

Abstract

Botrytis cinerea is responsible for a major portion of postharvest decay in winter pears in the Pacific Northwest. The baseline sensitivity levels (mean EC(50) values) of a wild-type *B. cinerea* population to thiabendazole and iprodione were 6.66 and 0.56 mg/liter, respectively. *B. cinerea* from commercial orchards not treated with a benzimidazole had significantly lower incidence of resistance (0.59%) to a discriminatory concentration of thiabendazole at 10 mg/liter than did isolates from orchards in which benomyl had been applied for experimental purposes (16.0%), unsprayed control trees in benomyl-sprayed orchards (5.34%), and isolates from packinghouses where thiabendazole was applied as a prestorage drench or packingline spray (3.23%). The mean EC(50) value of isolates in the wild-type population was lower than those of resistant isolates from all other sources. High-level thiabendazole resistance (EC(50) > 100 mg/liter) was found in 0.20% of isolates from unsprayed commercial orchards, 9.33% of isolates from benomyl-sprayed orchards, and 2.67% of isolates from unsprayed control trees in these benomyl-sprayed orchards. In isolates from packinghouses where a thiabendazole line spray was applied, 1.52% had high-level thiabendazole resistance. All isolates from all pear-related sources tested were sensitive to iprodione at 10 mg/liter. This study provides evidence supporting current recommendations of a single postharvest application of a benzimidazole to control decay caused by *B. cinerea*, and no application of benzimidazole fungicides in the orchard.