

Title Salicylic acid enhances biocontrol efficacy of *Rhodotorula glutinis* against postharvest *Rhizopus* rot of strawberries and the possible mechanisms involved

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Abstract

The potential of using *Rhodotorula glutinis* alone or in combination with salicylic acid (SA) for the control of postharvest *Rhizopus* rot of strawberries, and their effects on enzyme activities of fruits were investigated. The combination of *R. glutinis* (1×10^8 CFU ml⁻¹) with SA (100 µg ml⁻¹) resulted in a significant reduction in the disease incidence and lesion diameter of *Rhizopus* rot on the strawberry fruits at 20 °C and 4 °C, and more so than with SA or yeast alone. SA at the concentration of 100–1000 µg ml⁻¹ significantly inhibited spore germination of *Rhizopus stolonifer*. About 100 µg ml⁻¹ of SA did not inhibit the growth of the antagonistic yeast, and could significantly increase the population growth of *R. glutinis* in strawberry wounds at 20 °C. SA, combined with *R. glutinis*, increased the activity of strawberry host defence enzymes (POD) and cell wall lytic enzymes (β-1,3-glucanase).