

## Varietal performance of bitter gourd (*Momordica charantia* L.) in respect of flowering and fruiting parameters under Parbhani district of Maharashtra, India

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### ABSTRACT

An experiment was performed to study the varietal performance of bitter gourd varieties in respect of flowering and fruiting parameters at Department of Horticulture, Marathwada Agriculture University, Parbhani, Maharashtra. Results revealed that Variety 'Priya' gave best result of flowering in terms of nodal position of first female flower, days to appearance of first female flower, number of female flower, sex ratio of flowers and fruiting parameters like weight of fruit, number of fruits per vine.

Nalawade, N.P., Chavan, S.D., Barkule, S.R., Bhosale, A.M. and Shinde, S.J. (2011). Varietal performance of bitter gourd (*Momordica charantia* L.) in respect of flowering and fruiting parameters under Parbhani district of Maharashtra, India. *Internat. J. agric. Sci.*, 7(1): 144-146.

**Key words :** Bitter gourd, Varietal performance

### INTRODUCTION

Amongst the vegetables, fruit vegetables particularly cucurbits which is a very big group has commercial importance due to its nutritional value, good keeping and transport quality. Bitter gourd (*Momordica charantia* L.) is a major cucurbit crop grown in *Kharif* and summer season. Bitter gourd fruits contained crude protein, ash, phosphorus, sulphur, phenol, carbohydrates and is rich source of iron and vitamin 'C'. The commercial cultivation of bitter gourd in Maharashtra has been increased due to its high remunerative value. With increase in number of irrigation projects the area under this crop in Marathwada region is likely to be increased. However, Scientific knowledge of the cultivation practices of bitter gourd is lacking. A large number of cultivators cultivate this crop by using either their own seed or available seed in the market. The present status of bitter gourd production is not satisfactory and hence, the yield is low. Very little work has been done in respect of varietal performance and other package of practices Information about performances of varieties is lacking. Therefore, an experiment entitled varietal performance of bitter gourd (*Momordica charantia* L.) in respect of flowering and fruiting parameters under Parbhani district Maharashtra, India was conducted.

### MATERIALS AND METHODS

The present study entitled varietal performance of

bitter gourd (*Momordica charantia* L.) in respect of flowering and fruiting parameters under Parbhani district of Maharashtra, India was conducted during *Kharif* season in the year 2007-2008 at Department of Horticulture, Marathwada Agricultural University, Parbhani, Maharashtra. The experimental site was having well leveled and uniform with medium black soil having uniform texture and good drainage. The experiment was laid out in RBD and consisted of eight treatments and three replications. The treatment details are as below:

Tr. No.	Treatments (Variety)
T <sub>1</sub>	Phule Green Gold
T <sub>2</sub>	Hirkani
T <sub>3</sub>	Phule Ujjwala
T <sub>4</sub>	Priya
T <sub>5</sub>	Kokon Tara
T <sub>6</sub>	Bitter Gourd 2
T <sub>7</sub>	MC 84
T <sub>8</sub>	Co White Long (Cheak)

The experimental plot was applied with 100:50:50 Kg NPK from urea, single super phosphate and murate of Potash. The seed was sown at the spacing of 150 cm as row to row and 100 cm as plant to plant. All standard cultural operations were carried out as per recommendations and observations of flowering and fruiting parameters were recorded at regular interval.

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## RESULTS AND DISCUSSION

The results obtained from the present investigation have been discussed under following heads:

### Flowering parameters:

Nodal position of the first female flower:

Nodal position of the first female flower on the vine is very important and desirable characteristics in bitter guard as this characteristic has association with earliness. The variety Priya (17.00) required higher nodal position for production of first female flower. While the control treatment Co White Long (13.32) required lowest nodal position for production of first female flower which was statistically at par with Phule Ujjwala. The finding of the present investigation are similar to Mohanthy (2001) who reported that in pumpkin the nodal position of the first female flower ranged from 8.33 to 17.89 under Orissa agro climatic conditions.

Days to appearance of first female flower :

In this experiment the variety Priya and Hirvani required more number of days for appearance of first female flower. Minimum number of days to appearance of first female flower was required in Bitter Gourd 2 and Kokan Tara. Murli *et al.* (1986) found that number of days to appearance of first female flower in bottle gourd negatively correlated with yield per vine. The result of the present investigation is however, not in agreement with these finding, as Priya has also recorded highest yield per vine. However, the results about two varieties MC 84 and Phale Ujjwala, agreed with above.

Number of male flower per plant :

In the present investigation the variety MC 84 were recorded 404.32 male flowers per vine followed by Priya, Phule Ujjwala, Phule Green Gold and control treatment Co White Long. Reddy and Ramarao (1984) found that number of male flower has positive and significant correlation with yield in ridge good. The results of the present investigation are in agreement to those recorded by these workers.

Number of female flowers per plant :

The number of female flowers in bitter gourd has direct relation with the fruit set. In the present studies variety Priya (28.33) recorded higher number of female flower per vine followed by MC 84, Phale Ujjawala and control treatment Co White Long. The lowest number of female flower per vine was recorded by variety Bitter Gourd 2. Srivastava and Srivastava (1978), Prasad and

Sl. No.	Variety	Nodal position of first female flower	Days to appearance of first female flower	Number of male flowers per plant	Number of female flowers per plant	Yield per plant (kg)	Yield per vine (kg)
1	Phule Green Gold	16.00	16.00	391.62	23.32	116.79	20.33
2	Phule Ujjwala	16.60	17.63	368.30	20.31	118.10	18.00
3	Phule Green Gold	13.36	15.36	392.31	26.10	117.86	21.66
4	Priya	17.00	18.00	398.20	28.33	117.06	26.33
5	Kokan Tara	17.10	17.30	350.61	21.26	116.19	17.00
6	Bitter Gourd 2	15.20	17.00	372.00	19.13	119.11	17.33
7	MC 84	17.70	15.33	404.32	28.00	117.11	25.66
8	Co. White Long (C)	13.32	17.33	371.6	25.20	117.96	23.00
S.E.D.		0.35	0.33	1.61	1.03	0.75	0.67
C.D. (P=0.05)		1.07	1.00	7.89	3.13	0.70	1.95

Singh (1984) found that in bitter gourd yield was positively correlated with number of flower per vine. The results of the present investigation are in agreement with the finding of the above workers.

Sex ratio female/male :

In the present investigation the variety Priya (1:14.06) recorded lowest sex ratio, while the highest sex ratio was recorded by Bitter Gourd 2 (1:19.44) Arora *et al.* (1983) observed that lower sex ratio lead to higher yield potential. Haribabu (1985) found association of sex ratio to length of vine in cucumber. The present findings also show that the variety with low sex ratio has high yield potential and *vice-versa*.

#### Fruit parameters :

Average fruit length of fruit (cm) :

The data presented in Table 1 indicated that control treatment Co White Long (24.40 cm) recorded maximum average length of fruit at marketable stage which was statistically at par with Priya. While minimum average length was recorded in Hirkani (14.35 cm) which was at par with Bitter Gourd 2. Ramchandran *et al.* (1979), recorded that in bitter gourd yield was positively and significantly correlated with the average length of fruit. The findings of the present investigation are also in agreement with the above workers.

Average diameter of fruit (cm) :

Data presented in Table 1 revealed that maximum diameter of fruit at marketable stage was recorded in Phule Ujjwala (4.46 cm) which was statistically at par with MC 84. While minimum diameter was recorded in control treatment Co White Long (3.70 cm).

Average weight of fruit (g) :

Average fruit weight directly contributes to yield, if number of fruits per vine are more. In the present study maximum weight of fruit at marketable stage was recorded in variety Priya (87.00 g). In bitter gourd yield was positively and significantly correlated with weight of fruit as observed in Rajeshwari and Natrajan (1999) and Singh *et al.* (2001). The present studies has also recorded similar observations.

Number of fruits per vine :

Data presented in Table 1 revealed that variety Priya (26.33) produced more number of fruits per vine followed by MC 84 (25.26) and Phule Ujjwala (24.26). While the lowest number of fruits per vine was recorded in Bitter Gourd 2(17.00). The total yield per vine in bitter gourd was positively and significantly correlated with number of the fruit per vine as observed by Rajeshwari and Natrajan (1999) and Singh *et al.* (2001). The present studies also reported similar observations.

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Received : August, 2010; Accepted : October, 2010