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Evaluation of Safe Postharvest Treatments for Controlling Grey Mould and Soft Rot diseases of Strawberry Fruits

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Abstract : The strawberry fruit rot (grey mould and soft rot) caused by *Botrytis cinerea* and *Rhizopus stolonifer* respectively are the most important diseases attach strawberry fruits. Evaluate the efficiency of potassium sorbate and sodium benzoate against postharvest diseases of strawberry fruits were tested In vitro trails, results revealed that compete inhibition of linear growth was obtained with potassium sorbate and sodium benzoate at concentrations of 20.0 and 25.0 g / L for *B. cinerea* and *R. stolonifer* respectively. The highest reduction was obtained potassium sorbate and sodium benzoate at concentrations of 15.0 g / L which reduced linear growth of both tested fungi more than 63.3 %. As for spore germination results revealed that compete inhibition of linear growth was obtained with potassium sorbate and sodium benzoate at concentrations of 20.0 g / L for both *B. cinerea* and *R. stolonifer*. The highest reduction was obtained potassium sorbate and sodium benzoate at concentrations of 15.0 g / L which reduced spore germination of both tested fungi more than85.1 %.

Moreover, in vivo trails results indicated that all tested concentrations of potassium sorbate and sodium benzoate significantly reduced the grey mould and soft rot (incidence and severity) of strawberry fruits . The highest reduction was obtained with potassium sorbate and sodium benzoate at concentrations of 20.0 and 25.0 g / L which reduced the grey mould and soft rot incidence of strawberry fruits more than 88.0 and 86.0 % respectively. Treated strawberry fruits with potassium sorbate and sodium benzoate at concentrations of 15.0 g / L resulted in reducing grey mould and soft rot incidence more than 65.5 % . As for disease severity the highest reduction was obtained with potassium sorbate and sodium benzoate at concentrations of 20.0 and 25.0 g / L which reduced the grey mould and soft rot severity of strawberry fruits more than 90.0 and 88.0 % respectively. It could be suggested that potassium sorbate and sodium benzoate are excellent treatments for controlling postharvest diseases of strawberry fruits.

Key words : Strawberry fruit- grey mould- Soft rot - Potassium sorbate - Sodium benzoate- Postharvest diseases.

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