Unwrapping the Mysteries of Fungal Foliar Diseases of Onion in New York
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The Need: The fungal disease Stemphylium leaf blight (SLB) has emerged as a major threat to New York state’s $52M-a-year onion industry. The disease causes premature leaf death leading to decreased size and yield of bulbs. Premature leaf death also affects the plant’s ability to absorb sprout inhibitors applied near harvest, which impacts how long and well onion crops can be stored. Greater understanding of this leaf blight is needed to help growers manage the disease and adopt more effective use of fungicides to promote sustainable practices in the state’s onion industry.

The Approach: The project was designed to answer some basic questions about SLB to assist growers manage it. Researchers were seeking to confirm the causal agent, assess onion varieties for relative resistance to SLB, identify agronomic factors that might need to be changed to reduce the susceptibility of plants to infection and disease carryover between seasons, and to identify fungicide resistance in the Stemphylium population.

The Impacts: The project has educated onion growers in NY about SLB and its resistance to fungicide. With this increased understanding of SLB, growers can develop improved integrated management strategies and more rational and effective use of fungicides. For example, fungicides shown to be effective against SLB but at risk of developing resistance were identified. Two fungicides to which resistance had become widespread have been removed from use. Widely adopted by growers was a fungicide program that restricts the number of fungicide applications in a season within a particular mode of action group and rotates between fungicides with different modes of action. These steps are part of our work to support more sustainable crop management practices in NY’s successful onion industry.