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Effect of different concentration of ethrel on growth, fruiting behavior and yield of cucumber (*Cucumis sativus* L.) under green house conditions

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ABSTRACT : The present investigation was carried out to study the effect of ethrel concentrations on growth, fruiting behavior and yield of cucumber. Five ethrel levels *viz.*, 0, 200, 300, 400 and 600 ppm were tried on two genotypes *viz.*, Japanese Green Long and Green Express. All the tested concentrations of ethrel reduced plant height and resulted in dwarfness. All the concentrations of ethrel significantly increased the number of branches per plant and number of nodes on main axis as compared to control. The ethrel concentrations were also found to reduce the number of days to first fruit set and fruit ripening. 300 ppm concentration was found suitable for early fruit formation and fruit ripening in both genotypes under green house conditions. With the increase in level of ethrel, there was a corresponding reduction in duration of fruiting while non-significant changes were observed due to lower concentration (200 ppm) in greenhouse condition. Under green house condition, 200-400 ppm ethrel increased number of fruits and ultimately fruit yield per plant. Both the varieties performed well and showed good response to ethrel treatment at concentration of 300 ppm under green house for increasing various growth and yield parameters.

KEY WORDS : Cucumber, Ethrel, Greenhouse conditions

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Cucumber (*Cucumis sativus* L.) is one of the most prized vegetable because of its varied usefulness, excellent flavour, texture and medicinal value. It is a summer vegetable grown generally under open field conditions. But it is also grown as a forcing crop under green house conditions in the off season owing to its increasing demand for varied purposes.

Application or ethrel (2- chloroethyl phosphonic acid) for inducing female flowers in cucurbits is very common. Its use in modifying fruit size, other morphological traits as well as yield has also been reported by various workers like, Arora *et al.* (1982). However, research regarding response of cucumber plants under green house conditions is not enough and hence, present investigation was carried out to study effect of different concentration of ethrel on growth, yield, fruiting behaviour and seed characteristics under green house in temperate conditions of Kashmir valley and to ascertain the optimum level of ethrel under such conditions.

RESEARCH METHODS

The present investigation was carried out during *Kharif* 2008 and 2009 under green house conditions at Vegetable Experimental Field of Division of Vegetable Science, SKUAST-Kashmir, Shalimar to study the effect of ethrel concentrations on growth, fruiting behavior and yield of cucumber. Five ethrel levels *viz.*, 0, 200, 300, 400 and 600 ppm were tried on two genotypes *viz.*, Japanese Green Long and Green Express. The experiment was laid out in RBD with three replications. The ethrel sprays were made at two stages one at two true leaf stage and another at four leaf stage. Recommended package of practices was followed to raise a healthy crop. The observations were recorded plant height (cm), number of primary branches per vine, days to first fruit set, days to fruit ripening, duration of fruiting, fruit length (cm), fruit diameter