

EFFECT OF PLANT GROWTH REGULATORS ON GROWTH PARAMETERS OF SWEET POTATO (*IPOMOEA BATATAS* (L.) LAM.)

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Abstract: A field experiment was carried out during *khari*f2016-17 at Kittur Rani Channamma College of Horticulture, Arabhavi (Karnataka) to study the effect of growth regulators on growth parameters of sweet potato [*Ipomoea batatas* (L.) Lam.]. The results revealed that the spraying of GA₃ @ 100 ppm (T₃) showed significantly highest Vine length (125.50 cm), Petiole length (26.83 cm) and Significantly highest leaf area (87.43 cm²) was recorded with the combination of GA₃ 100 ppm plus CCC 250 ppm (T₁₀), which was on par with GA₃ at 100 ppm (85.18 cm²),

Keywords: Sweet potato, Plant growth regulators, Growth parameters

INTRODUCTION

Sweet potato [*Ipomoea batatas* (L.) Lam.] is an important tuber crop belonging to the family Convolvulaceae. It is an important starchy vegetable crop in tropics and sub tropics. It is mainly grown as one of the supplementary food crops to meet the requirements of carbohydrates and also to provide raw materials for manufacture of starch, alcohol, lactic acid, vinegar etc. The nutrition of sweet potato in human diet is quite appreciable since, it provides high quantity of starch, substantial amount of vitamins (A, B and C) (Hung *et al.* 1999), minerals and trace elements compared to cereals. It would be a good substitute for rice and wheat (Thakur, 1975). It also contains considerable amount of beta-carotene (5.40 to 20.00 mg/100g) and sugar content. In India sweet potato is grown utilizing the-monsoon rains during *Khari*f (June-July) and with supplemented irrigation during Rabi (October-November). In India, sweet potato is being cultivated in almost all the states with an area of 111 ha, with a production of 1450 metric tonnes and productivity of 10.4 MT/ha (Anonymous, 2015). India accounts for about 68% of the total production of South Asia followed by 27% in Bangladesh and about 5% in Sri Lanka. In India, Sweet potato is cultivated mainly in Odisha, Uttar Pradesh, West Bengal, Bihar, Karnataka, Andhra Pradesh, Tamil Nadu and Kerala.

The role of plant growth substances in the physiology of plant is one of the most interesting chapters in the science. The plant growth substances are organic compounds, other than nutrients which in small concentration influence the physiological processes of plants. They have been used for various beneficial effects such as promoting plant growth, increasing number of flowers, fruit size and inducing early and uniform fruit ripening. GA₃ has a major effect on growth and development activating the entire metabolic activities of many crops. GA₃ is one of the important growth regulators that stimulate vegetative growth (Singh and Rajodia, 2001), yield (Khan *et al.*, 2002) and sugar content (Babu, 2000). Cycocel (CCC) a new quarternary ammonium growth retardant is the most effective.

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