

EFFECT OF DIFFERENT PLANTING SYSTEMS ON FLOWERING AND CROP DURATION WITH DIFFERENT LEVELS OF NUTRITION AND SPACING IN BANANA cv. ROBUSTA (AAA)

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ABSTRACT

The investigations on the effect of different planting systems and nutrition levels on number of days required for 50% flowering, days to shooting, days from shooting to harvesting and the total crop duration of banana cv. Robusta was studied during 2000-2003 for both main and ratoon crops with 19 treatments replicated thrice with a Randomized Block Design (RBD). The treatments includes, planting 2 and 3 suckers/hill, at a spacing of 2.0 m x 2.0 m, 2.5 m x 2.5 m, 3.0 m x 2.0 m, with 3 levels of NPK 180:125:250g/hill; 270:185:375 g/hill and 360:250:500 g/hill and were compared with conventional planting system (single sucker/hill) with recommended practices. Planting two suckers at 3.0mx2.0m apart with the application of 270:185:375g NPK per hill, resulted in early flowering and was on par with the planting of two suckers per hill at 2.5mx2.5m, apart with the application of 180:125:250g NPK per hill. Shooting, shooting to harvesting and total crop duration were delayed in high density planting systems with reduced nutrition levels both in main and ratoon crops

Key words : Banana, Robusta, Planting systems, Nutrition, Crop duration.

Globally, banana is the fourth most important commodity after rice, wheat and corn. It ranks first in importance among the fruits. It is produced in tropical and subtropical regions of developing countries. The high density planting (HDP) is one of the recent and novel concepts of increasing productivity without affecting the quality of fruits. This system of planting has been successfully implicated in fruit crops such as mango (Santram, 1993) and banana (Sathiamoorthy and mustaffa, 2001), Since it results in the optimum utilization of natural resources.

Banana plant, which mostly feeds at the surface of the soil, it is of paramount importance to maintain a high degree of soil fertility, if the production is to be maintained at an economical level over long periods. Many workers confirmed that banana requires large quantities of potassium, moderate quantities of nitrogen and relatively lower doses of phosphorus, which determine growth and productivity. Although adequate information on banana nutrition is found in the literature, most of it is for low-density situation. The information available on proper system, density of planting, and nutritional requirement for banana cv. Robusta under different agro-climatic situations is meager. This clearly emphasizes the need for research on these aspects, which is expected to provide

vital information on practical benefits to the growers. Keeping this in view, the investigations were carried out to know the effect of different planting systems and nutrition levels on flowering and crop duration of banana cv. Robusta, in both main and ratoon crops.

MATERIALS AND METHODS

The present investigations were carried out in the farmer's field during 2000-2003 at Tarikere taluk of Chikmagalur district, Karnataka state. The soil was sandy clay loam having pH : 6.6, electric conductivity : 0.16m mhos/cm : organic carbon : 0.90% available nitrogen : 87.0 kg/ha, available phosphorus : 80.0 kg/ha and available potash : 425.0 kg/ha.

The experiment was laid out with banana cv. Robusta in a randomized block design with 19 treatments and 3 replications. Each treatment was surrounded by 2 guard rows on all sides of the treatment, occupying a net area of 12m x 12m; the treatment details are presented in Table 1.

The planting systems followed as per the treatments were, T₁ to T₉ – planting 2 suckers per hill, T₁₀ to T₁₈ - three suckers per hill with a spacing of 2.0mx2.0m (T₁, T₂, T₃ and T₁₀, T₁₁, T₁₂), 2.5mx2.5m (T₄, T₅, T₆ and T₁₃, T₁₄, T₁₅) and 3.0mx2.0m (T₇, T₈, T₉ and T₁₆, T₁₇, T₁₈) and compared with recommended practices (T₁₉) i.e., planting single sucker per hill at 1.8x1.8m apart. The quantity of nutrients (NPK) applied to each treatment