ID: 231

Efficacy of different Plant Extracts and Essential Oils against *Rhizopus stolonifer* and *Aspergillus niger* causing Post Harvest decaying in Grapes

Syed Shamasullah[1]*, Amjad Abbas[1], Muhammad Amjad Ali[1], Muhammad Kamran[2], Muhammad Ibrahim[2], Sami Ullah[1]

[1]Department of Plant Pathology, University of Agriculture, Faisalabad-38040, Pakistan
[2]Institute of Horticulture Sciences, University of Agriculture, Faisalabad-38040, Pakistan

Abstract

Grapes (Vitis vinifera.) is a widely consumed fruit in the world. In Pakistan, from an area of 16160 hectares about 87584.01 tons of grapes are produced annually. While transporting, storage, marketing and for common consumption Grapes are highly perishable fruit. Post-harvest losses of Grapes are up to 16- 23%. Several abiotic and biotic factors reduce the production and quality of grapes. In present study, samples of rotten grapes were collected from different fruit markets of district Pishin (Balochistan) and Faisalabad (Punjab). The samples were subjected to isolate the fungal pathogens, responsible for the post-harvest decay of fruits. The fungal pathogen isolated was identified as *Aspergillus niger* and *Rhizopus stolonifer* causing post-harvest decay of grape berries. The pathogenicity of the two isolated pathogens was evaluated on different temperatures (5, 20 & 30 °C) on Thompson seedless variety of grapes. The temperature 30°C was found conducive for infection and proliferation of fungi. Five organic origin chemicals namely Neem, cinnamon and Clove oils, with concentrations of (500, 1000, 2000 ppm) for each oil and Neem and Marigold Extracts with concentrations of (12.5, 25, 50%) of both extracts were used as antifungal agents. Among the tested organic compounds, Cinnamon and clove oil @ 2000 ppm was found better in delaying the decay process of both fungal pathogens. The decay was reduced up to 50% as compared to control. This study indicates that post-harvest application of essential oils can potentially enhance the storage life of grapes prior to marketing.