



Research Paper

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Effect of foliar application of plant growth regulators and micronutrients on yield and quality of acid lime cv. KAGZI (*Citrus aurantifolia* Swingle)

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ABSTRACT : An experiment on effect of foliar application of plant growth regulators and micronutrients on yield and quality of acid lime cv. Kagzi (*Citrus aurantifolia*) was carried out during spring season of the year 2011 at Horticultural research farm, Department of Horticulture, B.A. College of Agriculture Anand. The experiment was laid out in Completely Randomized Block Design with thirteen treatment combinations and replicated thrice. The results revealed that treatment T₄ GA₃ 50 mg/l significantly increase yield attributing characters like fruit volume (47.90 cc), fruit diameter (4.54 cm), fruit weight (47.40 g) and fruit yield per tree (46.38 kg) In case of number of fruits per tree treatment NAA 200 mg/l significantly increased the number of fruits per tree (1020.33). Quality attributing characters like total soluble solid (9.58 °Brix.) and ascorbic acid content (30.41 mg/100g pulp) were significantly increased while number of seeds per fruit (6.13) and acidity (7.05 %) were significantly decreased under treatment GA₃ 50 mg/l.

KEY WORDS : PGR's, Micronutrients, Yield, Quality, Acid lime

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Citrus are the most important fruits of the world. Citrus are cultivated widely in the tropical and sub-tropical regions. It ranks third among the sub-tropical fruits of the world with different varieties. Acid lime (*Citrus aurantifolia* Swingle) is the member of family Rutaceae. In Gujarat, area of acid lime is about 39,189 ha with annual production of 4.09 MT. The leading districts are Mehsana, Anand, Vadodara and Bhavnagar (Anonymous, 2011). There is difficulty with fruit set because of incomplete pollination, plant growth regulators may be effectively used to increase fruit set. Plant growth regulators applied near the terminal buds of trees may increase the rate of growth by stimulating more or less constant growth during the season. Plant growth regulators are used mainly to delay and reduce unwanted fruit abscission (fruit drop), to delay the senescence and to promote abscission of excess fruit (thinning to increase the size of the remaining fruit) and to inhibit the growth of suckers on the trunk. The plant growth regulator 2, 4-D play a vital role in checking pre harvest fruit drop and ultimately increasing

yield without adversely affecting the fruit quality. GA₃ increase the fruit height, fruit diameter, fruit weight ultimately the yield was increased (Shinde *et al.*, 2008). NAA checking the fruit drop and increasing the fruit retention and also increasing the fruit weight and TSS of the fruits.

Foliar feeding is one of the ways towards this goal, because there by nutrients are applied directly to the site of their metabolism and are not subjected to losses as in case of soil application. Zinc increase the flowering, fruit set, fruit size and control the fruit drop and ultimately increase the yield (Awasthi *et al.*, 1975). Iron increases the manufacture of more carbohydrate in the leaves which increase in flowering, fruit set, fruit size, control the fruit drop and ultimately it increases the yield of plants (Rana and Sharma, 1979).

Under the circumstance, as mention above, plant growth regulators and micronutrients have given encouraging result in case of citrus fruit crops.