

Biology and control of Sclerotinia stem rot of soybean

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Overview of project objectives

Sclerotinia stem rot of soybean (SSR) can be a significant yield-limiting disease in the North Central region. Combinations of management strategies have been utilized to limit losses from SSR. These include reduced tillage, crop rotation and canopy management, as well as timely fungicide application. The overarching goal of the project was to provide stakeholders with concrete control measures; and improve awareness and knowledge of SSR in the North Central region.

The project addressed factors that affect SSR development and management including:

- Host resistance, identifying and implementing novel host resistance mechanisms;
- Investigating factors affecting fungicide efficacy in the North Central states; and
- Developing new outreach and disease management strategies.

Key results

The research team developed a model that predicts the probability of apothecia of *S. sclerotiorum* being present in soybean fields during the R1-R3 flowering period. The model was used to develop a smart phone application, “Sporecaster,” which turns a few screen taps into an instant risk forecaster of apothecia in a soybean field. Also, the team identified a genetic component in soybean that can be manipulated to achieve an adequate level of resistance against white mold.

Benefit to farmers

The smart phone application “Sporecaster” will allow farmers to precisely detect risk areas and efficiently deploy fungicides. Although several factors are believed responsible for the increased occurrence of white mold, none may be more important than management practices or environmental conditions that promote rapid and complete crop canopy closure.

Links

[Biology and control of Sclerotinia stem rot of soybean](#) USB National Soybean Checkoff Research Database

Android install: <https://play.google.com/store/apps/details?id=ipcm.soybeandiseasecalculator>

Apple install: <https://itunes.apple.com/us/app/sporecaster/id1379793823?mt=8>