

Quantification and Thermal Behavior of Rice Bran Oil, Sunflower Oil and Their Model Blends

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Abstract : Rice bran oil is considered comparatively nutritionally superior than different fats/oils. Therefore, model blends prepared from pure rice bran oil (RBO) and sunflower oil (SFO) were explored for changes in the different physicochemical parameters. Repeated deep fat frying process was carried out by using dried potato in order to study the thermal behaviour of pure rice bran oil, sunflower oil and their model blends. Pure rice bran oil and sunflower oil had shown good thermal stability during the repeated deep fat frying cycles. Although, the model blends constituting 60% RBO + 40% SFO showed better suitability during repeated deep fat frying than the remaining blended oils. The quantification of pure rice bran oil in the blended oils, physically refined rice bran oil (PRBO): SnF (sunflower oil) was carried by different methods. The study revealed that regression equations based on the oryzanol content, palmitic acid composition and iodine value can be used for the quantification. The rice bran oil can easily be quantified in the blended oils based on the oryzanol content by HPLC even at 1% level. The palmitic acid content in blended oils can also be used as an indicator to quantify rice bran oil at or above 20% level in blended oils whereas the method based on ultrasonic velocity, acoustic impedance and relative association showed initial promise in the quantification.

Keywords : rice bran oil, sunflower oil, frying, quantification

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