

## Use of Microwave and Polymer in Controlling *Oryzaephilus Surinamensis* in Some Iranian Export Products

**Authors :** Reza Sadeghi, Fakhry Sadat Hosseini

**Abstract :** Storage pests with quantitative, qualitative and hygienic losses to storage products lead to heavy damage in these products. In Iran, every year, on average, 10 to 20% of agricultural products in warehouses are destroyed by pests and other harmful factors. One of the new methods of controlling storage pests is microwave heating, which is an environmentally friendly method and can be used to replace chemical methods to control storage pests. Pistachios and almonds are the most important dried fruit items in Iran, which account for a significant part of Iran's exports every year. In this study, the percentage of adult insect mortality of *Oryzaephilus surinamensis* L., which along with Pistachio and almond samples were exposed to microwave radiation at 540, 720, 900 watt with times of 25, 35, 45 seconds. Also, qualitative evaluation of product changes due to the above treatments was performed in the form of changes in colorimetric factors and organoleptic properties of the product. The results showed that in microwave treatment, the mortality rate increases with increasing treatment time. There was also a direct relationship between mortality rate and microwave powers. At 540 watts and 25 seconds the lowest mortality rate occurs and at 900 watts and 45 seconds the highest percentage of adult insect mortality occurs. Power and time factors had a significant effect on the taste and overall acceptance of pistachio product and polymer, polymer and power interaction, polymer and time, time and power had no significant effect on Pistachio product quality. In almond product, the factors of polymer, time, power, interaction of polymer and power, polymer and time and power had no significant effect on almond quality.

**Keywords :** almond, pistachio, *oryzaephilus surinamensis*, microwave

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