



Research Paper

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Effect of growth regulators on growth and yield of sapota [*Manilkara achras* (Mill.) Forsberg]

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ABSTRACT : The results of experimentation confirmed the efficiency of the growth regulators for better growth and yield of sapota variety Kalipatti. The study revealed that CCC at 450 ppm significantly increased the yield per tree and yield per hectare. The treatment GA₃ at 150 ppm enhanced the vegetative growth of sapota. The treatment GA₃ at 150 ppm showed earliness in sprouting of new shoot, increased shoot length and maximum number of leaves per shoot. The maximum girth of shoot was recorded in treatment CCC 450 ppm.

KEY WORDS : Sapota, Growth, Yield, CCC, GA₃, NAA

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Sapota [*Manilkara achras* (Mill.) Forsberg] popularly known as chiku in India, is an evergreen fruit tree native of tropical America and probably originated in the southern Mexico. India is leading producer of sapota. Sapota is famous for its delicious and sweet taste.

In case of sapota, maximum vegetative growth along with flowering takes place during September-November. Therefore, it seems essential to suppress the vegetative growth with the help of growth retardant, which help to divert the major portion of metabolites towards flowering. The commonly used growth retardants, cycocel is reported to be most promising in respect of growth retarding and flowering promoting effect. The objective was to study the effect of growth regulators on growth and yield of sapota cv. KALIPATTI.

RESEARCH METHODS

The present investigation was undertaken during the year 2009-10 at the Department of Horticulture, Marathwada Krishi Vidyapeeth, Parbhani. The experiment was carried out

with Randomized Block Design with ten treatments and three replications.

The experimental trees used were 35 years old grafts of chiku var. Kalipatti grafted on Khirni (*Manilkara hexandra* Roxb.) root stock spaced at 10 x 10 meters. The growth regulators CCC, NAA and GA₃ sprayed at one month before flowering and at pea stage. The treatments comprised of CCC 250 ppm, CCC 350 ppm, CCC 450 ppm, GA₃ 50 ppm, GA₃ 100 ppm, GA₃ 150 ppm, NAA 100 ppm, NAA 150 ppm, NAA 200 ppm and control (No spray). The observations on growth characters like days to sprouting of new shoots, length of shoots (cm), girth of shoots (cm), number of leaves per shoot, leaf area (cm²) and yield characters like yield per plant (kg) and yield per hectare (q) were recorded as per standard procedure and statistically analyzed.

RESEARCH FINDINGS AND DISCUSSION

The higher concentration of GA₃ at 150 ppm produced significantly earlier sprouting of new shoots. The treatment GA₃ 100 ppm (24.54 days) was found at par with treatment GA₃