

SOME STUDIES IN CARICA PAPAYA L.

By

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A B S T R A C T

A total of sixty five accessions of Carica papaya L were collected from the districts of Matale, Matara, Kandy, Ratnapura, Jaffna, Vavuniya and Trincomalee. Measurements of lamina width and length, petiole length, number of fruits, fruit length and diameter and fruit weight were studied in these accessions.

The accessions from Trincomalee and Jaffna districts showed the lowest mean lamina width, lamina and petiole length while the accessions of Kandy and Matale had the highest values for the above parameters. The lowest fruit length, diameter and weight were found in accessions of Trincomalee whereas the accessions of Kandy and Matale showed the highest values for fruit parameters.

Seeds from forty five ripe fruits of the selected accessions were planted in the nursery of the Research Station, Department of Minor Export Crops, Matale. Only twenty accessions showed good germination (above 20%) and ten accessions (2, 10, 11, 13, 22, 28, 39, 46, 48 and 49), among these were used for a detailed study of morphological and yield characters under Matale conditions.

Accession number 2 was found to have the lowest mean lamina width, length and petiole length. Accession number 10 had the highest mean lamina width and accession number 49 showed the highest lamina length. Accessions number 10,

49 and 48 gave the highest mean lamina width, length and petiole length respectively. Accession number 48 showed the highest fruit number, fruit length and diameter, fruit weight and papain yield while accession number 11 gave the lowest fruit length, diameter and fruit weight. Accession numbers 46 and 39 gave the lowest fruit number and papain yield respectively.

Vegetative propagation study was carried out using coppiced shoots. Maximum rooting (40%) was found when three node cuttings were used with the commercial synthetic hormone seradix (IBA). Considering the number of nodes in the cuttings, seradix-treated cuttings gave significantly higher rooting. However, a similar result was not observed with buds treated with the same hormone.

Studies on papain yield of CO-2 variety indicated that yield was maximum at 70-110 day maturity. Fruit size was found to influence the papain yield. Fruits of 22.0 cm length and 12.5 cm diameter gave the maximum yield. Spraying with ethrel (2-chloroethyl phosphonic acid) at 200 ppm concentration one day before tapping significantly increased the papain yield. Spraying on the whole plants with ethrel gave the highest (276%) papain yield. The time taken for fruit ripening was not affected by tapping.

Pollen from two types of males (flowers of panicle and cymes inflorescence) did not cause significant

difference in fruit setting.

Effective control of papaya mosaic virus disease was achieved by spraying Sumithion (Dimethyl 3-methyl-4-nitrophenyl phosphorothionate) weekly at a concentration of a fluid ounce per 2 gallons of water.