

Abstract

Diphenylamine/thiabendazole (DPA/TBZ) drench mixtures are applied to apple fruit at receipt at storages to prevent superficial scald and postharvest decay. Outbreaks of blue mold and Mucor rot (caused by species of *Penicillium* and *Mucor piriformis*, respectively) often occur in fruit that have been treated with contaminated drench mixtures. To determine the rate at which spores of pathogenic species of *Penicillium* accumulated in commercial drenches, inoculum density was assessed in samples from eight DPA/TBZ drench tanks after each 100-200 bins treated. In addition, wounded apple fruit (cv. 'Red Delicious') were dipped in drench tank mixtures at 250 bin intervals. The proportion of fruit with lesions was determined about 90 days after treatment. Population densities of *Penicillium* spp. increased linearly up to about 60 bins treated/100 gal tank capacity ($R^2 = 0.72$ and $R^2 = 0.65$ for astatic vol. and static vol. drenchers, respectively). Similarly, the proportion of wounds with lesions increased linearly ($R^2 = 0.72$) with inoculum density up to about 45% of fruit with lesions at 1200 cfu/ml. This information can be used to assess relative risk of decay from drenching practices.