

**EXTRACTION OF NATURAL FLAVOR FROM MANGO
(*Mangifera indica* L.) FOR FOOD APPLICATIONS**

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By
S.P.N.P. SUBASINGHE

**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

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ABSTRACT

Processed food products with natural mango flavor are rarely present in the market and they are with high cost as mango is a perishable and seasonal fruit. This study was carried out with the objective of extraction of natural flavor from mango fruit using a commercially applicable method. Four extraction techniques namely ultra sound assisted extraction, shaker extraction, steam distillation and cleverger apparatus were employed. Based on the preliminary studies, shaker extraction was selected as the best extraction technique while *Tom EJC* mango variety was selected as the best variety among the tested mango varieties. Samples were prepared using 40% (v/v) ethanol and water as the solvent systems by using 1:5 solute: solvent ratio and were extracted using shaker technique. A sensory evaluation conducted for extracted two flavors have indicated that organoleptic properties such as odor, flavor, after taste and overall acceptability were higher in mango flavor extracted using 40% (v/v) ethanol. This flavor was with pH value 5.04, total soluble solids 10°Bx, titratable acidity 0.59±0.03% and 108.27±2.8 g/L of alcohol. The best flavor selected from sensory analysis was used to develop mango flavored stirred yoghurts with four different levels; 5%, 7.5%, 10% and 12.5%. Another plain yoghurt was prepared without adding flavor as the control. Evaluation of the properties of each yoghurt by using complete randomized design and one way ANOVA for each property pH, total soluble solids, titratable acidity, syneresis, viscosity and color exhibited a significant difference among each flavored yoghurt. Grouping using tukey pairwise comparison and considering the properties with plain yoghurt have indicated 12.5% is most preferable level from the used levels for mango flavored yoghurt production. At this level most of the physicochemical properties were similar to plain yoghurt while maintaining the mango flavor and exceeding that level was not cost effective. Accordingly, mango flavor extraction using low fiber variety with characteristic flavor like *Tom EJC* mango with shaker technique using 40% ethanol can be recommended to extract natural flavor more efficiently for commercial applications.

Keywords: Extraction techniques, Food applications, Mango flavor