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RESEARCH ARTICLE

EXTRACTION OF COLD PRESS MORINGA OIL

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ABSTRACT

Due to diminishing resource of oil seeds and with increasing demand for oil in domestic and industrial applications, there is need for research to find out another resource of oil. Also, there is greater demand for healthy cooking oil for the community. Hence the present study was conducted to depict the oil content of moringa seed, which was a common and easily available resource in developing countries in Asia and Africa. The natural attributes of any oil is presented in the traditional extracted method and so, the oil extraction method decided to be cold press.

INTRODUCTION

Domestic consumption of edible oils has been growing at 4.0 to 5.0 per cent a year (Rajaveni and Ramasamy, 2011). With increasing demand and depleting resource for oil extraction, the research for other source of edible oil is needed. Moringa Oleifera is the best known of the 13 species of the genus Moringaceae. It was highly valued in the ancient world. The Romans, Greeks and Egyptians extracted edible oil from the seeds and used it for perfume and skin lotion. In the 19th century, plantations of moringa in the West Indies exported the oil to Europe for perfumes and lubricants for machinery. Moringa seed oil also has potential for use as a biofuel (Rashid, 2008). The background behind the research interest in selection of moringa seed for oil extraction was due to its common availability in all season in India.

MATERIALS AND METHODS

Moringaoleifera is the most widely cultivated variety among the 13 known species of Moringa. The other varieties include: M. arborea, M. concanensis, M. drouhardii, M. hildebrandtii, M. stenopetala, M. longituba, M. borziana, M. ovalifolia, M. peregrina, M. pygmaea, M. rivae, and M. ruspoliana (Nasir and Ali, 1972).

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The type of sampling involved in this study was purposive sampling and moringaoleifera seeds were selected for the study. M. oleifera seeds are left to mature naturally on the tree before harvesting. These seeds were purchased from a private exporter, Coimbatore. The seeds selected mostly had an average diameter of 1 cm and weight of 0.3 to 0.4 g. The seeds dried in sun for 2 to 3 days. The dried seeds are sent to shell removing unit, to get the kernels.

The kernels are further dried for a week in room temperature. The seeds were handled carefully for cleanliness. On the first day, the M. oleifera seeds weighing eight kilograms were poured on the receiving funnel of the cold presser. The next few minutes the oil was dripping from the outlet collected in a container which was previously weighed and the oil with container weighed and subtracted to express the weight of the oil (three kilograms). The oil extracted seed cake collected and utilized for other purpose such as animal feed and water purification.

The extracted oil (golden yellow coloured) undergone a sedimentation process for three days to remove impurities and protein residues. On the fourth day, the sedimented oil was decanted, filtered in a filter cloth of five to six microns pore size, in to a clean container and then bottled in a transparent PET (polyethylene terephthalate) bottle of fifty microns thickness. The extracted oil yield was expressed in percentage, which was calculated as weight of oil extracted over weight of the sample taken.

Moringa Oil

RESULTS AND DISCUSSION

The extracted oil was pale yellow liquid at room temperature with a characteristic odour and palatability and were not rancid. The cold pressed moringa oil had the natural flavour which might be lost when applying other methods of oil extraction. The yield was defined as grams of extracted oil divided by grams of seeds. The extracted oil content of moringaoleifera seed was about 25% by weight, which was relatively similar to the result reported by Lalas and Tsaknis (2002) and Anwar and Rashid (2007). The study by Khattab and Shakak (2012), showed that the chemical composition of moringa oil contained high oil content (43.79 per cent), and this means the seed of moringa tree is a good source of edible oil. The seed oil content were in the range of 30 to 40 % by cold press extraction. According to literature, the oil yield differ due to variety of the seed or due to method of oil extraction. The cold press method used to extract oil was found relatively low in oil yield compared to other methods stated from literature. Tsaknins *et al*. (1999) study stated the extracted oils were liquefied at room temperature. Among the methods used for the extraction of oil, that with n-hexane reported the highest yield of oil (35.7%) followed by extraction with the mixture of chloroform/methanol (31.2%) (50:50) and cold press (25.8%).

Conclusion

Due to high dependency of humans on oil for both domestic and industrial uses, there is need to look for another source of oil. The functional properties and nutritional importance of moringa seed make it a better choice to be another source of oil for healthy cooking especially for the developing countries in Asia and Africa, where its availability is more and common. The present study concludes the oil content of moringa seed by cold press was sufficient to make it as another source of edible oil. For better oil yield for commercial purpose other methods should be used for oil extraction.

Future Scope

1. Extraction of moringa oil by modern methods and refining and studying its properties.
2. Acceptance of oil should be studied.
3. Toxicity of the oil.

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