



## Postharvest Application of Chitosan and Thymol For Controlling Grey Mould and Soft Rot diseases of Strawberry Fruits

Nehal M. Saied

Plant Pathology Department, National Research Centre, Giza, Egypt.

**Abstract :** Evaluation the efficacy of chitosan and Thymol for controlling postharvest diseases of strawberry fruits was studied.

In vitro trails , results revealed that all tested concentrations of both chemicals significantly reduced the linear growth of both fungi. Complete inhibition of linear growth was obtained with chitosan and Thymol at concentrations of 5.0 and 6.0 g /L for *B. cinerea* and *R. stolonifer* respectively. Also, complete inhibition of spore germination was obtained with chitosan and Thymol at concentrations of 5.0 and 6.0 g /L for *B. cinerea* and *R. stolonifer* respectively. The highest reduction was obtained with chitosan and Thymol at concentrations of 4.0 g /L which reduced spore germination more than 79.4 and 67.4% for *B. cinerea* and *R. stolonifer* respectively. Moreover, in vivo trails , results indicated that all tested concentrations of both chemicals significantly reduced the disease incidence. The most effective treatments are chitosan and Thymol at concentrations of 6.0 g /L which reduced the disease incidence by 88.0 & 84.0 and 92.0 & 86.0 % for grey mould and soft rot respectively. The highest reduction was obtained with chitosan and Thymol at concentrations of 5.0 g /L which reduced both diseases more than 76.0 %.

As for disease severity, results indicated that all tested concentrations of both chemicals significantly reduced the disease severity of grey mould and soft rot. The most effective treatments are chitosan and Thymol at concentrations of 6.0 g /L which reduced the disease severity more than 91.0 and 85.5 % for grey mould and soft rot respectively. The highest reduction was obtained with chitosan and Thymol at concentrations of 5.0 g /L which reduced both diseases more than 81.8% . It could be suggested that chitosan and Thymol essential oil are excellent treatments for controlling postharvest diseases of strawberry fruits.

**Key words :** Strawberry fruits – Postharvest diseases- Chitosan – Thymol - Grey mould- Soft rot.

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