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Inducing dwarfing in *Bougainvillea* for urban and peri-urban landscaping

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Bougainvillea (*Bougainvillea spp.*), a member of family Nyctaginaceae is becoming favourite plant for landscaping of urban and peri urban areas of tropical and subtropical regions because of its hardy nature as well as minimum requirement of water and care. Due to multi-storeyed buildings people are bound to grow these plants either in pots or in hanging baskets in their balconies or corridors, but, due to its vigorous growth habit, it needs a lot of labor-intensive pruning by skilled person. Therefore, there is a need to look for an alternative; so induction of dwarfing is a best alternative. The bougainvillea can be made dwarf either by breeding techniques, by making bonsai or by using plant growth retardants. Subsequently, the need of frequent pruning and labour costs will decrease. Since, breeding and bonsai making requires special skill and knowledge, therefore, it is not possible for everyone to use these techniques for enjoying the beauty of bougainvilleas. Therefore, the present investigations were carried out at the Division of Floriculture and Landscaping, IARI, New Delhi using growth retardants mainly; paclobutrazol, daminozide and maleic hydrazide to induce dwarfing in bougainvillea cv. Shubhra. The experiment was laid out in completely Randomized Block Design with 11 treatments and four replications. The rooted cuttings of bougainvillea were planted on 7th July 2012 in earthen pot of 25 cm diameter containing potting media consisting of sand: soil: farm yard manure (FYM) in a ratio of 1:2:1. The plants were pruned to a uniform height of 25+5 cm, on 3rd September 2012. The growth regulators were applied in the form of foliar spray or drench and data was recorded at 2, 6, 10 and 14 weeks. After 14 weeks, it was observed that spraying of plants with 2500 ppm Maleic hydrazide resulted in average minimum plant height (22.85cm), percent increase in plant height over initial height (10.80%), plant spread (24.23 cm), shoot length (19.31 cm), internode distance (1.59 cm), growth index (23.56), no structural branches and no flowering. However, drench application of paclobutrazol @20 ppm resulted in 31.55 cm tall plants with 37.60 percent increase in plant height over initial height, maximum number of branches (22.80), maximum shoot diameter (11.94cm), maximum flower index (4.50) which was statistically at par with those plants drenched with 30 ppm paclobutrazol. From the present studies, it is concluded that the application of paclobutrazol @ 20 or 30 ppm is best for inducing dwarfism as compared to maleic hydrazide, because paclobutrazol restricted the vegetative growth but promoted flowering; whereas maleic hydrazide inhibited both vegetative growth and flowering.

Biography

Ritu Jain has completed her PhD degree in the year 2005 from Dr. Y. S. Parmar University of Horticulture and Landscaping, Nauni Solan, Himachal Pradesh. She joined as scientist at IARI in 2007, since then she is involved in many projects including Breeding of ornamental crops (Rose, Bougainvillea), Postharvest management and value addition of ornamental crops. She has commercialized her Dry Flower Technology to M/s Floral Images. She is handling two externally funding projects on DUS Validation (Marigold and Bougainvillea). She has standardized a protocol on *In vitro* propagation of hard to root bougainvilleas. She received letter of appreciation from DDG crop Sciences for her outstanding research work. She has conducted around 10 training programmes on value addition in ornamentals. She has published around 20 research papers, 50 popular articles, 15 book chapters, 3 practical bulletins, 4 technical bulletins, 3 extension folders, edited 4 books and many reports. She is actively involved in teaching MSc and PhD students. She is life member of Horticulture Society of India, Indian Society of Ornamental Horticulture, Delhi Agri Horticultural Society, Bougainvillea Society of India, Confederation of Horticultural Associations of India, etc. She received fellowship from Confederation of Horticultural Associations of India. She is editor of Journal of Ornamental Horticulture.

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