

Abstract:

A yeast, strain ID 244 of *Candida oleophila*, isolated from the surface of dry date fruit was evaluated for biocontrol potential of gray mold caused by *Botrytis cinerea* on grape cultivar 'Ruby Seedless' (*Vitis vinifera* L.) under cold storage conditions. A low rate of Euparen-tolerant cells of *C. oleophila* with a low dose of Euparen 50% WP (250 ppm) gave significantly better mold control at 0 °C than either Euparen or the yeast alone and was comparable to disease control achieved using a commercially recommended high dose of Euparen (1250 ppm). The combination treatment also maintained some of the fruit quality characteristics. The population dynamics of the yeast on grapes were studied in the orchard and during storage following the application of 3×10^5 cfu/mL. The population size of the yeast treatment and the yeast-Euparen (250 ppm) combined treatment increased from approximately 103 cfu/g of berries in the orchard to 6.5×10^5 cfu/g and 2.5×10^4 cfu/g after 30 days of storage, respectively, while it declined to 101 cfu/g for the yeast-Euparen (1250 ppm) treatment. In laboratory studies, the yeast strain was found to be tolerant to the low rates of Euparen (250 and 750 ppm).