

**Title** The effect of pre and postharvest treatments on decay development of 'Hicaz' pomegranates (*punica Granatum* L. var Hicaz)

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### Abstract

The awareness of the health benefits of pomegranate fruit increases the demand for fresh fruit and its consumption on the world. As a result of this, the planting, growing and storing of pomegranate rate also has been increased. There are lots of fungal pathogens of pomegranate fruit that infected from orchard and caused important losses on storage period. *Botrytis cinerea* is the most important pathogen causing crop losses on pomegranate fruit in Turkey. Besides *B. cinerea*, *Alternaria* spp., *Coniella* spp., *Penicillium* spp., and *Aspergillus* spp., also cause fruit rot on pomegranate. If not controlled properly in the orchard and on the postharvest stage, they cause serious problems in storage conditions. In this study, according to the diseases agents, it was prepared a disease management program beginning from preharvest period of pomegranate fruit to control postharvest diseases. In the postharvest period, the effect of hot water (45 and 50°C), sodium bicarbonate (%2), TBZ (1000 ppm) and fludioxanil (1000 ppm) and biological control agents (*Metschnikowia pulcherrima*), and combination of fludioxanil (1000 ppm)+50°C were tested on postharvest diseases of pomegranate fruit. Fruit were packed into modified atmosphere packing materials and stored at 6°C for four months. Decay development and quality parameters were examined two months intervals. The combination of fludioxanil (1000 ppm)+50°C gave the best results to reduce grey mold incidence on fruit. Fludioxanil alone also was very effective in controlling decay, especially caused by *Botrytis* spp. Preharvest applications were also reduced decay developments on postharvest stage.