STABILITY AND EFFECT OF HEATING IN RAPESEED AND SOYBEAN OILS

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ABSTRACTS

Stability and effect of heating in vegetable oils used in deep fat frying process was studied. In the first step the protective effect of Tenox 2, Tenox 6 and Ascoryl Palmitate on rapeseed and soybean oils was tested by the AOM Method. Peroxide value was determined to follow the oxidation process.

In the second step, these vegetable oils were heated at 180°C for 8 hours daily during 112 hours, using Ascorbyl Palmitate, which was the best antioxidant tested. Potatoes and hamburgers were fried in both vegetable oils periodically.

To evaluate the changes produced, physical and chemical determinations were done in oil samples taken each 16 hours of heating until reaching 112 hours. Organoleptic characteristics of the fried products were tested through Sensory Evaluation.

The main physical changes observed when rapeseed oil was used for frying hamburgers were a real increase in color and viscosity; initial peroxide value was 0.2 meq/kg of lipid and it finished with 22.3 meq/kg of lipid.

When rapeseed oil was used for frying french potatoes the physical changes were more severe.

In the case of soybean oil used for frying hamburgers and compared with rapeseed oil used for the same purpose, the main physical change was in color; initial peroxide value was 0.3 meq/kg of lipid, reaching 23.4 meq/kg of lipid at the end of the heating period.

As well as rapeseed oil, the physical changes were more severe when soybean oil was used for frying french potatoes.

According on Fritest both vegetable oils could be used until forty hours heating only.

About organoleptic evaluation, the judges through triangle test detected flavor significative differences between the products which were fried in rapeseed oil and those fried in soybean oil, but the pannel did not show any preference for hamburgers fried in these oils. On the other hand, through paired comparison, the pannel showed significative preference for french potatoes fried in rapeseed oil which had at least 16 hours of heating.