Title	Storage stability of macadamia nut
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Abstract

Macadamia nut production and demand have increased recently worldwide. However, inadequate storage conditions of nuts promote deleterious changes in texture, color, and mainly in lipid oxidation which causes off flavors and odors. The purpose of this study was to investigate the effect of water activity on physical and chemical properties of raw macadamia kernels during storage. Macadamia nuts were obtained from a_w local plantation with a kernel moisture content of about 1.5%, after being dried at 60 °C. They were dehulled and hand-sorted to get an uniform store. Macademia kernels were stored at 35 °C in the environment of different salt solutions with a_w' s from 0.108 to 0.743. A direct colorimetric method was used for peroxide value determination. Penetration depth after 5 s was measured on nuts using the SurBerlin penetrometer and color changes were measured with a Colorflex colorimeter. Samples were analyzed in triplicate every 3 d of storage. Nuts stored at a_w' s of 0.318 and 0.436 resulted in substantially lower peroxide value. Samples stored at a_w' s of 0.628 and 0.793, were easier to penetrate due to the water adsorption, while those stored at a_w of 0.108 exhibited a decrease in penetration depth. Macadamia nuts stored at a_w' s from 0.108 to 0.515 kept their color, whereas samples at a_w' s of 0.628 and 0.793 resulted in a change in color from light to dark. This study's purpose is to contribute to improve the storage conditions of the raw macadamia kernels.