

Title Enhancement of biocontrol efficacy of *Rhodotorula glutinis* by salicylic acid against gray mold spoilage of strawberries

Author Hongyin Zhang, Longchuan Ma, Song Jiang, Hetong Lin, Xiaoyun Zhang, Lingling Ge and Zhanli Xu

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Abstract

The control activity of *Rhodotorula glutinis*, salicylic acid (SA), alone or in combination, on gray mold spoilage and natural spoilage of strawberries was investigated. *R. glutinis* as stand-alone treatment, and the combined treatment of SA at 100 µg/mL with *R. glutinis* significantly reduced the disease incidence and lesion diameter of gray mold spoilage, respectively at both 20 °C and 4 °C. After 20 d storage at 4 °C, the combination of SA and *R. glutinis* was more effective than *R. glutinis* or SA alone treatment. At the concentration of 100 µg/mL, SA had no inhibition on the mycelial growth of *Botrytis cinerea* in PDA, however, it significantly inhibited spore germination of *B. cinerea* in PDB. The combination of *R. glutinis* and SA was the most effective treatment in controlling the natural spoilage of strawberries, and resulted in low average natural spoilage incidence in 6.3% or 6.3%, respectively, compared with 37% or 46.7% in the water-treated control fruit following storage at 20 °C for 3 d or 4 °C for 7 d followed by 20 °C for 2 d.