

Abstract

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The effects of allyl isothiocyanate from mustard essential oil on the postharvest pathogens and decay of strawberry No.70 (cv. Toyonoka) fruits were studied by fumigating the mycelia of *Botrytis* sp., *Rhizopus* sp. and *Pestalotiopsis* sp. on malt extract agar at room temperature (28°C) and 87% relative humidity with allyl isothiocyanate at 0.01, 0.03 and 0.05 ml/l air for 3, 6, 9, 12 and 24 hours. It was found that allyl isothiocyanate 0.01 ml/l air at each period delayed the mycelial growth of the three fungi, while the concentrations of 0.03 and 0.05 ml/l air at all fumigation periods inhibited the mycelial growth. Fumigation with 0.01 ml/l air for 3 hours delayed spore germination of the three fungi. However, fumigation with 0.01 ml/l air for 6, 9, 12 and 24 hours and with 0.03 and 0.05 ml/l at all the periods inhibited spore germination of all the fungi.

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Fumigation of strawberry fruits with allyl isothiocyanate at 0.01 ml/l air for 6, 9, 12 and 24 hours was able to delay the decay of fruits kept at 5 and 10°C without any effect on the fruit quality giving the fruit storage life of 10 days, whereas the fruits fumigated for 3 hours and those without fumigation kept at the same temperature had only 6 days of storage life. However, fumigation with 0.03 and 0.05 ml/l air caused unusual odor and taste including unacceptability by the consumer. Fumigation of the fruits kept at room temperature had no effect on delaying the decay of fruits.