

## ABNORMAL FRUITING BEHAVIOUR OF *BER* (*ZIZIPHUS MAURITIANA* LAMK.) CULTIVAR ILAYACHI

B.B. VASHISHTHA

Central Arid Zone Research Institute, Jodhpur-342 003

In the *ber* (*Ziziphus mauritiana* Lamk.) cultivar Ilayachi, besides the usual small sized fruits, some abnormally large fruits also occur (Pareek, 1983). Qualitative and quantitative differences between these two types of fruits were studied.

The largest size of the abnormal and normal fruits was 3.6 x 3.3 cm and 2.2 x 2.2 cm, and the average size 3.2 x 3.2 cm and 2.0 x 2.1 cm, respectively (Table 1). The maximum and the average fruit weights were 21.9 and 19.2 g in the abnormal large fruits and 7.39 and 6.1 g, respectively, in the normal fruits. Similar differences were observed in fruit volume and size, and also in stone weight and volume. There was not much difference in the total soluble solid contents of the abnormal (23.4° Brix) and the normal (23° Brix) fruits. Pulp/stone ratio was, however, more in normal (19.3) than in the abnormal fruits (11.8). The abnormal fruits matured earlier (January 10 to 25) than the normal fruits (January, 20 to February, 10), although the time of fruit set was the same in both the cases.

The percentage of abnormal and normal fruits, respectively, was 0.11 and 3.51 on primary, 0.36 and 36.29 on secondary and 0.48 and 59.3 on tertiary branches (Table 2). No regular pattern in the setting position of the abnormal fruit in a branch was noticed, and no definite causal factors for this abnormal fruiting could be established. In order to test and verify as to whether the abnormally large fruit size is due to metaxenia i.e. effect of pollen on fruit characteristics, the Ilayachi cultivar was cross pollinated with several other *ber* cultivars viz., Seb, Gola, Jogia, Mundia, Umaran, Katha and Kaithli etc. But no effect on fruit characteristics of cv Ilayachi was observed. The *ber* cultivar Ilayachi is an octaploid (Khoshoo and Singh, 1963 and Nehra *et al.*, 1983) and is reported to have 90% pollen sterility, but good fruit set is achieved, presumably, due to the abundance of pollen.

Author is grateful to Dr. K. A. Shankarnarayan, Director, Central Arid Zone Research Institute, Jodhpur for providing guidance and facilities during the course of studies.

Table 1. Fruit characters in *ber* cv Ilayachi

Fruit type	Fruit size (cm)				Av. size of stone (cm)		Fruit wt (g)		Fruit Av. vol. (cc)	Av. wt stone (g)	TSS (°Brix)	Pulp/stone ratio
	Max.		Av.		P	E	Max. wt.	Average wt.				
	P	E	P	E								
Abnormal	3.6	3.3	3.2	3.2	1.5	0.8	21.9	19.2	19.0	1.5	23.4	11.8
Normal	2.24	2.23	2.0	2.1	1.1	0.6	7.3	6.1	5.6	0.3	23.0	19.3

P = Polar, E = Equatorial, TSS = Total Soluble Solids

Table 2. Per cent and normal fruit set on different branches in *ber* cv Ilayachi based on total fruit number over 4000 per tree

Fruit type	Branches		
	Primary	Secondary	Tertiary
Abnormal	0.11	0.36	0.48
Normal	3.51	36.29	59.3

REFERENCES

- Khoshoo, T.N. and Singh, N. 1963. Cytology of northwest Indian trees. 1. *Ziziphus jujuba* and *Z. rotundifolia*. *Silvae Genetica* 12(5) : 141-80.
- Nehra, N.S., Sareen, P.K. and Chitkara, S.D. 1983. Cytological studies in genus *Ziziphus*. *Cytologia* 48 : 103-7.
- Pareek, O.P. 1983. *The Ber*. Indian Council of Agricultural Research, New Delhi. 72 p.