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EVALUATION OF *ANTIRRHINUM MAJUS* L. SELECTIONS FOR SEED PRODUCTION UNDER PROTECTED CONDITION#

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Abstract

An investigation for Evaluation of *Antirrhinum majus* L. selections for Seed parameters under protected condition was carried out at experimental farm of the department of Floriculture and Landscaping, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni- solan (H.P). Twenty one selections were transplanted in Randomized Block Design under naturally ventilated polyhouse. Observed parameters should variation for plant height (104.21 cm to 35.17cm), total number of pods per spike (27.53 to 7.33 per spike), and percentage of seed filled pods to total pod per spike varied (58.77 % to 36.52 %).

#Short Communication

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Introduction

Antirrhinum majus L. (Huxley *et al.*, 1992) is a flower with curious shape and magnificent colours. It is commonly known as Snapdragon or dog flower. It is an erect, herbaceous plant having cultivars with wide range of colours. It blooms in spring, producing spikes having florets of different colours and shades such as white, cream, yellow, rose, salmon, pink, mauve, red, magenta and bicolours. It can be easily grown without any specific cultural requirement. It has high cost benefit ratio and a short crop cycle. Medium and tall varieties of Antirrhinum having height of 75 to 150 cm are highly suitable for cut flower purpose. It can also be used in various landscape plans, rockeries and herbaceous borders. The dwarf varieties are bushy and are very useful for edging, window and pots whereas the trailing types are used for hanging baskets.

Antirrhinum is propagated through seeds so its seed are highly demand at International market. Thus present study was conducted under naturally ventilated polyhouse for evaluation of different genotypes for preferred seed production related parameters which could provide useful information to growers willing to cultivated Antirrhinum for commercial seed production.

Materials and Methods

The investigation entitled "Evaluation of *Antirrhinum majus* L. selections for vegetative and flowering characters under protected condition" was carried out at experimental farm of the department of Floriculture and Landscaping, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni- solan (H.P). Seeds of twenty one Selections were sown in plug trays. These trays which were filled with growing media comprising of vermiculite, cocopeat and garden soil in a ratio of 1:2:1, respectively. Before sowing, the growing media was drenched with 2 percent Bavistin and Dithane M-45 for 24 hours. Plug trays were then kept under protected conditions for germination. The regular spraying of tap water was ensured to maintain the optimum level of moisture in plug trays. Weeding was done at regular interval of time. Bavistin and Dithane M-45 was sprayed at weekly interval to prevent the damping off in seedlings. Seedlings were ready for transplanting 45 days after sowing.

The experiment was laid out in a Randomized Block Design with 3 replications each consisting of 25 plants under naturally ventilated polyhouse of 200 m^2. Plants were transplanted in prepared field. Immediately after transplanting, crop was irrigated. A basal dose of well rotten FYM (5 kg/m^2) along with 15 g/m^2 N, 20 g/m^2 P_2O_5 and 20 g/m^2 K_2O were applied. The water soluble fertilizers having N: P: K at the ratio of 19:19:19 was also applied at weekly interval upto the stage when plants started flowering. Crop was irrigated twice a week during vegetative growth and flowering, there after irrigation was reduced to enhance maturity of seeds. Manual weeding and hoeing was performed as and when required. This not only helped in control of weed population but improved soil aeration as well. There was no incidence of any disease and pest in the crop, but a schedule spray of Dithane M-45 (0.2%) and Bavistin (0.1%) was done at fortnight interval as a precautionary measure.

Result and Discussion

The data presented in Table reveals that selected selection exhibited significant variation in terms of plant height. Plant height ranged from 104.21 cm to 35.17 cm. The difference between maximum and minimum plant height was 75.85 cm (Table1). Plant height is an important criteria for seed yield parameters as it has influence on rachis length , spike length, number of seed pods on the spike.

Table1. Performance of Different Selections for Seed Production Related Parameters

Name of genotype	Plant height (cm)	Total number of pods per spike	Number of pods with seed per spike	% of seed bearing pods per spike	Test Weight (mg)	Number of seeds per pod
Selection 1	104.21	21.87	10.73	49.09	203.50	182.47
Selection 8	99.41	18.87	8.47	44.88	209.50	98.53
Selection 7	93.73	23.73	8.67	36.52	240.20	130.47
Selection 10	90.97	17.87	8.13	45.52	233.50	185.40
Selection 9	86.92	20.00	8.27	41.33	198.20	139.73
Selection 3	84.91	17.13	7.80	45.53	209.80	148.73
Selection 6	82.49	15.67	9.13	58.30	192.80	138.33
Selection 21	73.58	27.53	14.40	52.30	217.20	168.53
Selection 15	71.59	18.33	8.53	46.55	206.90	114.47
Selection 12	71.27	18.20	9.27	50.92	220.10	71.73
Selection 20	70.93	17.73	8.47	47.74	201.30	150.93
Selection 5	69.64	18.33	8.60	46.91	205.80	248.67
Selection 17	65.20	17.00	7.93	46.67	229.40	177.40
Selection 4	61.92	7.33	2.93	40.00	272.90	98.67
Selection 2	61.79	15.40	6.87	44.59	217.40	137.20
Selection 11	58.15	9.60	4.00	41.37	245.00	131.40
Selection 16	55.57	14.40	7.73	53.70	210.00	91.47
Selection 13	42.19	9.13	4.53	49.64	211.30	110.20
Selection 19	37.84	7.60	4.47	58.77	243.70	121.27
Selection 14	37.14	8.20	4.53	46.55	225.20	101.07
Selection 18	35.17	9.13	5.93	64.96	201.70	130.47
$CD_{0.05}$	8.87	3.30	1.26			2.45

Total number of pods per spike was varied from 27.53 to 7.33 per spike. But out of total number of pods only very few pods were having seeds. The data presented in Table 1, reveals that significant difference for total number of pods per spike were observed in different Selections. Maximum number of total pods per spike (27.53) was observed in Selection 21. In contrast, minimum total number of pods per

spike (7.33) was observed in Selection 4 which was further at par with Selection 19 (7.60) , Selection 14 (8.20), Selection 18 (9.13),Selection 13 (9.13) and Selection11(9.60).

The data in Table reveals that there was wide variation in terms of number of pods per spike having seeds. Maximum number of pods with seeds per spike (14.40) was in Selection 21 which was statistically at par with Selection 1 (10.73). In contrast, minimum number of pods with seeds per spike (2.93) was in Selection 4 which was further at par with Selection 11(4.00). On the basis of it, maximum percentage (58.77 %) of pods per spike having good number of seeds were observed in Selection 19 whereas Selection 7 was having minimum percentage (36.52 %) of pods having seeds. Similar results were obtained by Singh and Jauhari (2005), Singh and Martolia (2006).

It is apparent from Table that significant difference for number of seeds per pod was observed in different Selections. Maximum number of seeds per pod (248.67) was observed in Selection 5. However, minimum number of seeds per pod (71.73) was observed in Selection 12. Maximum test weight (272.90 mg) was observed in Selection 4 whereas minimum test weight (192.80mg) was observed in Selection 6. This variation may be due to the genetic constitution of Selections. Variations Singh and Martolia (2006); Singh and Jauhari (2006).

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