

2008 SOYBEAN SEEDLING DISEASE SURVEY

<http://pestsurvey.wi.gov/>

In response to very wet conditions in spring of 2008, a survey of soybean fields was conducted with focus on root rot diseases. From June 23 to July 7, 2008, 50 randomly chosen fields were surveyed for plants that exhibited symptoms such as wilting, chlorosis and stem lesions. Samples were tested at Plant Industry Laboratory for early season fungal pathogens such as *Phytophthora* root rot caused by *Phytophthora sojae*.

Infection rates of soybean roots with *P. sojae* were higher than initial morphological test data for summer of 2008 indicated. *P. sojae* diagnoses based on culture and morphology yielded only four positive finds. Follow up molecular testing of DNA from soybean root tissue revealed an additional seven positive samples. This brought the total percentage of *P. sojae* infected samples from 8% to 20% (Figure 1). This implies that of the 50 fields where declining soybeans were collected, one-fifth were infected by *P. sojae*. More information on *Phytophthora* root management is presented on this website: <http://www.plantpath.wisc.edu/soyhealth/prr.htm>.

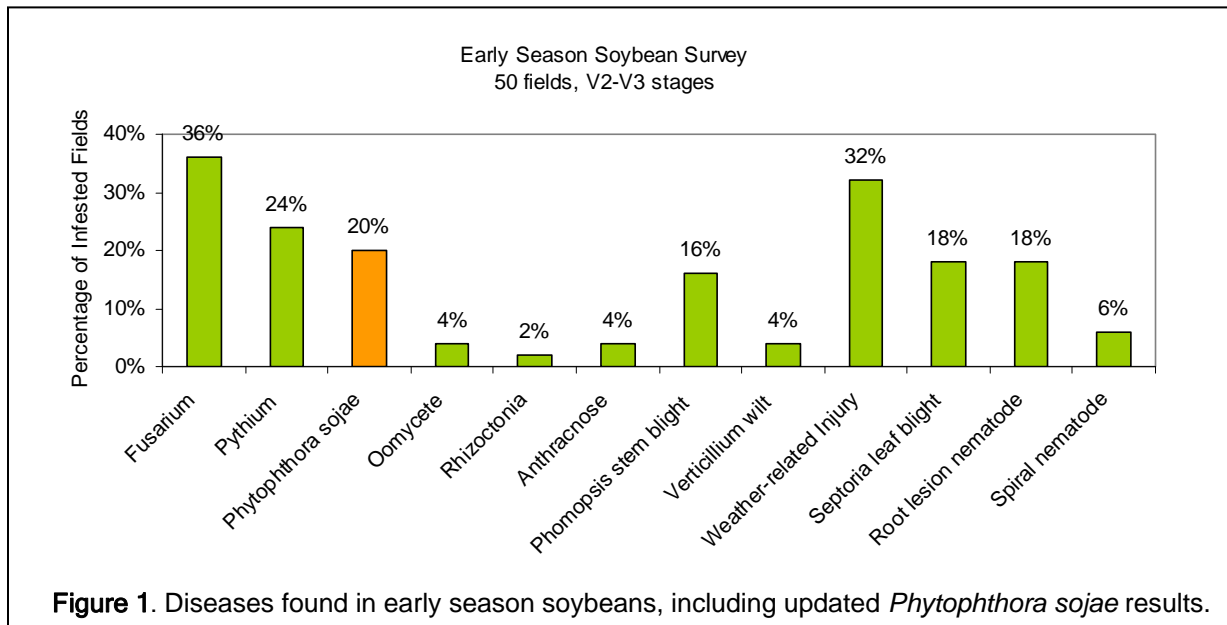


Figure 1. Diseases found in early season soybeans, including updated *Phytophthora sojae* results.

Seedlings from 37 of 50 fields (74%) where declining soybeans were sampled tested positive for a variety of root diseases. Some seedlings were infected with multiple pathogens or disorders. Root rot diseases caused by the following organisms were diagnosed: *Fusarium* sp.: 36%, *Pythium* sp.: 24%, *Phytophthora* sp.: 20%, unspecified Oomycetes: 4%, *Rhizoctonia* sp.: 2%. Some isolates of *Fusarium* sp. and *Pythium* sp. probably represent secondary infections.

Soybean plants from 12 of the 50 sites (24%) exhibited diseases of the lower stem. Of the 50 fields sampled, *Phomopsis* sp. accounted for 16%; Anthracnose and *Verticillium* wilt each infected 4% of declining plants.

Extreme weather conditions (flooding, frost, high winds) injured soybean seedlings at 32% of surveyed sites. Eighteen percent of root samples were infested with root lesion nematodes (*Pratylenchus* spp.), and 6% were infested with spiral nematodes (*Helicotylenchus* spp.). Spiral nematodes have to be present in higher numbers than observed to impact yield. Nematodes were

observed emerging from root lesions of fine roots. Soil testing for soybean cyst nematode (SCN) was deferred to summer and fall. Please see the 2008 Soybean Cyst Nematode survey report for more information.

Authors: Adrian Barta, WI DATCP Pest Survey, adrian.barta@wi.gov, 608-224-4592
Anette Phibbs, WI DATCP Plant Industry Laboratory, anette.phibbs@wi.gov, 608-266-7131