

Research Paper

ADVANCE RESEARCH JOURNAL OF  
**C R P**  
**IMPROVEMENT**  
Volume 3 | Issue 1 | June, 2012 : 5-7  
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## Effect of production and plant growth regulators on quality and economics of hybrid okra [*Abelmoschus esculentus* (L.) Moench]

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**ABSTRACT :** An experiment was conducted to evaluate the effect of plant growth regulators on quality and economics of hybrid okra cv. MAHYCO HYBRID-10 at Bihar Agricultural College, Sabour during the *Kharif* season, 2006. The crop was foliar sprayed twice, first at 3-4 leaf stage and second after one month of the first spray with 2, 4-D (5, 10, 15 and 20 ppm), NAA (25, 50, 75 and 100 ppm) and CCC (400, 600, 800 and 1000 ppm). The maximum dry weight (14.76%) and TSS (4.14 Brix) of fruits were obtained with 2, 4-D at 5 ppm. The highest protein (1.98%) and ascorbic acid (28.84 mg/100g) were recorded with the application of CCC at 1000 ppm and 600 ppm, respectively. Plant sprayed with 800 ppm CCC fetched the maximum return of Rs. 54951=00 per hectare whereas, the highest benefit cost ratio of 1:2.67 was obtained with application of NAA at 75 ppm. Therefore, spraying of cycocel at 800 ppm or NAA 75 ppm in okra crop is beneficial for getting higher quality and net return.

**Key Words :** Okra, Plant growth regulators, Protein, NAA, 2, 4-D and CCC

**How to cite this paper :** Mandal, P.N., Singh, K.P., Singh, V.K. and Roy, R.K. (2012). Effect of production and plant growth regulators on quality and economics of hybrid okra [*Abelmoschus esculentus* (L.) Moench], *Adv. Res. J. Crop Improv.*, **3** (1) : 5-7.

**Paper History :** Received : 29.11.2011; Revised : 01.03.2012; Accepted : 02.04.2012

Okra a native of Ethiopia is one of the most important warm season as well as rainy season fruit vegetable grown in tropical and sub-tropical areas. It is grown mainly for its tender non-fibrous edible fruit extensively throughout India. It is very popular among the farmers because of easy in growing and has wider adaptability range. It has good nutritional value. The green tender fruits are rich source of iodine content and vitamins. It also contains protein, calcium, iron, magnesium, ascorbic acid and other minerals.

Growth substances enabled man to control the plant growth and has become the greatest tool in the hands of horticulturists for increasing yield and better quality of vegetables. The use of plant growth regulators has gained a separate field of study besides varietal, manurial and cultural methods of vegetables improvement. Among the various methods, spraying of the whole plant at different stages with growth regulators has been found to be effective and useful because this method can regulate the growth and development of plants from their active phase. The process of absorption is direct to the foliage and inflorescence. The information's on okra as influenced by growth regulators in eastern zone of Bihar is meagre. Hence, the present investigation was

undertaken to study the effect of plant growth regulators on hybrid okra.

### RESEARCH PROCEDURE

The experiment was conducted at Bihar Agricultural College, Sabour during July, 2006. The experiment was laid out in R.B.D. with three replications having thirteen treatments. The treatments comprised of the combination of four concentrations of each plant growth regulators. The plant growth regulators used were 2, 4-D (5, 10, 15 and 20 ppm), NAA (25, 50, 75 and 100 ppm), CCC (400, 600, 800 and 1000 ppm). Seeds were sown at the spacing of 60 cm x 45 cm in a plot of 3.00 m x 2.70m. The hybrid used was Mahyco hybrid-10. The crop was fertilized with 12 ton FYM along with NPK @ 120:60:60kg/ha. The plant growth regulators solutions were used as whole plant spray. The first spray was done at 3-4 leaf stage and second spraying was done after one month of first spray.

### RESEARCH ANALYSIS AND REASONING

The plant growth regulators significantly increased the