effect each variety has on SCN reproduction and population reduction. The report is available online at:

<http://www.plantpath.iastate.edu/dept/labs/tylka/node/23>

Iowa State University also provides a complete listing of all the SCN resistant varieties and the source of their resistance. This information is available at:

www.extension.iastate.edu/Publications/PM1649.pdf



The University of Minnesota also conducts SCN-resistant variety trials including yields and SCN population reduction effects. The Minnesota data is available online at: <http://sroc.cfans.umn.edu/>.

The Michigan Soybean Performance Report provides information regarding SCN resistance for varieties that have been screened by the seed companies and have known susceptibility or resistance. Varieties are identified as being resistant (R), moderately resistant (MR) moderately susceptible (MS) or susceptible (S). The source of the resistance is not identified in the report so you should obtain this information from your seed dealer before ordering SCN resistant varieties.

An updated searchable database for the 2010 Michigan Soybean Performance Report is available online at:

<http://www.soybeanyielddata.msu.edu>.

The searchable database enables soybean producers to input specific search criteria such as soybean cyst nematode resistance, phytophthora resistance and maturity to identify the highest-yielding varieties having the selected characteristics.

This fact sheet was originally produced by the Soybean 2010 project and will be updated as needed by its successor, the Soybean Management and Research Technology (SMaRT) program. The SMaRT program was developed to help Michigan growers increase soybean yields and farm profitability. Funding for SMaRT is provided by MSU Extension and the Michigan Soybean Promotion Committee. Additional information about increasing soybean yields and profitability can be found online at <http://www.michigansoybean.org>