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# NUTRITIONAL INVESTIGATIONS IN NENDRAN BANANA FRUIT AND DRY MATTER YIELD

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ABSTRACT

Effect of three levels of N (50, 100 and 150 g/plant) and three levels of P2 05 (15, 30 and 45 g/plant) with a constant dose of 300 g/plant of K on the dry matter and fruit yield of banana Cv.Nendran was investigated at Tamil Nadu Agricultural University, Coimbatore. Significantly good bunch weight was recorded under 100 g N and 15 g P2 05/plant while the application of 100 g N and 30 g P2 05/plant recorded the highest dry matter production.

Bannana Cv.Nendran is a food-fruit of the masses and is becoming increasingly popular as a commerical variety. In Tamil Nadu it occupies an area of about 5000 acres. Studies onthe nutritional behaviour of Nendran variety under Tamil Nadu conditions is very scanty. Hence, to investigate the effect of varying levels of N and P on the dry matter and fruit yield, experiments were conducted at Tamil Nadu Agricultural University orchard with the Cv.Nendran as test crop.

## MATERIALS AND METHODS

The experiment was condcuted in a clay loam soil which was low in available N and P and rich in available potassium with neutral pH.

The manurial treatments consisted of three levels of N viz 50(NI) 100 (N2) and 150g (N3)/plant, and three levels of P, 15(P1), 30(P2) and 45g (P3)/plant with a constant dose of 300 g k/plant and their possible combinations. Randomised blocks design was employed and each treatment was replicated three times.

Sword suckers of uniform size weighing about 1.5 kg were planted adopting a spacing of 1.8 m on either side in pits of 30x30x30 cm. The corms of the suckers were pared, dipped in mud slurry and furadan granules to guard against nematodes was applied at the rate of 40g/sucker, and planted in the pits. Half the dose of fertilizers was applied 0.5 m away from the pseudostem in a circular basin on the third month and the second half at the 5th month. N, P and K were applied in the form of urea, super phosphate and nuriate of potash.

Irrigation, weeding and plant pretection were given whenever necessary. The dried leaves were removed to keep the field sanitation and aeration. At full maturity the bunches were harvested treatmentwise and weighed including the hands with peduncle cut at the empty node.

To record the total dry matter production, plants after maturity were selected at random, uprooted with the corm and the fresh weight of each part namely corm, leaf, petiole, fruit, internal stalk and external stalks were recorded. Based on the moisture content of the plant parts the total dry matter yield was recorded. The data obtained were subjected to statistical scrutiny and the inferences derived are discussed in this paper.

## RESULTS AND DISCUSSION

The details regarding the fruit yield and dry matter yield under each treatment are presented in table.

Fruit yield :

The bunch weight was significantly influenced by N and P treatments. The bunch weight increased with increasing levels of N upto 100 g and decreased thereafter. At this N level P at 30g/plant recorded the highest bunch weight which was on par with P at 15 g/plant contrary to the finding of

Table 1. Effect of Various treatments on bunch weight and dry matter production (Mean values)

| S.No. | Treatments | Bunch wt(kg) | Total dry matter yield (kg) |
|---|---|---|---|
| 1. | N1 P1 K | 11.07 | 6.79 |
| 2. | N1 P2 K | 12.34 | 6.76 |
| 3. | N1 P3 K | 11.61 | 6.68 |
| 4. | N1 P1 K | 13.41 | 6.99 |
| 5. | N1 P2 K | 13.66 | 7.06 |
| 6. | N1 P3 K | 12.56 | 6.89 |
| 7. | N1 P1 K | 11.44 | 6.98 |
| 8. | N1 P2 K | 10.69 | 6.95 |
| 9. | N1 P3 K | 12.20 | 6.85 |
| | Significance | | |
| | C.D | 1.01 | 0.347 |
| | (0.05) | | |

workers (Veeraraghavan 1972, Ramaswamy and Muthukrishnan, 1974) and the current state level general recommendation for Tamil Nadu, the present study revealed that phosphorus requirement of Nendran banna was low at least when grown under garden land conditions. Veeraraghavan (1972) has reported that Nendran under Kerala conditions require 228 grams of p/plant. Kerala soils being mostly acidic, require a high dose of P due to non-availability of P to the plants. In the present study, the soil reaction was normal (pH 7.4) and the P content of 11 kg/ha in the soil must have been an adequate level to start with. The other studies on P requirements of banana mentioned earlier relate mostly to Cavendish clones. Perhaps the physiology of Nendran banana might be quite different from other clones in respect of its metabolism.

Even between Robusta and Poovan, the P requirement is quite different (Veerannah *et al.*, 1976). They have reported that Robusta requires 75 kg p/ha while it is 35 kg/ha for Poovan. In the light of the above findings, it appears that Nendran banana may require less P than other clones.

Total dry matter production :

The total dry matter production ranged from 6.68 to 7.06 kg/plant among the treatments in the present study. Earlier workers have reported 4.5 to 10.5 kg in lacatan (Boland, 1960 and 1962), 18 kg and 6.5 kg in Dwarf Cavendish under French Guinea conditions (Baillon *et al.*, 1933). Twyford and Walmsley (1973) recorded 5.15 kg dry matter in Robusta banana. The dry matter varied with the variety and location. Application of 100 g N and 15 g P/plant recorded the highest bunch weight and dry matter yield which was on par with 100 g N and 30 g p/plant.

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