

Abstract

Fungicides were applied using a XEDA Electrofog machine to Red Delicious apple and d'Anjou pear fruit in Washington State and Fuji apple fruit in Chile. Formulations of imazalil, thiabendazole (TBZ), fludioxonil, and pyrimethanil were applied to bins of Red Delicious apple and d'Anjou pear fruits immediately after harvest. Decay incidence in both *Penicillium expansum* inoculated and uninoculated fruit was assessed following 6 mo CA storage. Bins of Fuji apples were either fogged with fludioxonil, pyrimethanil, or TBZ, or drenched with TBZ plus DPA from a commercial drencher. Fruit were stored at 10 °C for 8 wk and decay incidence in fruit inoculated with *Botrytis cinerea* was assessed. Decay in uninoculated fruit was assessed after an additional 4 wk of storage. In all trials, pyrimethanil was significantly more effective at controlling disease in inoculated fruit than all other fungicides. Pyrimethanil controlled 73% of blue mold infections in Red Delicious apples compared to untreated fruit vs. 8-19% control from other fungicides. In pear it controlled 60% of blue mold infections compared to untreated fruit, whereas other fungicides only controlled 1-8% of infections. Gray mold was the predominate disease occurring in uninoculated fruit. All treatments with exception of imazalil significantly reduced gray mold incidence in both apple and pear fruits. In the second trial, pyrimethanil was again the most effective fungicide for control gray mold in inoculated fruit (91.2% control vs. 0% control from fludioxonil, and 29% and 23% control from TBZ fogging and drenching, respectively). In unwounded fruit, however, both pyrimethanil and fludioxonil gave similar levels of disease control (65.9% control and 58.9% control, respectively). Disease incidence in uninoculated fruit was not affected by fogged TBZ and was 50% greater in TBZ drenched fruit than in untreated fruit. Pyrimethanil appears to be the most promising candidate fungicide for commercial development for fogging applications.