

A Preliminary Survey of Plant Diseases Impacting Small Farms in Mississippi

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Introduction

Small farmers in the southern region of the U.S. face serious challenges in managing plant diseases, weeds, and insects in crops and forest ecosystems. Yield losses due to sub-tropical climate conditions, weather extremes (e.g., hurricanes, drought, tornados), and pest outbreaks have been substantial. Socially disadvantaged small farmers are more vulnerable to losses due to lack of Integrated Pest Management (IPM) knowledge, limited resources, and challenging circumstances for managing plant pests. Typically, most IPM projects have focused on large farms. This is a unique project in that it addresses Small Farm IPM.

Information is need on the important plant diseases and casual agents impacting small farms in order to develop effective research, extension, and educational programs to address small famers integrated pest management needs and concerns. A preliminary plant disease survey was conducted in on six farms in southwest and central Mississippi to document the various plant pathogens impacting small farms.

Mississippi Counties Surveyed for Plant Diseases on Small Farms



Collaborating Farms

- Indian Springs Farmers Cooperative
- Natchez Community Garden
- Environmental Learning Center Jackson Public Schools
- We Will Go Ministries Community Garden
- Tougaloo Agri-Growth Initiative

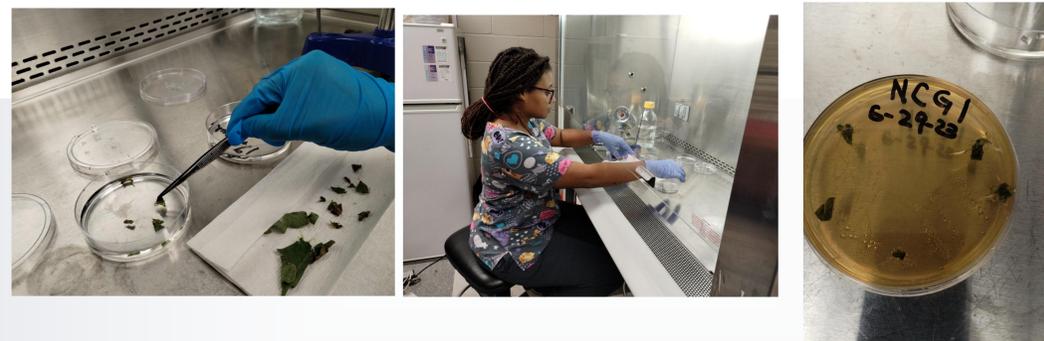


Methods

Plant Disease Survey: Plants showing signs and symptoms of disease were sampled



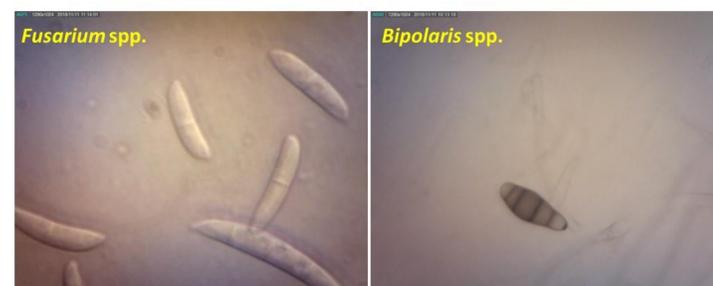
Diseased Plant Tissue were Plated on Culture Media for Pathogen Identification



Results: Fungi Isolated From Diseased Plant Tissue



Fungi Associated With Disease Plant Tissue



Conclusions

- Seven small farms were surveyed in Adams, Claiborne, Hinds, Forest and Pearl River counties June-July 2023.
- A wide variety of fungal plant diseases were identified such as southern blight, early blight, cercospora leaf spot on squash.
- Bacterial diseases identified included fire blight on pears, bacterial leaf spot on peppers, and pierce's disease on muscadine grapes.
- Over 30 fungal morphotypes were isolated and these cultures will be sent for DNA identification.
- Future research will include a state wide plant disease survey of underserved small farmers fruit and vegetable crops in Mississippi.

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