

Purification of Used Rapeseed Frying Oil by Two Stage Adsorption Treatment

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Rapeseed oil undergoes a complex series of changes and reactions during frying, e.g. formation of low molecular compounds, decomposition of hydroperoxides, hydrolysis of triglycerides and polymerisation. Purification of used rapeseed oil could be achieved by removal the undesirable, oxidised, polar, colour substances and polymers.

Several attempts have been previously made to purify used oils by adsorbent treatment. Purification of used frying oil with adsorbents may improve the quality of fried food and extend the frying life of oil.

Removal of degradation products from rapeseed oil used for frying French chips by different character of active carbons was studied. Purification of used rapeseed oil in two stage adsorption process was applied. Active carbon with non-modified (AR1000) and modified surface by hydrogen peroxide oxidation (ARP) were used.

Quality of fresh, used and purified rapeseed oils was evaluated by measurement of colour, iodine value, acid value, peroxide value, total oxidation index, content of polar compounds and fatty acids profiles. The results of application both adsorbents at purification process of used rapeseed frying oil are discussed.