Effect of post-shooting spray of certain nutrients on yield and quality of banana cv. NENDRAN (AAB- PLANTAIN)

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ABSTRACT

In the post shooting spray experiments, foliar spraying of potassium di hydrogen phosphate + urea + 2,4-D and SOP at 1.5 per cent resulted in obtaining higher yields with good quality fruits with relatively higher benefit: cost ratio. Thus, the overall study clearly indicates the benefit of giving post shoot application. Hence, we can conclude that either SOP at 1.5 % or combination of 0.5 % potassium di hydrogen phosphate + 1% urea + 20 ppm 2,4-D can be integrated in Nendran banana nutrition as foliar spray twice, first at the time last hand emergence and second 30 days thereafter so as to produce quality bunches, which is cost wise very economical

Banana being a gross feeder requires high amount of nutrients for proper growth and production. Its nutritional requirement is estimated to be around 320 kg N, 32 kg P_2O_5 and 925 kg K_2O per ha per year (Lahav and Turner, 1983). Under traditional farming system, banana crop receives its last dose of fertilizers (nitrogen and potassium) at 7th month after planting *i.e.* just before shooting, which has to support the requirement of nutrients until harvest since large quantity of photosynthates are to move from the source to the sink *i.e.* developing bunches at this phase. Any limitation in the supply of nutrients at this crucial stage affects the bunch size and quality. Because of this problem, poor filling and development of fingers is often reported. Hence, an additional dose of fertilizer after shooting has become imperative. However, it is not wise to go for soil application of fertilizers at finger development stage, since the uptake is slow and low (Veerannah *et al.*, 1976). Many reports have indicated the usefulness of post shooting spray of various nutrients during fruit development in influencing the fruit yield, shelf life and quality (Kannan, 1980). Banana has been found to be responding well to potash spray supplied through muriate of potash (MOP) or potassium di-hydrogen phosphate (KH_2PO_4) (Mahalakshmi, and Sathiyamoorthy, 1999). However, the effect of sulphate of potash (SOP) and the combined effect of above nutrients as a post shooting applicant in banana has not been assessed earlier. With all these background, an investigation was carried out at to study the influence of these nutrients on yield and quality of banana

MATERIALS AND METHODS

The treatment details are given below.

T_1 = Spraying of 0.5% KH_2PO_4 + 1% Urea + 20 ppm 2, 4-D;

T_2 = Spraying of 1.5% SOP;

T_3 = Spraying of 0.5% SOP

T_4 = Control (Water spray)

The spraying was done twice, first immediately after opening of the last hand and second, 30 days after the first spray. The observations on the total number of leaves retained at harvest, the total chlorophyll content (Yoshida *et al.*, 1971), number of days taken from shooting to harvest (maturity days), weight of the bunch, total number of hands and fingers in a bunch, average weight of the finger, pulp weight, peel weight and their ratio (Gottreich *et al.*, 1964), TSS, the total, reducing and non-reducing sugars (Somogyi, 1952), titrable acidity (A.O.A.C., 1960), sugar/acid ratio and physiological loss in weight, green life and shelf life were made. The following economic analyses were carried out.

$$\text{Net return } (Rs\,ha^{-1}) \,\mathbb{N}\, \text{Gross return} > \text{Cost of cultivation}$$

$$\text{Benefit cost ratio } \mathbb{N} \frac{\text{Gross return (Rs. ha}^{-1})}{\text{Cost of cultivation (Rs. ha}^{-1})}$$

RESULTS AND DISCUSSION

The effect of post shooting spray of certain nutrients on improving the bunch weight and its quality of Nendran banana was assessed. Significant differences were