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Research Paper

Effect of nitrogen levels and gibberellic acid on growth and yield of gerbera under polyhouse condition

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ABSTRACT

The investigation with the intention to study the effect of nitrogen levels and gibberellic acid on growth and yield of gerbera under polyhouse conditions was conducted at Floriculture unit, University Department of Horticulture, Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.) during June to November 2005. The results revealed that the vegetative growth in respect of height of plant, number of leaves per plant, number of primary roots per plant were increased with increasing levels of nitrogen and gibberellic acid. Maximum growth was obtained with application of 30g nitrogen per square meter per month and 100ppm gibberellic acid at monthly interval.

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Key words : Gerbera, Nitrogen, Gibberellic acid, Yield, Quality

Gerbera (*Gerbera jamesonii* H.Bolus) is popularly known as 'Transval Daisy'. It is one of the natures beautiful creation having excellent flowers of exquisite shape, size and attractive colour. There is a great demand for gerbera throughout the year in big cities and also have export value. Therefore, gerbera growing under polyhouse could be helpful to meet city requirements adequately. Gerbera being a perennial plant, require plenty of oraganic matter and adequate nutrient *i.e.* nitrogen, phosphorus, and potassium for profuse growth and good flower quality. The number of marketable flowers of gerbera increased as both N and K rates increased up to 110kg/ha (Dufault *et al*., 1990).Use of PGR are being increased to manipulate the growth, flowering and yield of ornamental plants (Saini and Arora, 1974). Spraying of GA_3 at 50, 100, and 150ppm concentrations increased the number of leaves, suckers, showed early flowering and produced highest number of flowers per plot (Nair *et al*., 2002)

Thus, keeping in view the potentialities of nutrition and gibberellic acid in gerbera flower production, the experiment was carried out with the objective, to study the effect of different levels of nitrogen and gibberellic acid on growth, flowering, and yield of flowers in gerbera under polyhouse conditions.

MATERIALS AND METHODS

A pot experiment was carried out at Floriculture unit, University Department of Horticulture, Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.) during June to November 2005. Experiment was laid out in semicontrol modified Quonset type polyhouse. Green shade net (50%) was provided inside polyhouse. Sterilised cocopeat media was filled in the pot of equal size. Three months hardened tissue culture plants of variety Sangria were planted in pot of 30cm x 30cm size. The experiment which was embedded in a FRBD with three replications and sixteen treatment combinations comprising of four levels of nitrogen (0, 10, 20 and 30g /m^2 /month) and gibberellic acid (0, 50,100,150ppm at monthly interval).

Nitrogen was applied as per the treatments however, phosphorus, and potassium were applied @ 12.5g and 15g /m^2/ month, respectively at 15 days interval. Straight fertilizers *viz.*, urea, SSP and MOP were applied. Proper irrigation was done throughout the experiment as and when required. Whenever inside temperature of polyhouse was increased, fan and pad system as well as foggers were operated to maintain the optimum temperature and humidity. The incidence of aphids, white flies were controlled by spraying with diamethoate @1.5ml/l. Similarly collar rot were controlled by alternate drenching of redomil @ 2g/l. The observations on growth, flowering