

Title The effect of several plant extracts on postharvest management of stored pistachio nuts infected by *Plodia interpunctella* Hb.

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Abstract

Hygienic postharvest management of nut crops during storage is important to ensure product safety for export of pistachio nuts so as to guarantee the successful competition in international markets. To achieve this it is necessary to control insect pests in storage. Stored pistachio nuts are very susceptible to some pests including the polyphagous Indian meal moth, *Plodia interpunctella* Hb, an important pest existing in tropical and semitropical regions of the world; infesting larva decrease the qualitative and quantitative quality of pistachio kernels. Alcoholic extracts of leaves and stems of *Cuminum cyminum*, the bulb of *Allium sativum*, and leaves of *Achillea millefolium* were evaluated on the rate of egg-laying in female insects on the 'Ohadi' cultivar using a growth chamber at 25°C, 60% RH and a 16:8 (L:D) photoperiod, using a completely randomized design (CRD). Several extract concentrations (30, 60, 90, 120, 150 mg/disk) were compared with untreated controls. Application of the extracts had significant inhibitory effects on the rate egg-laying of this pest ($p < 0.05$). Maximum inhibition on rate of egg-laying occurred with extracts of *Allium sativum*, which was greater than *Cuminum cyminum* that in turn was greater than *Achillea millefolium*.