

Cultivar Variability Studies on Karuthacolomban Mango (*Mangifera indica* L.) based on Phenotypic Characters in Thenmaradchy division of Jaffna Peninsula, Sri Lanka

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Abstract: Mango karuthacolomban is a very promising and popular cultivar existed with high consumer preference. But, there is no consistency in the characters among the available types. Hence, the objective of this study is to identify the different types of karuthacolomban cultivars based on physico-chemical and sensory analysis. Trees were selected in Thenmaradchy division of Jaffna peninsula from three grama nildhari divisions. Principle component Analysis was carried out to characterize the physicochemical properties. Cluster analysis was performed to group the plants based on their similarities and separated from the dendrogram. Sensory analysis was through Firdmen's non-parametric analysis of variance. Correlation was observed between mean sensory scores and chemical properties of the fruits. 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 namely cluster 3 and cluster 4. Similarly, based on chemical analysis, cultivar with higher mean for total soluble solids (> 150 Brix), total sugar (13.5 g/100g flesh) and ascorbic acid content (34 mg/100g flesh) with low mean value of titratable acidity (<0.4%) and fiber content (<4.5 %) were grouped into two clusters namely cluster 1 and cluster 2. By cross analysis of these clusters with mean sensory scores, four plants were selected as mother plants. Further molecular level study is needed to confirm these differences before using these plants as mother plants.