

ADAPTABILITY OF PINEAPPLE VARIETIES TO CLIMATIC AND EDAPHIC
PARAMETERS IN SELECTED AGROECOLOGICAL ZONES OF SRI LANKA

By

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ABSTRACT

Agro-ecological factors play important role in determining yield and quality of fruits including pineapples. Hence, testing of ecological adaptability and isolation of eco-types is a vital factor in the expansion of pineapples in Sri Lanka. Studies were conducted at three ecological zones [Mahailuppallama (DL₁), Walpita (WL₃) and Narammala (IL₁)] over 3 years (1998-2000) in encompassing two major seasons (Yala and Maha) to investigate the effects of time of planting and application of a coir dust mulch on the adaptability of 'Mauritius' and 'Kew' pineapples. The primary objective was to observe the ecological adaptability in terms of yield and fruit quality, and to characterize the eco-types based on their morphology.

These sites had different climatic conditions. Walpita experienced consistently favorable climatic and edaphic parameters and Mahailuppallama experienced extreme conditions. The climatic conditions at Narammala were in between.

Mulching hastened flowering of 'Mauritius' at Mahailuppallama and Narammala, and 'Kew' at Narammala. In contrast, sucker production varied in 'Mauritius' and 'Kew' depending on location. Mulching increased sucker production in both varieties. Weight of the crowns as a percentage of fruit weight was reduced by mulching in 'Kew' at Walpita and Narammala. Mean fresh fruit weights of both varieties at all locations were affected by mulching and, the impact varied from season to season. The fruits produced at Walpita and Narammala in 1998/99 Maha were heavier than those in 1998 Yala.

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Mulching influenced the circumference of fruits produced earlier in 1998 Yala at Mahailuppallama. Circumferences were not influenced by times and seasons of planting at Walpita. Mulching increased fruit circumference of both varieties produced in 1998 Yala and earlier in 1998/99 Maha. Mulching increased the lengths of 'Mauritius' fruits produced in 1998 Yala more than in 'Kew'. Mulching increased juice content of the fruits at all locations. 'Kew' produced in middle of the season had more pulp than in later planting at Mahailuppallama. 'Mauritius' grown earlier in the season had a greater content of pulp than the same variety produced later. Fruits produced in 1998/99 Maha had pulp more than those produced in 1998 Yala at Mahailuppallama. 'Mauritius' had a ratio more than 'Kew'. Higher ratio was recorded in the fruits produced in 1998 Yala and varied according to the location. 'Mauritius' had a greater ratio than 'Kew' at Walpita. 'Kew' at Mahailuppallama had the highest ratio. Mulching lowered the brix-acid ratio.

Both varieties were suitable for cultivation with a coir dust mulch earlier and later in the Maha season at Walpita and Narammala. 'Mauritius' was the better variety for cultivation later in Yala and earlier in Maha with a coir dust mulch at Mahailuppallama. Pineapple cultivated in different agro-ecological regions in Sri Lanka demonstrated ecological adaptability in terms of eco-types evolved. 'Kew' and 'Mauritius' had a great diversity in terms of morphological characteristics and the diversity in 'Kew' was greater. The potential of these results in determining the adaptability of pineapple to the agro-ecological conditions are presented.