

ABSTRACT

Many plant seeds of our forest contain oil. With efficient oil extraction method we can produce low cost oil in comparison to cost of wax which is to be mixed in certain percentage/ratios with virgin paraffin wax to produce low cost wax. As wax has become so costly this could be definitely a welcome approach to minimize the cost of the candles. These waxes can be used for preparing candles for various purposes such as in festivals, lighting etc. Hydrogenation of vegetable oils produces waxes that can be used to prepare candles as known from literatures. In the present study, an attempt has been made to show an application of direct use of vegetable oils obtained from non-edible oil bearing seeds by soxhlet extraction method. The extracted vegetable oils have been used to prepare candle wax and then the candle properties are determined by various analyses. The results obtained justify its use in the candle making process. These candle waxes are suitable replacements to paraffin wax as they are obtained from renewable sources in nature and also due to their environmental benefits. The smoke of virgin paraffin wax is a potential health hazard, so this practice can minimize that too. In the present investigation, candle wax of three different blending ratios has been prepared. Generally, to produce low cost wax by mixing vegetable oil with virgin paraffin wax at a certain percentage of 60-40 is preferable considering factors like burn rate, gas analysis, smoke point, flame height etc. Wick is the heart of a candle, so its effect on candle properties has also been studied by taking four different wick diameters. It has been found that wick diameter of 2.5mm is the most preferred. The wick taken is cotton braided. In this study, four vegetable oils have been taken for blending and compared with virgin paraffin wax candle. Nahar oil blending is the most economical one and showed better performance in most of the cases.

Keywords: Vegetable oil, blending, candles, soxhlet extraction, environmental benefits.