

### **Abstract**

The ability of *Candida saitoana* to induce systemic resistance in apple fruit against *Botrytis cinerea* was investigated. To separate the antagonistic activity of *C. saitoana* from its ability to induce resistance, the antagonist and the pathogen were applied in spatially separated wounds. In fresh apples, *C. saitoana* applied 0 or 24 h before inoculation with *B. cinerea* showed no effect on lesion development caused by *B. cinerea*. When applied 48 to 72 h preinoculation with *B. cinerea*, however, *C. saitoana* reduced lesion diameter by more than 50 and 70%, respectively, compared with wounding. *C. saitoana* had no effect on lesion development on stored apples, regardless of the lag period between yeast treatment and inoculation with *B. cinerea*. In addition to inducing systemic resistance, *C. saitoana* increased chitinase and beta-1,3-glucanase activities with a higher accumulation in fresh than in stored apples. In fresh apples, the onset of systemic resistance to *B. cinerea* coincided with the increase in chitinase and beta-1,3-glucanase activity in systemically protected tissue. These studies show that *C. saitoana* is capable of inducing systemic resistance in apple fruit and indirectly suggest that antifungal hydrolases are involved in the observed systemic protection.