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Nineteen Species of Pythium Associated with Damped-off Soybean Seedlings in Iowa

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Nineteen Species of Pythium Associated with Damped-off Soybean Seedlings in Iowa

Abstract

During the 2011 growing season, extension soybean pathologists from the north central states conducted a [seedling disease survey](#) to identify oomycete pathogens that cause damping-off in soybean. The survey is part of a larger project that is being funded by USDA NIFA.

Keywords

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Nineteen Species of *Pythium* Associated with Damped-off Soybean Seedlings in Iowa

Alison Robertson, Department of Plant Pathology and Microbiology

Soybean seedling disease survey

During the 2011 growing season, extension soybean pathologists from the north central states conducted a [seedling disease survey](#) to identify oomycete pathogens that cause damping-off in soybean. The survey is part of a larger project that is being funded by USDA NIFA.

In the first year of this study, 54 *Pythium* species and two *Phytophthora* species, including *Phytophthora sojae*, were recovered from damped-off soybean seedlings collected from throughout the north central region. In Iowa, 19 *Pythium* species and *Phytophthora sojae* were recovered. Many of the species recovered have been reported as pathogens of soybean seedlings, but some of the species have not. To determine if these other species are pathogenic on soybean, we will have to do "Koch's postulates." This is the accepted scientific method for identifying the causal agent of a disease.

Further research will include comparing the pathogenicity and aggressiveness among and within species, and assessing the sensitivity of each species to fungicides used in seed treatments.

In 2012 this survey will continue, with additional funding from the United Soybean Board used to identify fungal pathogens (*Fusarium* spp. and *Rhizoctonia* species); pathogens associated with damping off of soybean.

Data from these studies will add to our knowledge of soybean seedling disease and lead to enhanced management through improved use of seed treatment fungicides and use of resistance.



Saturated soils favor seedling disease caused by Pythium species.

Locating soybean fields with damping off

This growing season, I am again looking for soybean fields that have damping-off. I need to collect 50 diseased seedlings from the field and bring them back to the lab for processing.

If you know of a field with damping-off, please email me at alisonr@iastate.edu or call me at 515-294-6708, so that we can coordinate sampling of the field.

Alison Robertson is an associate professor in the plant pathology and microbiology department with extension and research responsibilities; contact her at alisonr@iastate.edu or phone 515-294-6708.

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