

ABSTRACT

One of the problems faced by palm oil industry and consumers is its susceptibility to lipid oxidation, leading to food deterioration. Therefore, there is a rise interest in antioxidant utilization, especially natural antioxidants to maintain the quality of oil and to prevent the oxidation. The objective of this study was to observe the effect of antioxidant utilization towards the oxidation level in palm in three different treatments: storing at room and accelerated temperature (40°C) condition, and used in frying. The analysis method used were thiobarbituric acid reactive substances (TBARS) to measuring the amount of MDA (malondialdehyde) product in palm oil stored at room and 40°C temperature conditions and peroxide value (PV) analysis for palm oil used in frying. Results showed that storing palm oil at room and accelerated storage temperature increased TBARS value over time, meaning higher oxidation value. However, green tea which is rich in antioxidant (polyphenol) reduced the TBARS value, particularly in the second, fourth, and fifth months. Moreover, accelerated storage conditions increased oxidation rates in all samples. Although green tea antioxidant may lower the oxidation level, TBHQ outperformed the green tea antioxidants in maintaining lowest TBARS value over time. In regards to peroxide value, incorporating antioxidants notably reduce the rise of PV value, maintaining the the value lower than the threshold by BPOM, particularly in the initial frying cycles. Moreover, no significant difference were observed between Indesso's antioxidant and benchmark antioxidants in all frying cycles. All in all, this internship also enriched the author's insight into food industry practices as well as honing both technical and interpersonal skills in working environment.

Keywords: antioxidant, green tea, palm oil, TBARS, PV