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Effect of plant growth regulators and micronutrients on growth, yield and storage life of banana (*Musa* spp) cv. SHRIMANTI

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ABSTRACT

A field experiment was conducted to find out the effect of growth substances, micronutrients and waxol on growth, yield, and storage life of banana (*Musa spp*) cv. SHRIMANTI. Higher concentrations of IAA (80 ppm) and GA_3 (80 ppm) and micronutrients mixture 1%two spray enhanced the height(179.35 cm), pseudostem girth(66.53 cm) and number of leaves(14.35). Early maturity (121.50 days) was introduced with IAA (80 ppm) and GA_3 80 ppm delayed the maturity. The maximum number of days required for ripening was found with waxol 6 % (25.75 days) and the lowest in micronutrients mixture 1% one spray (10.75 days). Maximum weight of bunch (23.80 kg) was recorded with two sprays of 1% micronutrient mixture, maximum number of hands (9.00) and fingers (136.25) were recorded by IAA 80 ppm. Maximum length (23.00 cm), girth (17.00 cm) and weight of mature finger (185.60 gm) were recorded in micronutrient mixture 1 % with two sprays. It was found that application of IAA 80 ppm, GA_3 80 ppm and two sprays of 1 % micronutrients mixture were effective for plant growth, finger attribute and yield. Whereas waxol 6% was found effective in keeping quality (storage life).

Key words : Micronutrients mixture, ppm, Foliar application, Ripening, Storage life.

Banana *Musa spp* is one of the most important fruit crops grown in India. It is dessert fruit for millions, is used in different regions as staple food owing to its rich and easily digestible carbohydrates. It is rich source of vitamins, minerals and has several medicinal properties. The edible banana is believed to have originated in hot tropical regions of South- East Asia (Spiden, 1926 and Suar, 1952). It is grown across the country in tropical and subtropical region. In Maharashtra total area under banana is 72.20 thousand ha and production is 4.45 million tones. The productivity of banana is 60.00 tonnes ha^{-1} being highest in the country (Anony, 2001 b). In India, people prefer fresh fruits instead of canned products. Banana is also one of the fruits, people prefer fresh, the economics of banana depends on the cost of transportation and storage. However, low shelf life and bad transportability are two major problems in case of banana. It is generally harvested when green between 70 to 100 per cent maturity and ripened before consumption (Paul Thomas *et al*., 1968). Pre harvest and post harvest handling of banana fruits is an important aspect of banana trade. Early and even maturity of bunches are the immediate needs of the banana growers of the region. In view above, an investigation was conducted to find out the effect of plant growth substances and micronutrients on growth, quality and storage life of banana cv. SHRIMANTI.

MATERIALS AND METHODS

A field experiment was conducted at College of Horticulture, Marathwada Agricultural University, Parbhani during 2002-2003. The experiment was laid out in randomized block design with 8 treatments, *viz*. T_1- Control, T_2- $GA_3$40ppm, T_3-$GA_3$80 ppm, T_4-IAA 40ppm, T_5- IAA 80 ppm, T_6-micronutrients mixture 1 % one spray, T_7- micronutrients mixture 1 % two spray and T_8- waxol 6%.

All recommended cultural practices were followed after plantation of banana. The stock solutions of IAA and GA_3 were prepared by dissolving l g of respective growth regulator in50 ml alcohol and added distilled water to make volume of 1 lit. The required concentrations of micronutrients mixture were prepared by directly mixing required quantity of micronutrient mixture in water and spray solutions were used for spraying immediately after preparation. Spray was given at flag leaf stage *i.e*. just before flowering by using a hand sprayer. Growth regulators and micronutrients mixture were sprayed on leaves on both the sides. Precautions were taken to avoid the drizzling of the sprays on the other treatments. After harvesting the Banana, Bunches were completely dipped in 6 % waxol solution for 30 to 40 seconds. Observations were recorded regularly and statistically analysed as per the methods given by Panse and Sukhatme (1967).