Much emphasis is placed on the keeping quality of biscuits, since these products are widely used and often stored for extended periods before consumption. Biscuits contain a high proportion of lipids and therefore, the shelf life primarily depends on the lipid oxidative stability. Antioxidants can be used to retard lipid oxidation significantly, and prolong the shelf life of food products. This study involved investigating the effects of green tea catechins on lipid oxidation in biscuits by measuring primary and secondary oxidation products. Biscuits were prepared containing 4 concentrations (0%, 0.2%, 0.4%, and 0.6%) of green tea extract (GTE) powder. Biscuits were stored at 50°C and 60°C and samples for analysis of fat oxidation were taken at day 0, 3, 6, and 10 of storage, respectively. Fat extraction was carried out with 150 g of ground biscuits twice in 300 ml of n-hexane for 1 hour at 50°C. Oxidative stability was analysed by measuring peroxide value (PV) and p-anisidine value (p-AV) according to the American Oil Chemists’ Society (AOCS) official methods Cd 8b-90 and Cd 18-90 respectively. Results showed that PV and TOTOX (Total Oxidation) values significantly decreased with the addition of GTE in biscuits and increased with increasing storage time. First order stability models were developed and shelf life of biscuits was shown to increase with increasing amount of GTE. This study can serve as a guideline for biscuit manufacturers with regards to the level of green tea catechins in biscuits so as to achieve the desired lipid oxidative stability.

Keywords: biscuits; lipid oxidation; green tea catechins; peroxide value; p-anisidine value