

## Effect of bioenzymes on growth and yield of rose (*Rosa indica* L.) cv. GLADIATOR

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### ABSTRACT

An experiment was conducted to study the effect of bioenzymes on growth and yield of rose at Department of Horticulture, Marathwada Agricultural University, Parbhani during the year 2007-08. The treatment T<sub>2</sub> (Synzyme 3 ml/L) was found to produce maximum height of plant (132.72 cm), more number of shoots per plant (17.33), highest length of flowering shoot (98.60 cm), maximum diameter of flowering shoot (7.58 mm), more number of leaves per flowering shoot (20.12), maximum leaf area (1322.66 cm<sup>2</sup>), minimum number of blind shoots per plant (0.80), maximum spread of plant (100.31 cm<sup>2</sup>) and highest yield *i.e.* maximum number of flowers per plant (26.26) followed by Bioenzyme (3 ml/L) while lowest performance was observed in T<sub>7</sub> (control).

**Key words :** Bioenzymes, Growth, Yield, Rose

**R**ose (*Rosa indica* L.) belongs to family Rosaceae. The position of rose is such that no garden or flower market is complete without its presence. Rose is one of the nature's beautiful creations and is universally acclaimed as king as well as queen of flowers. No other flower is a better symbol of love, adoration, innocence and other virtues than the rose and not only in our times but so it has been for thousand of years.

Roses are of various types *viz.*, Hybrid-Tea-rose, Floribunda, Miniature, Hybrid perpetual, Grandiflora, Polyantha, Climbers and Ramblers, etc but Hybrid-Tea-roses have commercial value. In Hybrid-Tea-roses cultivar gladiator has great demand and scope because of attractive colour and big attractive size and shape. The flowers are having demand for cut flowers, having good vase life and long pedicel or stem length.

Now days, foliar application of bioenzymes becoming an extremely important tool in agriculture especially in floriculture for manipulating the growth and flowering in flower crops. Bioenzymes are the new commercial products obtained from *Asephyllum modasum*, a sea weed algae known to be rich in cytokinin and auxin precursor enzymes and hydrolysed proteins. Bioenzymes are used to substitute for growth regulators and fertilizers of which prices are increasing day by day. Bioenzymes play important role in vegetative growth and flowering of flower crops like aster, marigold. With this view point, the present study entitled "Effect of bioenzymes on growth and yield of rose (*Rosa indica* L.) cv. GLADIATOR" was carried out.

### MATERIALS AND METHODS

The present investigation entitled "Effect of

bioenzymes on growth and yield of rose (*Rosa indica* L.) cv. GLADIATOR" was conducted at Department of Horticulture, Marathwada Agricultural University, Parbhani (M.S.). A field experiment was laid out during 2007-08 in Randomized Block Design with seven treatments *viz.*, T<sub>1</sub> (Synzyme 2 ml/L), T<sub>2</sub> (Synzyme 3 ml/L), T<sub>3</sub> (Zymegold 2 ml/L), T<sub>4</sub> (Zymegold 3 ml/L), T<sub>5</sub> (Biozyme 2 ml/L), T<sub>6</sub> (Biozyme 3 ml/L) and T<sub>7</sub> (control) water spray and three replications.

The spraying of each treatment was carried out first at 30 days after pruning and second at 45 days after pruning. The observations on various characters were recorded and subjected to statistical analysis.

### RESULTS AND DISCUSSION

Analysis of variance was carried out for all characters as indicated in Table 1 revealed significant differences among all the treatments.

#### Height of plant :

The treatment T<sub>2</sub> (Synzyme 3 ml/L) produced highest plant height which was at par with treatment T<sub>6</sub> (Biozyme 3 ml/L) and T<sub>4</sub> (Zymegold 3 ml/L) and significantly superior over rest of the treatments, while treatment T<sub>7</sub> (control) showed minimum plant height.

Prashanth *et al.* (2006) reported that GA<sub>3</sub> at 200 ppm increased plant height in floribunda roses. Borkar (2007) found that bioenzyme, Microzyme 3 ml/L increased significantly plant height in marigold cv. BHAWANI.

#### Number of shoots per plant :

Treatment T<sub>2</sub> (Synzyme 3 ml/L) was found with maximum number of shoots and it was significantly