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Research Paper

Studies on effect of plant growth regulator on physical characters of sapota

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ABSTRACT

The National Agriculture Technology project (RNPS-9) mainly emphasized on developing suitable Agri-horti and Agro- forestry system in Kharif sorghum area decreasing region for overall sustainablity of production system. In the experiment custard apple orchards of three different age group (1-2 yrs, 5-7 yrs and 10 yrs and above) were selected for growing intercrops like cowpea, sorghum, horse gram, stylo hamata and cenchrus ciliars along with the application of recommended dose of fertilizer and farm yard manure, which maintained the nutritional requirement of custard apple orchard. The intercrops raised suppressed the weed growth, added more bio-mass, maintained soil fertility and gave surplus income to growers.

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Key words : Generation mean, Gene action, Okra

Sapota commonly called chiku in India, is a native of tropical America. Sapota is a good source of diagestible sugar which ranges from 12 to 18 per cent, composition of ripe sapota per 100g of edible portion is moisture 73.7g, carbohydrates 21.4 g, protein 0.7g, fat 1.1 g, calcium 28.0 mg, and phophorus 27.0 mg (Shanmugavelu and Srinivasan, 1973)

Area of this fruit is on ascendancy due to high production per unit area, liking to Indian palate, continuous fruiting throughout the year in humid climate and hardy nature of crop against biotic and abiotic stresses. Therefore, it has become most popular fruit crop of coastal region of the states of Gujrat, Maharashtra Karnataka, Tamil Nadu, Andhara Pradesh and Kerala.

The peak harversting periods in West Coast and Northern India are March-April and August-September, while in south, more fruits ripen in February, June and September-October (Sulladhmath and Reddy, 1985.) The crop from July-August flowering matures in March –April where as crop of October-December flowering matures in the month of July-August when the price is comparatively remunerative.

Thus, the control of flowing is one of the most important practical aspects of chiku cultivation. Induction of flowering through chemical means is one way of tackling the problem of excessive vegetative growth and erratic flowering habit (khader and Rao, 1983). Because of the diverse effects, it is possible to use certain growth regulating chemicals at particular stage of fruit growth and development to have its maximum effect.

Sapota produces large number of flowers through out the year in different flushes. But flowers and fruits tend to drop in different stages of development right from its setting to maturity. However, fruit drop at later stages of development drastically reduces the yield. In recent years considerable attention has been given to increase fruit set and to check fruit drop of many fruit crops with the help of plant growth regulators.

Different groups of plant growth regulators like auxins, gibberellins and growth retardants at various concentrations have been reported to influence flowering, fruit set, retention development and quality characters of several fruit crops (Das and Mahapatra, 1976). Among the various causes of fruit drop, the simplest one is decline in the level of endogenous auxins (Addicot and Lynch, 1995) Among the synthetic anxins tested in this regards, the NAA has been found to be the most effective in chiku (Ravoof, 1963 and Das and Mahapatra, 1976).

Fruit quality of rainy (*Hast Bahar*) season (August-September), chiku is some what poor as aginst *Mrig Bahar* crop (Sulladhmath and Reddy, 1985). Rathod (1977) in his investigations used NAA (25-100 ppm) on 'Kalipatti' sapota and observed that all the concentrations of NAA helped to increase the reducing, non-reducing and total sugares of the fruit, while T.S.S were increased at higher (75 and 100 ppm) concentrations only.