
Plant Pathology Seminar Series

“*BOTRYTIS* AND OTHER FUNGAL PATHOGENS OF PEONIES”

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Peonies (*Paeonia* spp.) are herbaceous perennials grown as cut flowers and in landscapes for their ornamental value. Over the last decade, worldwide peony production and sales have grown with their increase in popularity as cut flowers. Peony farmers and the extension personnel who support the industry have relied on nearly 100 year-old research on peony pathogens for identification and management of diseases. The research contained herein is an effort to update the information available on peony diseases. Over the course of 4 years, surveys for *Botrytis* and other fungal plant pathogens of peonies were conducted to identify fungi causing disease in peony farms across the United States. The results of these surveys revealed up to 14 *Botrytis* species infecting peonies in new production fields in Alaska, many of which appear new to science, and a number of other fungal genera on peonies that have never before been reported in the state in which they were found, including at least four peony pathogens new to the United States. One of the new *Botrytis* species identified on peonies in Alaska was also found on grapes in Italy and is formally described as *B. euroamericana* in this dissertation. This species and other novel *Botrytis* species found in Alaska may have moved into new peony fields from hosts in the adjacent native Alaskan ecosystems. Peony farms surveyed in rootstock production areas in Washington, Oregon, and The Netherlands do not contain the same diversity. In addition to *Botrytis*, *Graphiopsis chlorocephala* was found to be an important pathogen of peonies in the United States. Other fungi found infecting peonies in the United States for the first time included: *Mycocentrospora acerina*, *Pilidium concavum*, multiple *Colletotrichum* spp., and a *Botryosphaeria* sp. In an effort to further provide tools for assessing movement of fungal species on peony, a suite of 16 *B. paeoniae*-specific microsatellite markers were developed using an Ion Proton next-generation sequencing platform for use in future population genetics studies. This study represents one of the first times that the Ion Proton platform has been used successfully for microsatellite discovery in fungi.

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PhD Exit Seminar



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