

Title Responses of whitefly and poinsettias to insecticidal controlled atmospheres.
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Citation Journal of the American Society for Horticultural Science Vol: 125 (2000); 513-517

Abstract

Eggs, larvae, pupae, and adult stages of greenhouse whitefly (*Trialeurodes vaporariorum* Westwood) and silverleaf whitefly (*Bemisia argentifolii* Bellows & Perring) were exposed to insecticidal controlled atmospheres at 20 deg C or 30 deg C. Mortality data were calculated for each stage and results demonstrated that reduced-O₂ atmospheres (an O₂ level of <2 micro L.L-1 balance in N₂) resulted in faster and higher mortality than elevated-CO₂ atmospheres (25% or 50% CO₂). Responses, from the least to most tolerant stage was adult 90% of adults, larvae, and eggs and pupae was 2, 4, and 8 hours, respectively. Increasing the treatment temperature from 20 to 30 deg C reduced the treatment time to one-half that of 20 deg C. Treatment time required to achieve complete elimination of the insects also caused phytotoxicity symptoms on poinsettias (*Euphorbia pulcherrima* Willd. ex Klotzsch), thus, limiting use of insecticidal controlled atmospheres as the sole means for managing whitefly.