

Research Note :

RESPONSE OF CHINA ASTER VARIETIES TO PINCHING FOR GROWTH, YIELD AND QUALITY

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ABSTRACT: A field experiment to find out response of China aster varieties to pinching for growth, yield and quality was conducted at farm of Horticulture Section, College of Agriculture, Nagpur. The experiment consisted of sixteen treatments of four China aster varieties with four pinching treatments and it was laid out in Factorial Randomized Block Design with three replications. Maximum plant height was found in Phule Ganesh Purple variety. Plant height was significantly reduced with double pinching compared to control treatment of pinching i.e, without pinching. Whereas, spread of plant was found maximum in Phule Ganesh Pink as well as under the treatment of single pinching at 30 days after transplanting. Maximum flowering span was found in Phule Ganesh White as well as the treatment of double pinching at 30 and 45 days after transplanting. Yield characters were found to be maximum in Phule Ganesh White variety with single pinching treatment at 30 days after transplanting.

Keywords: *China aster, pinching, growth, yield, quality.*

Among the wide range of commercial flower crops, China aster occupies a selective position because of its prettiness, elegance, diverse form and varied attractive colour ranges. It is native to China and has spread to Europe and other tropical countries during 1731 A.D (Desai, 4). Among the annual flowers, China aster ranks next to chrysanthemum and marigold and is one of the important commercial flower crops of our country. China aster is a half hardy annual and has gained considerable importance in flower trade because of its wide range of colours and utility and is also found suitable for intercropping in coconut gardens (Janakiram, 5). Successful cultivation of China aster depends upon proper selection of varieties. In recent years, several new cultivars of aster with wide range of colours have entered the market but all the cultivars cannot be grown everywhere successfully.

Hence, it is necessary to identify the suitable cultivar for commercial cultivation in Vidarbha region and even it is felt necessary to find out suitable pinching time for different varieties to get better yields. Hence the present investigation was

carried out to know the response of China aster varieties to pinching for growth, yield and quality.

A field experiment to find out response of China aster varieties to pinching for growth, yield and quality was conducted at farm of Horticulture Section, College of Agriculture, Nagpur, during the year 2010-11. The experiment was laid out in Factorial Randomized Block Design comprising sixteen treatments, with two factors. First factor consisted of four varieties of China aster i.e. Phule Ganesh White (V_1), Phule Ganesh Pink (V_2), Phule Ganesh Violet (V_3) and Phule Ganesh Purple (V_4); and second factor consisted of four levels of pinching treatments, viz. No Pinching (P_0), Pinching at 30 DAT (P_1), Pinching at 45 DAT (P_2) and Pinching at 30 and 45 DAT (P_3). The entire treatments were replicated thrice. Irrigation, fertilizer application and weeding were done as per the recommendations. Data recorded was analysed statistically as per standard procedure.

The perusal of Table 1 revealed that the maximum plant height (45.68 cm) was recorded in Phule Ganesh Purple variety followed by Phule Ganesh White (43.60 cm). Kulkarni and Reddy (7) also revealed that the cultivar Phule Ganesh White

Treatment	Plant height (cm)	Spread of plant (cm)	Fresh wt. of plant (g)	Earliness in flower bud initiation (days)	Flower Yield (q/ha)	Weight of flower (g)	Diameter of flower (cm)	Vase life of flower (days)
A. Varieties (V)								
Phule Ganesh White (V ₁)	43.60	22.60	56.94	48.32	149.59	2.10	5.17	9.37
Phule Ganesh Pink (V ₂)	37.34	32.26	55.71	54.07	118.35	1.76	4.89	7.83
Phule Ganesh Violet (V ₃)	41.85	29.43	50.65	57.73	102.35	1.82	4.99	7.33
Phule Ganesh Purple (V ₄)	45.68	25.62	66.13	53.97	127.45	2.00	5.06	8.05
CD (P=0.05)	3.51	0.273	0.135	1.445	23.39	0.07	0.187	0.112
B. Pinching (P)								
No Pinching (P ₀)	45.39	21.66	47.06	49.05	102.45	2.21	5.61	9.23
Single Pinching at 30 DAT (P ₁)	43.21	33.03	67.44	52.58	148.24	1.96	5.21	8.52
Single Pinching at 45 DAT (P ₂)	41.76	29.27	61.01	54.97	126.94	1.80	4.92	7.85
Double Pinching at 30 and 45 DAT (P ₃)	38.11	25.96	53.91	57.53	120.12	1.71	4.38	6.98
CD (P=0.05)	3.51	0.273	0.135	1.445	23.39	0.07	0.187	0.112
Interaction (V x P)								
CD (P=0.05)	NS	0.546	0.270	NS	NS	NS	NS	0.112



Phule Ganesh White



Phule Ganesh Pink



Phule Ganesh Violet



Phule Ganesh Purple

Plate 1 : View of plants of different China aster varieties.

recorded highest plant height (66.4cm). Among the pinching treatments, maximum plant height (45.39cm) was noticed in control (P₀) i.e. no pinching treatment. These results are in close agreement with the findings of Sehrawat *et al.* (9), who reported that pinching significantly reduced plant height, especially when conducted at 30 DAP. Significantly maximum spread of the plant (32.26 cm) was noticed in Phule Ganesh Pink and it was followed by Phule Ganesh Violet (29.43 cm), and

with regard to pinching treatments maximum spread of the plant was noticed in single pinching at 30 days after transplanting (33.03 cm). These results are in close agreement with findings of Bhati and Chitkara (1). The maximum fresh weight of the plant (66.13 g) was observed in Phule Ganesh Purple confirming to the results of Chavan *et al.* (3). With respect to pinching treatments, maximum fresh weight of the plant (67.44 g) was noticed in single pinching at 30 days after

transplanting. The interaction effect due to the varieties and pinching on fresh weight of plant were found to be significant and maximum fresh weight (78.83 g) was reported in V₄P₁ treatment.

Earliness in flower bud initiation was recorded in Phule Ganesh White (48.32 days) followed by Phule Ganesh Purple (53.97 days). In contrary to these findings, Chavan *et al.* (3) reported that Phule Ganesh White variety recorded maximum number of days to open first flower bud initiation. As regard to pinching treatments, significantly the earliest flower bud initiation (49.05 days) was noticed in control treatment i.e. no pinching (P₀) followed by double pinching (P₃). These results are in close agreement with the findings of Khandelwal *et al.* (6), Sehrawat *et al.* (9) and Srivastava *et al.* (10) in marigold who noticed that pinching increased the number of branches (except with 10 g N/m²) and number of days to flower bud initiation.

Significantly the maximum yield (149.59 q/ha) was recorded with Phule Ganesh White variety followed by Phule Ganesh Purple (127.45 q/ha). The results are in line of reports of Kulkarni and Reddy (7). Among the pinching treatments, maximum yield (148.24 q/ha) was recorded with single pinching at 30 DAT (P₁) followed by single pinching at 45 DAT. The results are in close agreement with Mahornor *et al.* (8) who reported that with regard to yield parameters, the maximum flower yield plant⁻¹ and hectare⁻¹ were recorded with pinching at 30 DAT

Quality parameters such as weight (2.10 g) and diameter (5.17 cm) of flower and vase life of flower (9.39 day) were found to be maximum in Phule Ganesh White variety, and among the pinching treatments, control treatment of pinching i.e., no pinching (P₀) was found to be superior in all aspects of quality characters. Similar results were also recorded by Srivastava *et al.* (10) in Pusa Narangi Gainda who noticed that the flower weight of marigold were maximum for un pinched plants.

Similar trends had also reported by Beniwal *et al.* (2) in chrysanthemum.

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