

Effect of BHA on cottonseed oil properties during heating and frying
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Abstract

The high temperature used during frying, in the presence of oxygen and water, induce important chemical changes of the oils, namely by oxidation, polymerization and hydrolysis, which generate a large number of compounds have negative effect on human health. This research aims to study effect of BHA and type of fried material on physical and chemical changes of cottonseed oil during frying up to 42hr. Cottonseed oil was a good frying, if it is fresh produced because it has all requirements for frying oil. Refractive index, dark color, flow time, acidity and T.B.A. values of oil increased with increasing static heating and frying time up to 42 hr. Peroxide value increased in the first hours then fluctuated up to 42 hrs. of static heating and frying. Iodine value decreased with increasing static heating and frying time. BHA had little effect on the stability of cottonseed oil during static heating and frying of potato or fish. BHA increased the induction period from 6 to 18 hrs. during static heating. Results revealed that the total physical and chemical changes during frying fish are higher than that during frying potato. Static heating and frying decreased the unsaturated fatty acids and increased the saturated fatty acids of cottonseed oil. The change of polyunsaturated fatty acids to saturated fatty acids was lower in frying than in static heating. Decreasing of linoleic acid during frying fish was more than of potato frying. Fried food had effect on rate of change, which happened in oil during frying. T.B.A. value, iodine value, acidity were good indicators for changing, which takes place during frying. Peroxide value is not suitable for assessment of changes during static heating or frying. There is no single method suitable for study physical and chemical changes in oil during frying.

Key words: Static heating, Frying, potato, Fish, BHA, Cottonseed oil Properties, Fatty acids.

