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Study of the edible products of the honey tree (Madhuca longifolia)

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Madhuca longifolia is a large tree most commonly found in the dry zone of Sri Lanka. Honey tree is valued for its seeds, which yield edible fatty oils, known as "Mee oil" or Bassia oil. The corollas of honey flowers and fruits are edible and form articles of diet in villagers in several parts of Sri Lanka. This study was undertaken to examine these products.

The main objective of this research was to find out the nutritive value of honey oil by analyzing the fatty acid composition. With the escalation of the prices for imported vegetable oils and coconut oil, there is a necessity to find out an alternative for these oils. The other objectives are to study the nutritive value of flowers and fruits of the honey tree by analyzing protein, fats, moisture, ash, carbohydrate and sugar content, and to study the advantages of the honey tree as a natural resource so as to encourage restoration as against the present trend of destruction.

Samples of seeds, fruits and flowers were analyzed to determine moisture content, crude protein, carbohydrate, ash, free fat and total fat. Qualitative analysis of sugars in a treacle sample was carried out by TLC and it was observed that it contained sucrose, glucose and fructose. Quantitative estimation of sugars in the treacle sample was done by Lane and Eynon method and was found to contain higher amount of sucrose. Treacle of M. longifolia to was found to contain 52% non-reducing sugar and 23% reducing sugars. The levels of protein in all the fractions analyzed were quite low. The kernels of honey seeds contain about 53% of oil. The fat yield of seeds is higher than that of oils such Soya, Olive, Sunflower and Sesame. Fatty acid composition of the seed oil was analyzed by using GLC. Oil had 54% unsaturated fatty acids. Out of this percentage 44.5% is monounsaturated fatty acids and 9.7% is polyunsaturated fatty acids. The main unsaturated fatty acid was oleic acid, which is a monounsaturated fatty acid. The second highest unsaturated fatty acid was Linoleic acid. Further it was observed that this oil contained 45% of saturated fatty acids. The main saturated fatty acids were palmitic acid and Stearic acid.

Edible parts of the honey tree studied are of potential interest because of their high nutritive value and lipid content. It is similar to that of other high quality commercial oils such as olive oil, canola oil and peanut oil. The cultivation of these trees as carried out traditionally by the villagers since ancient times, should therefore be encouraged while avoiding one-crop farming, which could increase the spread of pests and degradation of the soil.

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