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Soybean cyst nematode will cause early senescence of soybeans

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Soybean cyst nematode will cause early senescence of soybeans

Abstract

Soybean cyst nematode is a widespread and serious pest of soybeans in Iowa. But many fields that are infested with the pest go undiagnosed because the nematode often does not cause obvious aboveground symptoms, at least not until population densities become extremely high.

Disciplines

Agriculture | Plant Pathology

River shipping problems will complicate the job of moving grain out of the western Corn Belt to free up storage space for the upcoming harvest, especially in central and northern Iowa. Part, but not all, of the lost export capacity can be offset by rerouting grain to the Pacific Northwest, Houston, the Great Lakes, and Atlantic ports.

Hurricane Katrina and soybean losses

Heavy rains from Katrina occurred some distance into Mississippi, eastern Louisiana, and parts of Alabama, as well as in western Tennessee and Kentucky.

If half of the unharvested soybean crop in the states of Louisiana, Mississippi, Alabama, Georgia, Florida, and South Carolina were lost, U.S. soybean production would be reduced by about 1.4 percent. That is assuming no increase or decrease in the soybean crop north of those states.

With the usual relationship between changes in supplies and changes in price, that would boost the season average price by about 3.5 percent. That in turn would translate into an expected rise of about 20 cents per bushel in the marketing year average Iowa soybean price. Losing half of the crop in that area would substantially exceed past experiences with this kind of storm.

Rain as far north as the eastern Corn Belt may have a slight positive effect on pod filling, but could have caused some damage in parts of Tennessee and Kentucky. These two states in the August crop report were forecast to produce 3.5 percent of U.S. production (98 million bushels).

Bob Wisner is a professor of economics with responsibilities in agriculture and extension.



Plant Diseases

Soybean cyst nematode will cause early senescence of soybeans

by Greg Tylka, Department of Plant Pathology

Soybean cyst nematode is a widespread and serious pest of soybeans in Iowa. But many fields that are infested with the pest go undiagnosed because the nematode often does not cause obvious aboveground symptoms, at least not until population densities become extremely high.

One fairly consistent, albeit somewhat indirect, symptom of SCN parasitism that is apparent at this time of the year is early senescence of the soybeans. In the mid-1990s, the Iowa State University SCN-resistant soybean variety trial program conducted variety trials on SCN-infested fields and nearby noninfested fields. The variety trials in both infested and noninfested fields were planted at a location on the same day, but the trial in the infested site invariably was harvested 7 to 10 days before the noninfested site, illustrating the effect of SCN on hastening maturation of the soybean crops.

The early senescence of soybean caused by SCN is illustrated in the diagram on page 179. The squares in the map in the diagram represent 3-foot by 3-foot (9 ft²)

square areas of the field. Three 1-inch diameter, 8-inch deep soil cores were taken from each square in May. The aerial photograph shows the sampled area on September 10. The map of egg population densities has an “M”-shaped pattern of higher egg counts that corresponds fairly well with the “M”-shaped pattern of maturing plants in the September 10 aerial photograph.

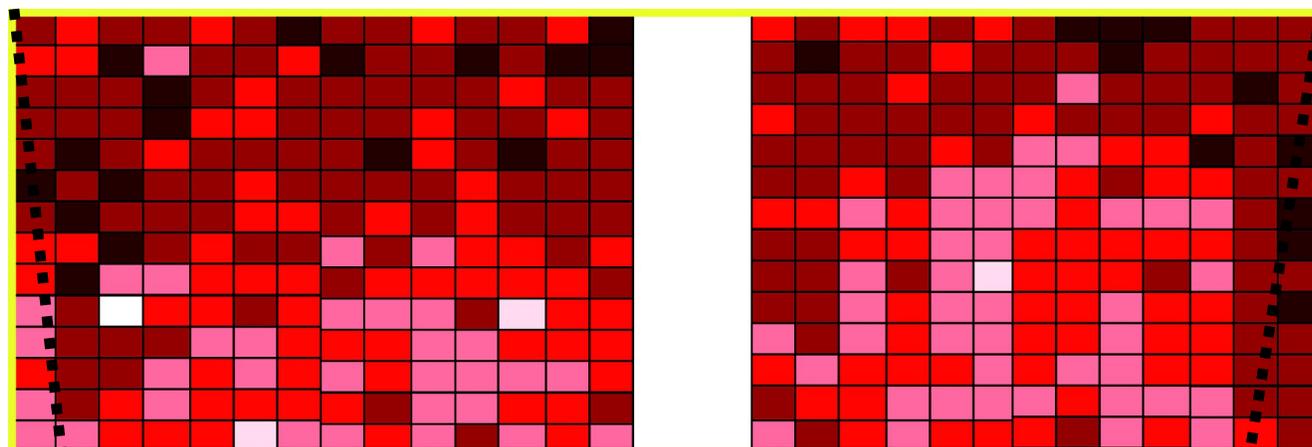
Growers and agronomists should consider checking for the presence of SCN in fields that have areas that mature earlier with no apparent reason. To check fields in the fall for the presences of SCN, soil samples should be collected and sent to a qualified laboratory for analysis. Soil samples should be comprised of well-mixed soil obtained from soil cores collected from 15 to 20 different locations within an area of 20 acres or so. Each core should be collected from a total depth of 6 to 8 inches. Large fields should be divided up into smaller areas from which a 15- to 20-core soil sample should be collected.

Soil samples can be tested for SCN by the Iowa State University Plant Disease Clinic. Samples should be accompanied by a completed *Plant Nematode Sample Submission Form* (ISU Extension publication PD 32). Currently, there is a \$15 per sample charge for processing each sample. Detailed instructions on how to collect a representative soil sample for detection of SCN can be found on the back of PD 32. Single copies of this publication are available free of charge from county

extension offices. Also, along with an ISU Extension publications link to PD 32, additional information about SCN can be found on the Web at www.soybeancyst.info.

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

Effect of soybean cyst nematode on senescence of soybeans



Eggs per 100 cm³ soil—sampled at planting (May)



Aerial photograph taken September 10

Eggs per 100 cm³ soil

