

Suitability of Utilizing of Used Rice Bran Oil to Produce Hard Soap and Liquid Soap

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Abstract

Waste cooking oil is utilized for re-cooking to enhance commercial efficiency, but its nutritional value has decreased and can cause severe health problems. The cis forms of fatty acids contained in rice bran oil are converted into harmful transform after exposure to high temperatures repeatedly. This study was designed to prepare hard and liquid soap using varying percentages of used rice bran oil, coconut oil, castor oil, NaOH, glycerin, sodium silicate, calcium carbonate, EDTA, SLES, dyes, and fragrance. In the prepared hard soap were found to be the values ranges of TFM of 25.10 to 69.56%, total alkaline content of 2.69 to 1.85%, pH of 11.45 to 8.901, moisture content of 8.901 to 14.863%, and foamability of 7.50 to 17.5cm. The formula containing used rice bran oil at 38.8%, Coconut oil at 14.82%, and Castor oil at 6.50% presented the best results in hard soap. The prepared liquid soap resulted the values ranges of TFM of 36.03 to 67.99%, Total alkaline content of 1.33 to 2.18%, pH of 12.57 to 9.25, and foamability of 13.0 to 18.33 cm. The best formula was obtained from liquid soap treatment containing used rice bran oil of 50.00%, Coconut oil of 11.50%, and castor oil of 5.00%. The tested results showed that the hard soap can be categorized into Type 01 soap according to the SLS standards. It can be concluded that the used rice bran oil can be used as an alternative raw material for soap manufacturing.

Keywords: Laundry soap, Raw material for soap, Used rice bran oil, Waste cooking oil