

# **Variability studies on Karuthacolomban Mangoes (*Mangifera indica* L.) based on physical parameters in Thenmaradchi divisions of Jaffna, Sri Lanka**

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## **Abstract**

Karuthacolomban is the well-known mango type cultivated in the Jaffna district with high consumer preference. But there is no consistency in the characters found among the existing plants. To classify the different types of Karuthacolomban cultivars based on physical parameters, a study was carried out in the Thenmaradchi division of the Jaffna peninsula. Plants were selected from three gramaniadhari divisions and labeled and data were collected and tabulated. Sixteen Karuthacolomban trees were selected through purposive sampling methods. Principle Component Analysis (PCA) was carried out to characterize the physical properties. Cluster analysis was conducted to group the plants based on their similarities. From the dendrogram, four clusters are identified. Based on these analyses, plants grouped into cluster III and IV have shown the promising characters. Cultivars with higher mean for weight of fruit (> 300 g), flesh (> 220 g), peel (> 60 g) and stone (>32g), moisture content (< 85%) were grouped into two clusters. No significant difference was recorded for stone length, fruit diameter and pulp to stone ratio among these clusters. Based on these analyses, plants which are grouped into cluster III and IV were selected as better types. Further molecular level study is needed to confirm these differences before using these plants as mother plants.

**Keywords:** Cultivar, Karuthacolomban mango, Physical characters Variability