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Economics of sponge gourd as influenced by plant growth regulators

H.B. PATEL, D.K. KAKADE, RUKAM S. TOMAR, P.G., MEMANE, N.A., DESHMUKH, SEEMA J. SHARMA AND C.D. PATEL

See end of the article for authors' affiliations

Correspondence to :
D.K. KAKADE
National Research Centre for Groundnut (ICAR), JUNAGADH (GUJARAT) INDIA

ABSTRACT

During *kharif* season in 2004 two sprays of plant growth regulators were done at 2nd and 4th leaf stages. Maximum fruit yield (23.90 t/ha) was observed in Ethrel 300 ppm. The highest net return (Rs. 94437.50/ha) and CBR (1: 4.77) were observed also in Ethrel 300 ppm among all the treatments. 2,4-D treated plants at 6 ppm gave the net return of Rs. 50444.70/ha and CBR 1: 3.04.

Key words : Growth regulators, Etheral, 2,4-D, Sponge gourd, *Suffa cylindrica*, Economics

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INTRODUCTION

The sponge gourd [*Luffa cylindrica* (Linn.) M. Roem.] is one of the important Cucurbitaceous crops, grown extensively throughout in India. The tender fruits are used as vegetable or as cooked vegetables. Besides its use as vegetable, this gourd is utilized for various purposes e.g. ornamental purposes. good pot holders, table mats, bathroom mats and slipper soles have been made out from the fibers. The sponge gourd possess monoecious forms and also possess a great diversity in the pistillate and staminate flowering ratio.In monoecious forms the production of staminate flower is far in excess of pistillate counter part. Since the yield of the crop depends upon the production of pistillate flowers, it is worthwhile to study the possibility of bringing about a shift in favour of pistillate flowers. Plant growth regulators have profound influence on fruit production in cucurbits. It can modify growth and sex expression, improve fruit set and ultimately increase the yield in number of cucurbits with the low cost. A relationship between growth substances and sex expression probably exists in these plants. Sex modification shift towards femaleness by exogenous application of auxins, gibberellins, growth retardants and other plant growth regulators. It is necessary to consider that which of the growth regulators being the economic for getiing the optimum production. So for that it is necessary to consider the characters like net profit, and cost benefit ration (CBR).

METHODOLOGY

The investigation was undertaken during *kharif* season of 2004 on sponge gourd cv. Pusa Chikni at the Instructional farm of Department of Agronomy, College of Agriculture, Junagadh Agricultural University, Junagadh (Gujarat). Three seeds of 'Pusa Chikni' were dibbled at each hill at a distance of 3.0 m x 0.5 m between row and plant, respectively. The experiment was incorporated in Randomized Block Design with three replications and seven treatments *viz.*, concentrations each of Ethrel (200, 300 and 400 ppm), 2, 4-D (4, 6 and 8 ppm) and control (*i.e.* water spray). Two sprays of plant growth regulators were done at 2nd and 4th leaf stages. Eight vines were selected from each net plot to record the observations with regard to yield character (fruit yield in tone per hectare), gross income (Rs./ha), total cost of cultivation (Rs./ha), net return (Rs./ha) and cost benefit ratio (CBR).

RESULTS AND DISCUSSION

The data pertaining to fruit yield (t/ha) were affected by various levels of Ethrel, and 2, 4-D as presented in Table 1. It is observed from the data that all the concentrations of Ethrel and 2, 4-D were found significantly superior in recording higher fruit yield than control. The maximum fruit yield was recorded in Ethrel 300 ppm (23.9 t/ha) followed by Ethrel 400 ppm (21.01 t/ha). An increase in fruit yield