

ABSTRACT

GROWTH AND YIELD OF 'SUNRISE SOLO' PAPAYA IN RELATION TO FERTILIZER MANAGEMENT

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Papaya fruits are very popular and much-liked. The introduction of the 'Solo' variety has formed a basis for the papaya industry in many parts of the world. This particular 'Sunrise Solo' cultivar was introduced into Jamaica in 1964 but remained under-exploited. In about 1986, some agro-industrial concerns started to establish commercial holdings on some 50 hectares, which were later expanded to 200 hectares. However, the agricultural practices were based on those learnt from the Hawaiian experience.

The work described here aims to supply information and formalise guidelines on the fertilizer requirements of the 'Sunrise Solo' Papaya cultivar for maximum production under Jamaican conditions. The large-scale field experiment was established on 3,630 square meters on Soil Type 21A (Water Valley Silty Clay) at Green Castle Estate, St. Mary,

Jamaica. There were 896 experimental papaya plants in eight fertilizer treatments, each replicated four times. Plants were grown from seeds and their growth, nutritional status and fruit production were followed for some 24 months. Nitrogen, phosphorus and potassium fertilizers were applied in different combinations with N,P and K ranging from 238 to 944 kg/ha in each case over a period of eighteen months.

Results have shown that papaya plants can be grown on clay soil if precautions are taken during land preparation to avoid water-logging of the soil. However, plants should not be subjected to drought conditions as these caused drying of the leaves and reduced fruit production. Sound agricultural practices, especially for the combat of pests and diseases have to be observed.

The increased application of fertilizer, especially nitrogen, was very beneficial to the plant: plants became taller, stouter, retained more leaves, were earlier in flowering and fruit set and bore more fruits. However, fruit quality was not affected by the application of fertilizers within the limits used.

Although papaya plants demand high fertilizer inputs, the returns in fruit production warrants such expenditure.