

## Research of vegetable oils oxidation process in the deep fat during thermal treatment

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### Abstract

Change of deep fat quality indexes significantly influence the formation of consumer properties of fried products, and correctly matched fat raw materials guarantee its quality and safety. In this paper the analysis of vegetable oils use prospects (sunflower, palm, rapeseed, corn, linseed, mustard) as deep fat was carried out. For an assessment of the oxidizing processes, which occur in the deep fat at heat treatment, peroxide, iodine and acid index values were chosen. The analysis of organoleptic, physical and chemical indexes of the studied vegetable oils and the deep fried production showed usefulness of mustard and linseed oils as deep fat for not more than 1 h usage, sunflower and corn - not more than 2 h, and palm and rapeseed - not more than 3 h. Besides, it was revealed that use of rapeseed oil slows down the process of deep fat thermal oxidation. Thus, decrease in rates of primary products of oxidation formation was observed, as well as reduction in the number of secondary oxidation products. At the same time it was noted that the use of rapeseed oil makes it possible to reduce the specific consumption of deep fat, as well as to extend its continuous use while maintaining the organoleptic characteristics of the fried products.

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### Keywords

Acid value, Iodine value, Oxidative processes, Peroxide value, Vegetable oil