

## Research Paper

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## Comparative performance of some rose varieties under open and protected environment

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**Abstract :** The investigation was carried out during 2006-2007 to study the comparative performance of rose varieties *viz.* Gladiator, Minuparle and Montezuma under four growing environments *viz.*, openfield, 50 per cent and 75 per cent shade net and polyhouse condition. Montezuma performed very well with respect to several growth characters which recorded maximum plant height (60.94 cm), highest number of second order laterals (6.69) and maximum plant spread N-S (53.72 cm) and E-W (35.60cm) direction. Gladiator performed better with respect to various floral characters like stem length of flower (30.61 cm), largest flower bud (3.54 cm) and maximum bud diameter (3.52 cm) and number of petals per plant (44.37). It also took minimum time for bud appearance after pruning and maximum flower diameter (7.26 cm). Hence, it was judged as the most ideal variety for using as cut flower. On the other hand, month wise flower production as well as total yield of flowers (Nos. per plant) after pruning was highest in Montezuma followed by Minuparle. Among various growing environments performance of plants under polyhouse was most satisfactory which could improve growth, yield and quality of roses. Floral characters such as flower diameter and number of petals per flower in addition to month wise and total yield of flowers (Nos. per Plant) under polyhouse condition were found to be better as compared to other growing environments. Performance of plants under 50 per cent shades was better than open condition with respect to all the quality parameters of flowers. Interaction of variety with growing environment was found significant for some of the floral characters at certain stage of plant growth. Montezuma under poly house had a higher yield of flowers; whereas Gladiator under the same growing environment produced better quality flowers, most suitable for cut flower purpose.

**Key words :** Growth and floral characters, Photosynthesis, Growing environment, Protected environment

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Roses universally accepted as the queen of the flowers for its exquisite shape, different sizes, are witching colours and most delightful fragrance with varied uses. However, information available regarding their relative performance of rose varieties under the agro climatic situations of Orissa is meager. Besides the quality of the roses, which are produced in a limited scale in the state is also found inferior since these are produced in a under open condition. Hence, the present investigation was carried out to generate information on these aspects which would be of immense help to the rose growers of Orissa.

### RESEARCH METHODS

Three rose varieties *viz.*, Gladiator, Minuparle, and Montezuma commercially grown in Orissa were selected for the experiment. Five months old healthy budded rose

plants were planted in 12<sup>th</sup> size earthen pots on 20<sup>th</sup> April, 2006 during afternoon hours. After planting, the pots were kept under semi shade condition with initial irrigation by rose cane. After one week, these were transferred to four growing environments *viz.*, open condition, 50 and 75 per cent shade nets and low cost naturally ventilated polyhouse for evaluation. The trial was conducted in form of a factorial experiment following completely randomized design with three replications. Relative humidity and light intensity under different growing environments were measured at weekly interval during the experimental period from May, 2006 to January 2007. Different cultural management practices followed for all the plants under different growing environments. Farm yard manure and vermicompost, a mixture of 5g urea, 15g superphosphate and 5g muriate of potash were applied to each pot as