



Effect of plant growth regulators and nutrients on quality of Acid lime (*Citrus aurantifolia* Swingle)

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ABSTRACT

Effect of foliar sprays of plant growth regulators viz., GA₃ and NAA and nutrients like urea and KNO₃ singly or in combination on qualitative parameters of hasta bahar acid lime fruits was studied during 2002-2003. Experiment was carried out adopting Randomized block design with nine treatments compared to control (no spray). Two foliar sprays at monthly interval were carried out and observations were recorded for fruit growth in terms of average weight and volume of fruit and qualitative parameters. Results revealed that two foliar spray of KNO₃ 2% and GA₃ 100 ppm increased fruit weight, fruit volume and improved fruit quality. Maximum juice percentage, TSS and ascorbic acid content was obtained whereas acidity and peel percentage was reduced resulting into better quality fruit.

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Key words : KNO₃, GA₃, Foliar spray, Quality, Acid lime, Plant growth regulators, Nutrient

Acid lime (*Citrus aurantifolia* Swingle.) also known as kagzi lime belongs to the acid group of genus *Citrus* and is one of the important fruit crop of citrus industry. Fruits of acid lime possess great medicinal and nutritional value. It is a rich source of vitamin "C". Fruits being acidic in nature, they are largely used for garnishing and flavoring several vegetarian and non-vegetarian dishes. Besides its value-added products like pickle, juice, squash etc., lime peel oil, peel powder are also in great demand in soap and cosmetic industry.

Fruits of acid lime flowers throughout the year in three distinct seasons known as "bahar" viz., ambia, mrig and hasta bahar. Due to the continuous flowering and heavy crop load on trees, the size of the fruits remains usually very small. Qualitative characters like juice per cent, ascorbic acid, acidity etc. also get affected resulting into harvest of poor quality and unmarketable fruits. Foliar sprays of plant growth regulators and nutrients not only improves the size but also enhance qualitative parameters of fruits. Potassium is known for development of fruit, movement of sugars and indirectly photosynthesis. Since potassium enhances internal fruit quality while gibberellic acid enhances fruit set, promotes cell elongation and growth of fruit, the present investigation was carried out to study the effect of plant growth regulators and nutrients on quality of acid lime fruits.

MATERIALS AND METHODS

The study was undertaken in the private orchard of acid lime at Babhulgaon dist. Akola during 2002-03, on eight year old trees. The experiment was laid out in Randomized Block design in three replications and ten treatments. Each treatment was carried out on two trees for each replication. Spraying of nutrients viz., KNO₃ 2%, urea 2% and growth regulators viz., GA₃ 100 ppm and NAA 300 ppm and their combinations was compared with control (no spray). Two sprayings were followed at the interval on one month. Physico-chemical observations were recorded after harvesting in respect of fruit weight, fruit volume, juice percentage, total soluble solids, acidity percentage and ascorbic acid content. Data were analyzed adopting statistical measures analysis as given by Gomez and Gomez (1984).

RESULTS AND DISCUSSION

The results obtained in the present investigation are discussed below under suitable headings.

Effect on weight of fruit:

It is apparent from Table 1, that average weight of acid lime fruits was significantly influenced by foliar application of growth regulators and nutrients. Significantly maximum average weight was observed with