

Abstract

Evaluation of strawberry resistance to anthracnose is generally limited to the crown rot phase of the disease. The major objective of this study was to develop a screening test for resistance to anthracnose fruit rot (*Colletotrichum acutatum*) using detached strawberries under controlled-environment conditions. Inoculation was carried out on detached fruits harvested at the stage when they were turning white-pink. Lesion diameter and percentage of diseased fruits (disease incidence) were measured. An incubation temperature of 18°C allowed a better discrimination between resistant and susceptible genotypes than 25°C. At 18°C and 8 days after inoculation, 26 genotypes differed greatly in susceptibility to anthracnose fruit rot, and lesion size ranged from 0 to 17 mm with disease incidence of 10 to 100%. A relationship between lesion size and disease incidence was established. The 26 genotypes were classified into three groups of susceptibility according to lesion size and percentage of diseased fruits. The susceptible group included nine genotypes with lesion sizes of 8.2 to 14.4 mm and 81 to 100% diseased fruits. In this group, Pajaro and Elsanta were the most susceptible. The four genotypes belonging to the resistant group, Dover, Capitola, US159, and US438, showed small fruit lesion sizes of 0.4 to 1.0 mm and a limited disease incidence (10 to 17%). The resistance of two genotypes to anthracnose fruit rot was evaluated under field conditions (plastic tunnel). The relatively resistant genotype, Sequoia, displayed reduced incidence of anthracnose fruit rot in the sections closest to the source of inoculum compared with the susceptible genotype Elsanta.