

Virulence of fungicide-resistant *Botrytis cinerea* isolates on detached grapes, peppers, blueberries, and tomatoes treated and untreated with boscalid and fluopyram

Benjamin Halleck¹, Dr. Margaret Ellis¹, Dr. Dave Goorahoo¹, Dr. Rachel Naegele²

¹Department of Plant Sciences, California State University, Fresno, ²USDA ARS SJVASSC

Contact: Benjamin Halleck, Department of Plant Sciences, California State University, Fresno, 2415 E. San Ramon, Fresno, CA 93740-8033 M/S AS72; benhalleck@mail.fresnostate.edu

Botrytis cinerea is the causal agent of both pre- and post-harvest diseases that commonly affects grapes, strawberries, peppers, tomato, and blueberry. Because of its rapid reproduction cycle and genetic diversity, *B. cinerea* is a high-risk pathogen for fungicide resistance development. Fungicide resistance is an increasingly common problem in California specialty crops and resistance monitoring programs are essential to protect the efficacious use of currently available fungicides. Little research has been published on the virulence of fungicide resistant *B. cinerea* isolates assayed on different hosts, and therefore was the objective of this study. Single spore isolates collected from strawberry, grape, and blueberry previously identified as resistant or susceptible to boscalid and fluopyram were used to inoculate detached grapes, mini-peppers, cherry tomatoes, and blueberries with and without the presence of the fungicides. Lesion width and disease severity was recorded twice per assay. There were significant differences ($P < 0.05$) for host, isolate, and fungicide and their interactions for disease severity, disease incidence, and lesion width. Results from this study indicated significant differences for certain *B. cinerea* isolates among the hosts tested and that some fungicide resistant isolates may have an unknown fitness advantage or disadvantage depending on the host plant. However, no consistent significant differences in virulence were observed for boscalid or fluopyram-resistant *Botrytis cinerea* isolates with or without the presence of fungicides compared to the control treatment.