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Effect of frying cycle on physico-chemical properties on different cooking oils

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Physico-chemical properties of vegetable oils (mustard, sunflower, rice bran, palmolein, soyabean and groundnut) were affected significantly by three frying cycles during the preparation of poori (deep-frying bread). it was observed that repetitive frying increased the free fatty acids (ffa), acid value, peroxide value (pv) and saponification value, indicating degradation of oils. rice bran showed the highest increase in pv (0.71to13.96 meq/kg), while ffa (%) increased in groundnut (0.63 to 2.1), rice bran (0.62 to 2.2) as compared to other oils. the oil uptake by poori was found to be the highest for mustard oil. the repetitive frying also darkened the oils and increased their specific gravity. ftri spectra highlighted a number of peaks/ bands related with functional groups in oils. in particular, the spectra obtained for soyabean oil after first frying showed strong peaks at 2924cm-1, corresponding to c-h,c=o,c-o stretching. in spectra of soybean oil many peaks shifted downward during subsequent frying. ffa profiling and changes in fatty acid during were also studied using gas chromatography. during frying cycles, mustard oil showed the best results compared to other oils because there was no change in ffa content during frying. the results indicated mustard oil was the best oil among the evaluated ones especially in terms of health benefits.

Biography

Neeraj Kumar has done B-Tech. in Food Science and Technology from Guru Nanak Dev University. During thesis period his area of research is stability, Nutrition and health benefits under the supervision of Assistant Prof. Amritpal Kaur

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