
RESEARCH PAPER

Effect of humic acid with bio-regulators on the yield of greengram [*Vigna radiata* (L.) wikzek]

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Continuous adaption of cereal-based cropping system has necessitated other alternatives such as pulses, which constitute a major part in agricultural economy of India. An experiment was conducted at Millet Breeding Station, TNAU, Coimbatore during *Kharif* (July, 2006 - October, 2006) in CO 6 green gram with nine different treatments. The yield and yield components were significantly increased by the application of chemicals and bioregulators. Various yield components such as days to 50 per cent flowering, days to maturity, number of clusters per plant, number of flowers per plant, number of pods per cluster, number of pods per plant, fertility co-efficient, number of seeds per pod, pod weight per plant, seed weight per plant, seed - pod ratio, pod length, hundred seed weight, grain yield per plot, grain yield per hectare and harvest index were favorably enhanced by the foliar spray of 0.1 per cent humic acid with 0.1 ppm brassinosteroid treatment.

Key words : Bio regulators, Greengram, Yield

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INTRODUCTION

Pulses occupy a strategic position in intensive as well as subsistence agriculture, as they are excellent source of dietary protein for millions of people, nutritious feed for livestock and a mini nitrogen plant having profound ameliorative effect on the soil. Green gram is extensively grown in all types of soil under varying climatic conditions. Greengram is considered as the most whole some among pulses, free from heaviness and flatulence. The green pods are used as vegetable and haulms are used as fodder. On an average, the biomass has 1.5 per cent N on fresh weight basis, serving as a good source of animal feed. Flower and pod shedding is a common problem in greengram. There is also a possibility to overcome these constraints by foliar application of bio-regulators at the pre-flowering stage, which is one of the latest trends in agriculture. These bioregulators includes humic acid (HA), naphthalene acetic acid (NAA), benzyl adenine (BA), salicylic acid (SA), brassinosteroid (BR) etc. These plant

growth regulators (PGRs) in general, help to increase the number of flowers on the plant when applied at the time of flowering. The flower and pod drop may be reduced to some extent by spraying various growth regulators on foliage (Ramesh and Thirumuguran, 2001). The foliar application of PGRs and urea significantly increased seed yield per plant (Patil *et al.*, 2005). The HA increased the yield of plants more especially, with insufficient nutrient supply than with optimum nutrient supply (Pagel, 1960). The NAA is one of the important synthetic, stable and also widely used form of auxins. Auxins had been very effective in promoting growth and development in pulse crops. Upadhyay (1994) reported that foliar spray of NAA at bud initiation and pod formation stage of chick pea increased plant height, number of branches, number of flower bud, number of flowers and yield. The main role of NAA rests with the efficient transport of sugars from the photosynthesizing parts of the plant (source) to the developing grains (sinks) and also facilitating nitrogen accumulation that probably resulted in higher total dry matter production (Kalita *et al.*, 1989). Foliar spray of 25 ppm NAA