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| **Abstract / Content summary** | The oil stability of tree nuts during storage can be influenced by storage conditions such as temperature, humidity, and moisture concentration. However, few studies have assessed how the presence of testa and shell affects the oil stability of tree nuts during storage. We aimed to determine how storage conditions affect oil stability in almond and canarium, in particular, the presence of testa and storage time of nut-in-shell (NIS). (2) Methods: We measured peroxide value (PV), free fatty acid (FFA) and hexanal concentrations of almond and canarium (blanched vs. kernel-in-testa) stored at 45 ◦C for 24 days. We also measured PV, FFA and fatty acid composition of canarium samples at days 0 and 140 stored as NIS under ambient conditions. (3) Results: The presence of testa in almond and canarium decreased hexanal and PV concentrations at day 24 of incubation. Canarium PV and FFA concentrations increased over 140 days of storage in the shell compared to day 0. However, both PV and FFA concentrations remained within the acceptable threshold during storage. No changes in fatty acid composition were found during NIS storage. (4) Conclusions: Testa and shell could act as a natural coating, slowing down oxidation rates. Hence, long-term storage on nuts in testa or nuts in shell are recommended for tree nuts. Keywords: Prunus communis, Canarium indicum, blanched almond, hexanal; peroxide values, free fatty acid, accelerated ageing |
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