



Section B

201/B

Changes in physiochemical properties of deep fried food due to use of repeatedly heated coconut oil

A J N Gimasha², L L W C Yalegama^{1*}, H A E Samaranayake¹ and K D P P Gunathilake²

¹Coconut Processing Research Division, Coconut Research Institute, Lunuwila

²Department of Food Science & Technology, Faculty of Livestock, Fisheries and Nutrition,
Wayamba University of Sri Lanka, Makandura, Gonawila

The physical, chemical and sensory properties of food can change during deep frying when oil tends to be used repeatedly for frying. To investigate chemical and physical changes of deep fried food due to use of oil repeatedly for deep frying, coconut oil was subjected to deep frying of potato chips, dhal, and salaya fish (gold-stripe sardinella). Six frying cycles were undertaken for each type of food. After each cycle of frying, food was analyzed for moisture content, free fatty acid level (FFA) and peroxide value. Moisture content of potato chips, dhal and salaya fish changed between 17.5 % - 21.8 %, 17.5% - 32.3% and 14.3% -32.2%, respectively during 6 frying cycles. Repeated heated of oil for frying did not much affect on the FFA value of potatoes. However, the FFA values of dhal (0.12%-1.9%) and fish (1.0%-4.3%) showed comparatively high FFA contents. The peroxide value of fish increased with repeated use of frying oil and it was 3 times higher on the 6th day (5.7 meq/kg) compared to the 1st day (1.8 meq/kg) whereas peroxide values of dhal and potato increased gradually (less than 2 meq/kg). In conclusion, repeated heating of coconut oil for frying influence on the chemical properties of food, depending on the type of food.

Keywords: Coconut oil, free fatty acid, peroxide value, repeated frying