Abstract

Eighteen apple cultivars were tested in the field and laboratory for their relative susceptibility to one of the bitter rot pathogens, *Colletotrichum acutatum*. Fruit were inoculated in the field at 3 to 4 weeks preharvest with cheesecloth strips soaked in a conidia suspension. In the laboratory, detached fruit were inoculated using a conidia suspension in capped, sterile microcentrifuge tubes attached to the fruit surface with modeling clay. The same fruit as above also were inoculated over a wound on the side opposite the nonwounded inoculation. Fruit were tested for relative susceptibility to the fungus with five criteria: disease incidence and severity of attached fruit in the field, disease incidence and severity of detached fruit in laboratory inoculations of nonwounded fruit, and disease severity in laboratory inoculations of wounded fruit. Relative cultivar ranks from field tests were not reproducible in the 2 years studied, whereas laboratory tests showed moderate reproducibility with nonparametric rank correlation tests. Based on the laboratory data from 2 years of study, cultivars were classified into four relative-susceptibility groups: most susceptible: Pristine, Honeycrisp, and Ginger Gold; highly susceptible Yataka, Sansa, Arlet, and Enterprise; moderately susceptible: Sunrise, Golden Supreme, PioneerMac, GoldRush, Golden Delicious, and Creston; and least susceptible: Fuji. Compared to previous cultivar rankings, the results of the present study indicate that new apple cultivars from the first NE-183 planting show no improvement in resistance to *C. acutatum*.