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PAPER

Variability Studies on Karuthacolomban Mangoes (*Mangifera indica* L.) Based on Physical Parameters in Thenmaradchi Division of Jaffna, Sri Lanka

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Karuthacolomban is the well known mango type cultivated in Jaffna district, with high consumer preference. But there is no consistence in the physical characters found among the existing plants. To classify the different types of Karuthacolomban cultivars based on physical parameters, a study was carried out in Thenmaradchi division of Jaffna Peninsula. Plants were selected from three grama niladhari divisions and labeled, and data were collected and tabulated. Sixteen karuthacolomban trees were selected through purposive sampling methods. Principal component analysis was carried out to characterize the physical properties. Cluster analysis was performed to group the plants based on their similarities.

From the dendrogram, four clusters are identified. Based on these analyses, plants grouped in cluster III and IV have shown the promising physical characters. Cultivars with higher mean for weight of fruit (> 300 g), flesh (> 220 g), peel (> 60 g) and stone (>32g) and moisture content (< 85%) were grouped into these 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.