

The effect of Oregano Essential Oil on Shelf-life of Pistachio Nut Puree

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In this study, the effect of adding essential oil from oregano on prolonging shelf life of pistachio puree was investigated. For this purpose, Rancimat Method, which is one of Accelerated Shelf-Life Test (ASLT) method, was used to determine the effect of oregano (OO) essential oil on the oxidative stability of pistachio puree. Butylated hydroxyanisole (BHA) and control sample was used for the comparison. 150, 300 and 600 ppm and 150 ppm concentrations were used for essential oil and synthetic antioxidant, respectively. The conductivity was followed at three temperatures, 110, 120 and 130°C, with the addition of essential oil and BHA to pistachio puree during ASLT. Pistachio puree with essential oil showed protection against the lipid oxidation process. As the temperature increased induction time was significantly decreased during ASLT ($p < 0.05$). The same concentration of essential oil and BHA were also added into pistachio puree to observe the change in peroxide value (PV) and free fatty acid (FFA) value under normal storage temperature 15, 25 and 40°C. The PV and FFA increase were lower in OO and BHA added pistachio puree samples during 8 month storage ($p < 0.05$).

This study also provides equations to estimate shelf-life of pistachio puree with and without antioxidants using Rancimat method. It was obvious from the results that the adding essential oil significantly increased the shelf life of pistachio puree. So, that essential oil could be used as natural antioxidants in foods with high lipid content increasing the shelf life of these products.