

Effect of post flowering foliar sprays of nutrients on physico-chemical properties of kokum (*Garcinia indica* Choisy)

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ABSTRACT

The material for the present study consisted of twenty eight year old bearing kokum trees. The experiment was conducted in RBD with seven treatments of foliar application of nutrients like urea, KNO_3 and monopotassium phosphate at the Department of Horticulture, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri during 2006-07 to improve the physico-chemical properties of kokum. Results revealed that foliar application of urea (0.5% twice) influences the length (3.98 cm), breadth (4.24 cm), circumference (13.22 cm) and fruit weight (32.67 g) as compared to others while in chemical composition highest TSS 15.93 °B was recorded by urea (0.5% twice) spray and lowest acidity (3.73%) was noticed by monopotassium phosphate (0.5 twice) spray. Highest reducing sugar (6.05%) non-reducing sugar (5.54%) and total sugar (11.59%) was found in the fruits of plants treated with monopotassium phosphate (0.5% twice).

Key words : Kokum tree, Foliar spray, Monopotassium phosphate, Urea

Kokum (*Garcinia indica* Choisy) belongs to the genus *Garcinia*, a large genus of polygamous evergreen trees. Fruits of kokum have many medicinal properties. The fruit juice is given in bilious infections. Kokum butter extracted from seed is considered nutritive. Kokum rind is a rich source of 8-hydroxycitric acid (HCA) which is unique acid lowers the blood lipids, such as cholesterol and glycerides. In spite of various beneficial properties of kokum, it is neglected by the farmers for various reasons and the most important one is the premonsoon rains that adversely affect the quality of fruits. Large quantities of fruits are required for processing to meet rapidly increasing demand for kokum products. The quality of kokum products is directly related to the quality of fruits. Hence, the present study was conducted at Department of Horticulture, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri during 2006-07 with an objective to improve quality of fruits through post-flowering sprays of chemicals.

MATERIALS AND METHODS

The experiment was conducted at Experimental Farm of the Department of Horticulture, College of Agriculture, Dapoli. The material for the present study consisted of twenty eight year old bearing kokum trees. This plantation was established at spacing of 8 x 5 m. The experiment was conducted in Randomized Block Design with seven treatments viz., T_1 : (Urea-0.5%), T_2 : (Urea-0.5% twice), T_3 : (KNO_3 -0.5%), T_4 : (KNO_3 -0.5%) twice), T_5 : (Monopotassium phosphate 0.5%), T_6 : (Monopotassium

phosphate 0.5% twice) and T_7 : Control (No spray). All the treatments were replicated thrice with two trees per treatment per replications. The sprayings were undertaken at pea grain stage *i.e.* when fruits were of pea grain size (3.5 mm) and the second one 20 days after the first spray. Observations of fruit length (cm), fruit breadth (cm), fruit circumference (cm), fruit weight (g), T.S.S. (°Brix), acidity (%) and sugars (%) were recorded. The statistical analysis was conducted as per the methods suggested by Panse and Sukhatme (1967).

RESULTS AND DISCUSSION

The data on effect of post flowering foliar sprays of nutrients on physical parameters of kokum fruit are presented in Table 1.

The maximum fruit length (3.98 cm) was noticed in T_2 (urea twice), which was significantly superior over rest of the treatments, while the lowest fruit length (3.24 cm) was noticed in T_6 (MPP twice). The treatment T_2 (Urea twice) resulted in the highest fruit breadth (4.24 cm) and was minimum (3.93 cm) in T_6 (MPP twice). Similarly, the maximum fruit circumference was noticed in T_2 (13.22 cm) and minimum in T_6 (12.32 cm). The maximum fruit weight was noticed in T_2 (32.67 g) whereas, minimum was recorded in T_6 (24.63 g). Nitrogen is believed to give impetus to the formation of new cells and, therefore, the growth in size, volume and mass are associated with nitrogen. Similar increase in fruit weight by foliar application of one per cent urea and KNO_3 were reported by Vijayalakshmi and Srinivasan (1998) in mango