



## Research Paper

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# Effect of plant growth regulators on flowering and fruit growth of guava (*Psidium guajava* L.) cv. ALLAHABAD SAFEDA

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**ABSTRACT :** The study was conducted in the guava orchard of Assam Agricultural University, Jorhat during 2009. Six years old plants of uniform size and vigour planted at 6 x 6 m. were selected for the study. Experiment was laid out under Randomized Block Design with three replications and 11 treatments, to know the effect of plant growth regulators on flowering and yield of guava. The maximum number of flowers (16) per shoot, highest fruit set per cent (93.13) and maximum numbers of fruit per shoot at harvest (6.2) were found with 1000 ppm CCC. The maximum fruit length (9.8 cm), fruit girth (10.23 cm), fruit weight (182g) and volume (178.3 cc), minimum fruit drop (38.8%) and yield (37.1 kg/plant) were recorded under 50 ppm GA<sub>3</sub>.

**KEY WORDS :** Guava, PGRs, Yield parameters, Growth of guava

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Guava (*Psidium guajava* L.) is one of the most important and extensively cultivated fruit crop of India. It is a good source of vitamin-C and pectin and widely used for making of jelly. The three times flowering seasons have been observed in North Indian conditions while two flowering seasons have been reported in the climatic condition of Assam. Flowering regulators in the ovary, the ovary enlarge and fruit development is initiated. However, good fruit set is prevented by adverse weather which hinders pollen production, pollination and fertilization and also low level of auxin. The auxin from the pollen grain and pollen tube might be responsible for the early stage of fruit growth. However, small amount of pollen grains necessary to pollinate a flower may not carry enough auxin to account for early fruit development. The growing pollen tube may secrete auxin which helps in fruit growth (Muir, 1942).

The percentage of flowering and fruiting, poor fruit retention, poor yield and quality fruits are of major concern of the fruit growers. So, the present investigation was undertaken to find out response of plant growth regulators on flowering, fruit growth and quality of guava.

## RESEARCH METHODS

The study was conducted in the orchard of Assam Agricultural University, Jorhat during 2009. Six years old plants of uniform size and vigour planted at 6 x 6 m. were selected for the studies. The experiment was laid out under Randomized Block Design with three replications and 11 treatments. The treatments comprising of 2,4-D 10 and 20 ppm, NAA 50 and 100 ppm, GA<sub>3</sub> 50 and 100 ppm, ethep 50 and 100ppm and CCC 500 and 1000 ppm were applied as foliar sprays. All the treatments were sprayed before flowering in the March. The observations on total number of flower per shoot, days required for maturity and ripening, percentage of fruit set, number of fruit per shoot, fruit length and girth, percentage of fruit drop, weight and volume of fruit, TSS, total sugar, ascorbic acid, titrable acidity and yield were taken according to the standard procedure.

## RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation are summarized below :