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Yield maps for SDS management

X. B. Yang

Iowa State University, xbyang@iastate.edu

Peter Lundeen

Iowa State University, plundeen@iastate.edu

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Yield maps for SDS management

Abstract

During the winter, take the time to study your yield maps. They can provide clues for disease management. In this article, we discuss how to manage disease by using a yield map provided by Lyle Stacy of Jefferson County where sudden death syndrome (SDS) has been a problem for years. Yield reduction from SDS damage was evident this past season. Stacy followed SDS development in this field for several years and is working with his client to combat this problem. The yield map (see page 188) of this 55-acre soybean field illustrates a few tips for SDS management.

Keywords

Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

INTEGRATED CROP MANAGEMENT

Yield maps for SDS management

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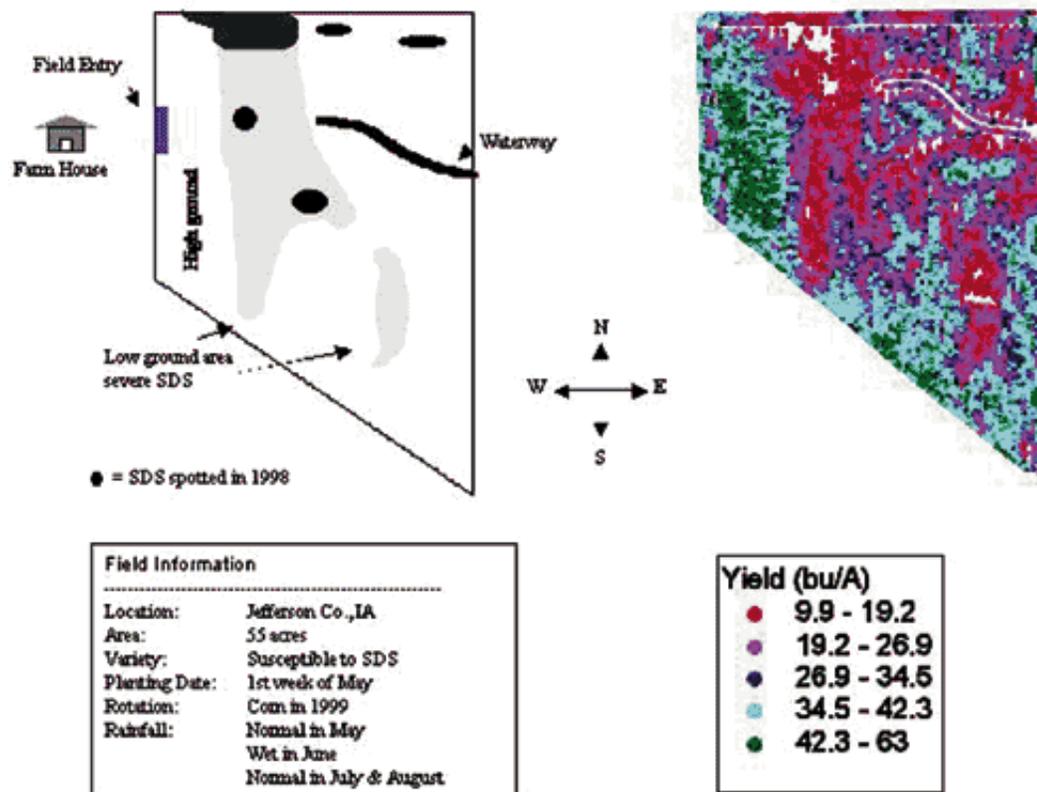
Close-up of soybean plants defoliated from sudden death syndrome.

[Enlarge](#) [1]

Early scouting

In 1998, the disease was spotted only in a few small areas (see topographical map) and was not severe enough to warrant immediate action. This season, the disease spread across almost the entire field. This sporadic nature of SDS makes disease prediction difficult. Therefore, if hot spots are found, action should be taken to manage the risk, even though yield reduction may not be significant.

Yield map for a field Infested with SDS



Topographical and yield maps of an SDS-infested field.

High-risk areas

Comparison of the topographic map (left) and yield map (right) shows that the lower ground of the field has a greater risk of disease expression. Areas around the waterway also had more yield reduction. In low spots where water drainage is poor, disease develops much faster and can cause damage even in June.

Several areas where disease was not spotted in 1998 also had severe disease this past season (see right half of yield map). It is likely that the disease was very mild in these areas in 1998. But SDS can build up quickly when weather conditions are favorable. So, it is important to detect the disease in the early stage of introduction.

Do not use susceptible varieties

When hot spots are found, it would be safer not to use susceptible high-yielding varieties even though tolerant varieties may not yield as well as susceptible varieties at present. When SDS strikes, it may take several crops to make up the loss. In this field example, average yield was under 30 bu/acre this year, down from the mid-50s. The grower would need a few good crops to cover the economic loss. Although resistance is under development, only tolerant varieties are available from many seed companies in Iowa. Variety information is available in the November issue of Iowa Soybean Review. We also provide an independent cultivar evaluation (will appear in the December 2000 ICM) and information is available in ISU Extension publications.

Planting date and rotation

This field was planted in the first week of May and planting early often is associated with higher disease risk. Delaying planting by 2 weeks should help reduce disease risk. This field has been in corn–soybean rotation. However, no information is available on use of rotation to manage this disease.

SDS will continue to be a problem to Iowa soybean production as suggested by a risk assessment study. This summer, outbreaks of this disease extended to some growers in central Iowa as severe yield reduction, including a 200-acre field in Nevada. If you found SDS in your fields, study your yield maps and do not underestimate the risk of this disease.

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<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2000/11-20-2000/ymsds.html>

Links:

[1] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/sds/defolclosexb.html>

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