

Chemical composition and oxidative stability of corn oil flavored by thyme flowers and bitter orange peel under storage conditions

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This study focused on the effect of thyme flowers and bitter orange peel incorporation on corn oil oxidative stability during storage. Peroxide value (PV), specific extinction values (K_{232} and K_{270}), free fatty acids (FFAs), phenols, chlorophylls and carotenoids contents, were determined during storage (2, 4, 6 and 8 months). Oxidative stability index (OSI) was evaluated before and after storage.

Results showed that samples enriched with thyme and bitter orange were characterized by a higher chlorophylls, carotenoids, and phenols contents and a decreased PV, FFAs, K_{232} and K_{270} values, compared with the control sample. Their induction times (IT) after 8 months of storage (6.3 and 5.82 h, respectively, for oil with thyme and oil with bitter orange) were more important than that of the control (4.36 h). This could be attributed to the presence of thyme flowers or bitter orange peel antioxidants compounds preventing or retarding oil oxidation.

Keywords: Storage, oil autoxidation, thyme flowers, bitter orange peel, peroxide value.

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