

Short Communication

Bud, Flower and Fruit Drop Pattern in Umran *Ber* in Semi-arid Maharashtra

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The pattern and extent of fruit drop in *ber* was studied under north Indian conditions (Awasthi and Misra, 1969; Teotia and Chauhan, 1964; Singh *et al.*, 1991). As information is scanty with respect to extent and pattern of fruit drop in different commercial cultivars of *ber* grown in Maharashtra, the present study was undertaken in Umran cultivar under which maximum area is covered in the state.

The investigations were carried out at Department of Horticulture, Mahatma Phule Agricultural University, Rahuri, on fifteen-year-old trees of cultivar Umran having uniform vigour. All the trees were given uniform fertilizer and plant protection. Ten comparable branches were tagged on a tree and 15 such trees as replicates were under observation. The dropped flower buds, flowers and fruits were recorded daily from appearance first bud and continued till harvest. For this on each day, the flower buds, flowers and fruits dropped were collected. The count in respect of all the drop, actual number of fruits harvested and the total number of flower buds produced, the percentage drop at each interval, have been computed.

Of the total flower buds produced, 6.58% dropped before opening, 56.88% dropped as opened flowers and 17.97% dropped as fruits at various stages, retaining just 12.0% for final harvest (Table 1). Singh *et al.* (1991)

observed flower and fruit drop of 85%, retaining 15% fruits for final harvest of *ber* under Ludhiana conditions. Teotia and Chauhan (1964) also reported the maximum fruit drop in *ber* during early stages of fruit development.

There was no drop during 1st two week of bud emergence. The drop (before opening) that started by the end of 3rd week after emergence continued for a very short period, i.e., up to 5th week only. The drop was higher for the opened flowers. It was quite sizable (19.34%) and coincided with the drop during 9th and 10th week after bud emergence. Then, it decreased gradually, till 15th week after emergence.

The fruit drop started after 6th week of bud emergence. It continuously increased, and was sizable between 11th and 14th week after set. The fruit drop, after 16th week of set, was almost negligible (0.3%), and can be treated as period of no drop. The entire fruit drop was observed in only one wave (Singh *et al.*, 1991). The rate of cumulative fruit drop was the highest during 32-40 day from fruit set. However, Singh *et al.* (1991) observed the highest cumulative fruit drop after 25-day of fruit set in *ber* cultivar Umran. This might be due to climatic conditions of western Maharashtra. Thus, the pattern of cumulative drop is somewhat similar to that observed by Singh *et al.* (1991). The total drop during season comes to 87.99% as under:

Table 1. Flower and fruit drop pattern in ber.

	Week after		Drop (%)			Total drop (%)	Cumulative drop (%)
	Bud set	Fruit set	Bud	Flower	Fruit		
1 to 2		-	-	-	-	-	-
3		-	0.900	0.091	-	0.991	0.991
4		-	2.387	0.141	-	2.527	3.519
5		-	3.297	0.172	-	3.469	6.988
6		1	-	4.766	0.218	4.984	11.972
7		2	-	6.199	0.220	6.421	18.393
8		3	-	7.109	0.264	7.373	25.766
9		4	-	10.347	0.282	10.629	36.395
10		5	-	9.010	0.400	9.410	45.805
11		6	-	7.463	0.459	7.135	52.940
12		7	-	5.162	0.638	7.101	60.040
13		8	-	4.275	0.800	5.962	66.003
14		9	-	3.343	0.891	5.166	71.169
15		10	-	-	1.137	4.480	75.645
16		11	-	-	4.189	4.189	79.839
17		12	-	-	3.734	3.374	83.212
18		13	-	-	2.373	2.373	85.585
19		14	-	-	1.846	1.846	87.431
20		15	-	-	0.309	0.309	87.774
21		16	-	-	0.231	0.231	87.971
22		17	-	-	0.021	0.021	87.992

1. Pre-set drop

- a) Bud : 6.58%, 1-4 weeks after bud emergence.
- b) Flower drop : 56.88%, 5-13 weeks after bud emergence.

2. Post-set drop

- a) Early post-set : 18.05%, 1-3 weeks after fruit set.
- b) Mid post-set : 32.48%, 4-7 weeks after fruit set.
- c) Late post-set : 12.77%, 8-10 weeks after fruit set.

3. Pre-harvest drop

- a) Early season : 0.53%, 15-16 weeks after fruit set.
- b) Late season : 0.021%, 17 weeks after fruit set.

References

- Awasthi, A.N. and Misra, R.S. 1969. Effect of pruning on subsequent vegetative growth, fruit set, fruit drop and quality of ber. *Punjab Horticultural Journal* 9: 54-60.
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