Abstract

Sooty blotch and flyspeck (SBFS) fungi blemish the cuticle of apples. Previous studies reported that the SBFS complex is comprised of four species. This is study surveyed the SBFS complex from nine orchards in four Midwestern states (USA). The LSU analyses of the rDNA inferred that 30 species were Dothideomycetes; one species was within the Pleosporales, 27 were within Dothideales, and two species could not be placed at the ordinal level. The LSU sequences of 17 Dothideales species clustered with LSU sequences of known species of *Mycosphaerella* . Post-harvest dips in commercial disinfestants were used to remove SBFS signs. Apples were dipped for 7 or 15 min in various concentrations of sodium hypochlorite, hydrogen peroxide and peroxyacetic acid mixtures, or soap, then brushed and rinsed on a grading line. A 7-min dip in 800 ppm chlorine resulted in an increase from 25% and 55% to 100% "Extra Fancy" grade for 'Jonathan' and 'Golden Delicious' apples, respectively, and increased market value by 31 and 14%, respectively. Blemishes were removed more effectively from 'Jonathan' and 'Macintosh' apples than from 'Golden Delicious'. SBFS fungi were removed differentially by the dip treatments. Leaf wetness duration (LWD) was measured within apple tree canopies in four Iowa orchards. Variability of LWD and the timing of dew onset and dry-off were characterized for twelve positions in the canopy of trees. The upper and eastern portion of the canopy was the first to form dew and the last to dry. The lower, western portion of the canopy usually averaged about 2 hours of LWD per day less than the top of the canopy, and was the last zone where dew formed and the first to dry off. When LWD were input to a warning system for the SBFS complex, timing of fungicide-spray thresholds varied by as much as 30 days among canopy positions.