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## Possible Breakdown of SCN Resistance Topic of New Webcast

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# Integrated Crop Management NEWS

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## Possible Breakdown of SCN Resistance Topic of New Webcast

By Greg Tylka, Department of Plant Pathology and Microbiology

Iowa farmers produce soybeans profitably in fields infested with the soybean cyst nematode (SCN) by growing SCN-resistant soybean varieties that yield well and prevent large increases in SCN egg population densities. There are [hundreds of SCN-resistant soybean varieties for Iowa](#). Almost all of the varieties contain SCN resistance genes from a single breeding line, called PI 88788.

Because of widespread, repeated use of varieties with the same PI 88788 source of resistance, many SCN populations have developed increased reproduction on that type of resistance. It is no longer uncommon to see SCN females on roots of SCN-resistant soybean varieties in the Midwest (Figure 1).



**Figure 1. SCN females on roots of an SCN-resistant soybean variety with PI 88788 SCN resistance.**

How does increased SCN reproduction on soybean varieties with the PI 88788 source of resistance affect soybean yields and the buildup of SCN egg population densities (numbers) in the soil? Results of Iowa State University field experiments reveal the answers.

### Experimental results show PI 88788 resistance is still working

Each year, SCN-resistant soybean varieties are studied intensively in nine experiments throughout Iowa as part of the Iowa State University SCN-resistant Soybean Variety Trial Program. The research is funded by the

- Resistant soybean varieties are available to manage the soybean cyst nematode (SCN).

- Most SCN-resistant varieties for Iowa have the same resistance genes, from a single breeding line called PI 88788.

- Many Iowa SCN populations have developed increased reproduction on PI 88788 SCN resistance.

- ISU variety trial experiment data indicate that PI 88788 SCN-resistant varieties are still an effective management tool.

- Free webcasts on the Plant Management Network's Focus on Soybean explain the situation and put problem into perspective.

soybean checkoff through the Iowa Soybean Association. Since 2007, more than half of the fields in Iowa where variety trial experiments were conducted had SCN populations with elevated (greater than 10 percent) nematode reproduction on the PI 88788 source of resistance. The 10-percent level of SCN reproduction is a critical level above which plants are not considered resistant. Some of the SCN populations in the experimental fields had 35 to 50 percent reproduction on PI 88788.

But despite the increased SCN reproduction, soybean varieties with the PI 88788 source of SCN resistance in the experiments usually yielded the highest. Also, SCN population densities did not increase dramatically on the resistant varieties in the experiments. These results were fairly consistent throughout the past five years (results available online at [www.isuscntrials.info](http://www.isuscntrials.info)).

Overall, the results indicate that SCN-resistant soybean varieties with the PI 88788 source of resistance are not “failing”. The resistant varieties are still producing profitable soybean yields and preventing large increases in SCN population densities.

Because SCN is considerably more damaging in hot, dry years than in growing seasons with more moderate weather, soybean varieties with PI 88788 SCN resistance may suffer significant yield loss due to nematode feeding this season in fields with SCN populations that have elevated reproduction on PI 88788. The 2012 growing season is the type of environmental conditions under which increased SCN reproduction on soybean varieties with PI 88788 SCN resistance may result in significant yield reductions.

### **New webcast puts situation in perspective**

A new webcast explains the factors leading to the build up of SCN populations with elevated reproduction on PI 88788 and discusses the results of numerous variety trial experiments where high yields were produced by PI 88788 SCN-resistant soybean varieties in fields infested with such SCN populations. The webcast was developed and is hosted by the [Focus on Soybean](#) section of the [Plant Management Network](#).

The full-length webcast is 25 minutes long and a 4½-minute-long executive summary webcast highlights the “take-home” points of the full-length presentation. [Both webcasts are available here](#).

The webcasts are available for viewing free to the public through November 30, 2012. But a subscription is needed to access most content on the Plant Management Network.

Currently, soybean farmers and crop advisers can sign up for free, individual one-year subscriptions to the Plant Management Network sponsored by the United Soybean Board; simply establish a complimentary account by filling out [this online form](#).

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