

## EFFECTS OF EXTRACTION METHODS ON PHYSICO-CHEMICAL PROPERTIES OF OIL FROM CASHEW NUTS (*Anacardium occidentale*)

S. E. ADEBAYO<sup>1</sup>, P. A. ADEOYE<sup>2</sup>

<sup>1,2</sup>Department of Agricultural and Bio-resources Engineering, Federal University of Technology Minna, P. M. B. 65, Niger State  
oluvictor4life@yahoo.com

<sup>2</sup> Department of Biological and Agricultural Engineering, University Putra, Malaysia

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### ABSTRACT

With a view to studying the impact of methods of extraction on properties of oil from cashew nuts, two extraction methods were adopted to obtain oils from cashew nuts. The methods are solvent extraction using n-hexane as extractive solvent and traditional hydraulic press methods. The physico-chemical properties of the extracted oil samples were analyzed and compared to each other. Percentage oil yields were 53.25% and 46.89% for the solvent extracted and hydraulic press oils respectively. The oil sample's odour was not offensive at room temperature for either method. Specific gravity was 0.86g/kg for solvent extracted oil and 0.94g/kg for oil obtained through hydraulic press. Saponification value ranged from 85.5 g/kg for hydraulic press oil to 96.62 g/kg for solvent extracted oil. pH values for both samples were below 7.0, and the refractive index for both samples was 1.47. The relative density value ranged from 0.9 to 0.92 at 29°C (room temperature). Both oil samples were in liquid state at room temperature and boiling points varied from 94°C to 98°C for solvent extracted oil and hydraulic press oil respectively. The results showed that the method of extraction imposed significant changes on specific gravity, saponification value, iodine value, acid value, peroxide value and relative density. However, no significant differences were recorded in parameters like free fatty acid, peroxide value and refractive index values.

**Key words:** Cashew nut, Solvent extraction, Hydraulic press, Physico-chemical properties

### 1. INTRODUCTION

Over the years, there has been a spectacular increase in the world demand for both oils and oil meals with attending uptrend in prices. The non-edible uses of oilseeds declined substantially at a time due to the availability of inexpensive oil derived from fossil reserves. It has however been realized that the fossil reserves are exhaustible or it become shorter in supply and are not renewable. Therefore looking into alternative oil sources from various seeds which abound in nature should remain a subject of active investigation. Although such oils are not expected to replace petrochemicals in their entirety, their applications as lubricating oils, emulsifiers, retardant agents or components of cosmetics, for example could be very important (Onyeike and Acheru, 2002).

Oilseed production is an important part of the agricultural economy of many countries. Some oilseed plants grow only in tropical regions, some in Mediterranean regions while others grow in temperate climates. Some of these seeds are grown all over Nigeria while some are grown and known better in some parts or regions of the country. Some of these oilseeds are underutilized considering their nutritional potentials as good sources of edible oils and fats diet, which were being researched on and put to different uses in meeting up with the human quest for better nutritional requirements, domestic and various industrial purposes. In recent times, the desire to conserve resources spent on importation of oils for domestic and industrial purposes has paved way for renewed impetus in the