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## Varietal evaluation of hybrid tea roses vegetative characters under West Bengal condition

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### Abstract

An experiment was conducted during September 2019 to March 2020 to evaluate the eight hybrid tea rose varieties vegetative characters' performance. The varieties viz. Hollywood, Texas, First Red, Naranga, Varcelia, Mandelon, Goldtrike and Cherry Brandy were chosen for study. The all varieties were shown significant difference on all the characters studied. Maximum plant height was recorded for First Red and maximum plant spread was recorded for variety Varcelia. In the case of Leaf area Hollywood variety was found best but in the case of number of primary and secondary branches variety Texas was shown best result.

**Keywords:** Rose, rose varietal evaluation, hybrid tea rose

### Introduction

Rose is one of the most beautiful flower in the world it is known as queen of flowers. Rose belong to family rosacea with  $2n = 14$  chromosome. Hybrid tea rose was developed through the cross between Hybrid perpetual and Tea roses (Marriott, 2003) [9]. Rose have first rank in the international cut flower market among top ten cut flowers (Shivprasad *et al.*, 2016) [11]. Rose has popularity among all other cut flowers because of their beauty, fragrance and long-lasting blooming quality (Ghaffoor *et al.*, 2000; Tabassum *et al.*, 2002) [3, 13]. Rose may be also used for rockery purpose, pot and cut flower production. Rose also used for extraction of perfumes, vitamin C from hips for medicinal uses and for sales as cut flowers (Khan, 1978) [6]. Roses are grown throughout the colder and temperate regions of the Northern hemisphere from the Arctic to the subtropics. In the case of cut flower, Flower size and stem length are two important factors that dictate the value of cut-flower roses (Joshna and Mitra, 2018) [4]. There are 100 species and 1000 varieties of rose known in world. Generally, the red colour varieties of Hybrid Tea roses have great demand as compare to another colour varieties.

### Materials and Methods

An investigation was carried out for studies the vegetative performance of eight cultivars of Hybrid Tea rose from September 2019 to March 2020 at Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, and West Bengal, India. The Hybrid Tea rose varieties selected for the study were Hollywood, Texas, First Red, Naranga, Varcelia, Mandelon, Goldtrike and Cherry Brandy. The plants were planted in the raised beds with 45 X 45 cm spacing. The experiment was carried out in randomized block design with three replications of each treatment. The observations were recorded from five plants which were selected randomly. The maximum temperature during the experiment varied from and the minimum temperature varied from during the experiment period. The relative humidity ranges from with a rainfall of. Observation were recorded from selected plants on vegetative characters (Table 1) and data were statistically analysed. The crop was raised by following standard cultural practices (Anonymous, 2017) [1].

### Results and Discussion

Among eight cultivars of Hybrid Tea rose significant variation were recorded from all vegetative characters. In the case of plant height maximum value was recorded for cultivar First Red (111.00cm) and minimum value was recorded for cultivar Goldtrike (58.13cm). The variation in plant height due to genetic variability and it is also a varietal character (Joshna and Mitra, 2018; Kanamadi and Patil, 1993; Behera *et al.*, 2002) [4, 5, 2]. Environmental factors and prevailing during field experiment also can affect the plant height of different cultivars (Lundstad, 1975) [7]. In the case of plant spread maximum highest value of plant spread was recorded in cultivar Varcelia (76.07cm) and lowest value of plant spread was recorded in cultivar Mandelon (52.87 cm). The variation in plant spread is the result of formation of more

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cultivar Mandelon (52.87cm). The variation in plant spread is the result of formation of more ground shoots giving and adequate and this variation also due to genetic makeup of cultivars (Manjula, 2005) [8]. Maximum leaf area was recorded in cultivar Hollywood (35.07cm<sup>2</sup>) and minimum value for leaf area was recorded for cultivar Naranga (25.33 cm<sup>2</sup>). The variation in leaf area is due to genetic makeup and cultivar varied in the leaf length it is also reported by (Joshna and Mitra, 2018; Paramagouudar, 2014 and Soujanya *et al.*, 2018) [4, 10, 12]. In the case of primary branches maximum number of primary branches was recorded in cultivar Texas

(5.47) and minimum number of primary branches was recorded in cultivar Gold trike (3.00). The variation of numbers of primary branches is due to genetic variability of cultivars and it is also affected by environmental factors this variation is also reported by (Joshna and Mitra, 2018; Paramagouudar, 2014) [4, 10]. Another side in the case of secondary branches maximum number of secondary branches was observed in cultivar Texas (13.27) and minimum number of secondary branches was observed in cultivar Mandelon (6.80). All observed data are presented in table 1.

**Table 1:** Vegetative parameters of different Hybrid Tea rose varieties.

Treatment	Plant height (cm)	Plant spread (cm)	Leaf area (cm <sup>2</sup> )	Primary branches	Secondary branches
Hollywood	84.20	63.60	35.07	3.80	10.27
Texas	94.40	71.53	30.93	5.47	13.27
First Red	111.00	69.07	30.40	5.00	8.33
Naranga	80.07	54.93	25.33	3.20	10.80
Varcelia	92.40	76.07	29.27	4.73	7.33
Mandelon	90.80	52.87	28.13	4.00	6.80
Goldtrike	58.13	55.40	31.47	3.00	7.73
Cherry brandy	68.20	62.67	26.93	3.07	8.27
SEm ±	0.89	0.82	0.72	0.22	0.54
CD (P=0.05)	2.59	2.41	2.11	0.65	1.57

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