Study on Drip Irrigation in Conjuction with Integrated Nitrogen Management on Growth, Yield and Nutrient Uptake in Eggplant

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Field experiment was carried out at the College Farm, Gujarat Agricultural University, Anand on loamy sand in *rabi* seasons of the year 1989-90 and 1990-91 to study the efficiency of drip irrigation in conjuction with integrated nitrogen management in brinjal. Thirty six treatments comprising of three levels of irrigation viz. drip irrigation at 80% and 60% of CPE and surface flooding at 1.2 IW/CPE ratio as main plot treatment and combinations of three levels of nitrogen (0, 50 and 100 kg/ha), two levels of dry azolla (0 and 1.43 t/ha equivalent to 50 kg of N/ha) and two levels of inoculation (with and without *Azotobacter* treatments) as a sub plot treatment, were employed in split plot design with four replications. The brinjal Cv. Doli-5 was selected for experimental purpose. The results showed that scheduling irrigation through drip at 80% CPE remakably increased plant height, LAI, dry matter/plant, flower/ plant, fruits/ plant, stalk yield and total fruit yield as compared to surface flooding irrigation during both the years of study protein content in fruits and the NPK uptake also found higher in drip irrigation.

Application of 100 kg N/ha significantly increased plant height, LAI dry matter/plant, flowers/plant, fruits/plant, size of fruit and total fruit yield over 50 kg N and no nitrogen. Similar trend also noticed with dry azolla (equivalent to 50 kg N/ha) treatment as well as in case of *Azotobacter* treatment. The interactive effect of irrigation x Azolla and Azolla x *Azotobacter* were found significant in respect of total fruit yield and nutrient uptake. The treatment combination involving drip irrigation at 80% CPE application of nitrogen @ 100 kg/ha, dry azolla 1.43 t/ha and Azotobacter treatment recorded the highest total fruit yield as well as net as net profit of Rs. 17944/ ha.

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