

Short Communication

Characterization and evaluation of ber genotypes in hot arid regions of Tamil Nadu

I. Geethalakshmi, P. Mareeswari, A. Senthil and V. Rajaram
Regional Research Station, Kovilangulam, Aruppukottai 626 107
Tamil Nadu Agricultural University, Tamil Nadu
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Ber (*Ziziphus mauritiana* Lamk.) is an economically important tropical fruit tree, which is grown all over the drier parts of the Indian subcontinent, Africa and northern Australia for its fresh fruits. It is one of the suitable trees to grow in dry regions, because it can withstand long periods of drought. *Ber* (Chinese date, Chinese Fig or *bore*) also known as poor man's fruit is most widely cultivated in Punjab, Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar, Gujarat, Maharashtra etc. Liu and Cheng (1995) reported that Indo-Malaysia region is the centre of both evolution and distribution of the genus *Zizyphus*. In India, a number of *ber* cultivars have been developed largely by the growers through selection in different regions. Maximum variability of *ber* is observed in Rajasthan, Gujarat, Haryana, Punjab and Madhya Pradesh and Uttar Pradesh. In Gujarat, Mehsana, Anand, Panchmahal, Patan and Sabarkatha districts are having rich diversity of *ber* (Shukla *et al.*, 2003).

The experimental investigation was carried out in the orchard of B3 block in an area of 1 hectare at Regional Research Station, Aruppukottai during the period of 2005 to 2009. Twenty six genotypes were assessed in randomized block designs, which were replicated thrice. The following were the genotypes:

Source	Accession No.
Banarsi	ZM-1
Umran	ZM-2
Kaithali	ZM-3
Gola	ZM-4
Kathapal	ZM-5
Safeda	ZM-6
Aruppukottai local	ZM-7
Kakadia I	ZM-8
Kakadia II	ZM-9
Periyakulam Local	ZM-10
Ilaichi RS.	ZM-11
Ilaichi RS	ZM-12
Ilaichi RS	ZM-13
Ilaichi RS	ZM-14
Sendurai RS	ZM-15

Sendurai RS	ZM-16
Sendurai RS	ZM-17
Sendurai RS	ZM-18
Sendurai RS	ZM-19
Sulakarai	ZM-20
Seb	ZM-21
Mundia	ZM-22
Guli	ZM-23
Sivakasi	ZM-24
Kalayamputhur	ZM-25
Periyakulam Local	ZM-26

These genotypes were evaluated for their yield characters viz., yield per tree, fruit weight, pulp weight and TSS ($^{\circ}$ Brix). The Total Soluble Sugars (TSS) was estimated using a hand refractometer. The pooled data of five years (2005-2009) were statistically analyzed by following the method of Gomez and Gomez (1984). The observations were recorded after the receipt of monsoon rains during September-October.

In *ber*, there were twenty six genotypes collected from different parts of India and were maintained in the orchard for biometric evaluation and the pooled results of 2005 to 2009 stated that among the twenty six genotypes evaluated, Kaithali registered maximum yield of 5.5 kgs/tree followed by Gola (4.6 kg). Gola recorded maximum fruit weight of 18.8 g followed by Kaithali (17.3 g). In respect of pulp weight, the same trend was noticed in Gola (17.6 g) followed by Kaithali (16.1 g). Kathaphal recorded maximum TSS of 15.3 $^{\circ}$ Brix followed by Kaithali (14.4 $^{\circ}$ Brix) (Table 1).

These results were in conformity with the findings of Pareek and Dhaka (2008) reported that the fruit yield of *ber* had significantly positive correlation with pulp: stone ratio, TSS, acidity, ascorbic acid, total sugars and reducing sugars which indicated that selection for these traits would lead to an improvement in yield, while it was significantly and negatively associated with TSS: acid ratio.

Table 1. Evaluation of ber germplasm for yield and quality attributes

Source	Acc No.	Pooled Mean (2005-2009)			
		Yield (Kgs /tree)	Fruit weight (g)	Pulp weight (g)	TSS (°Brix)
Banarsi	ZM -1	4.30	13.65	12.38	13.4
Umran	ZM -2	3.22	14.68	13.25	12.7
Kaithali	ZM -3	5.55	17.32	16.10	14.3
Gola	ZM -4	4.61	18.83	17.59	12.5
Kathapal	ZM -5	3.64	12.87	11.64	15.3
Safeda	ZM -6	3.24	7.40	6.33	12.1
Aruppukottai local	ZM -7	2.26	8.99	7.80	12.4
Kakadia I	ZM -8	2.20	16.09	14.70	12.6
Kakadia II	ZM -9	3.25	13.69	11.34	13.0
Periyakulam Local	ZM -10	2.00	4.48	4.11	4.6
Ilaichi RS.	ZM -11	4.52	7.97	7.05	12.1
Ilaichi RS	ZM -12	3.36	10.40	9.44	13.1
Ilaichi RS	ZM -13	2.96	10.81	9.74	13.2
Ilaichi RS	ZM -14	3.90	10.43	8.63	13.8
Sendurai RS	ZM -15	3.40	9.49	7.46	13.2
Sendurai RS	ZM -16	3.07	8.37	7.29	12.0
Sendurai RS	ZM -17	3.80	12.35	11.14	12.0
Sendurai RS	ZM -18	3.48	10.56	9.26	13.2
Sendurai RS	ZM -19	3.77	9.64	8.35	12.4
Sulakarai	ZM -20	3.01	9.29	8.36	12.4
Seb	ZM -21	3.55	11.33	10.47	12.7
Mundia	ZM -22	2.73	12.91	11.55	12.9
Guli	ZM -23	3.57	9.77	8.86	12.3
Sivakasi	ZM -24	2.70	9.00	9.79	12.2
Kalayamputhur	ZM -25	3.35	10.04	8.81	11.2
Periyakulam Local	ZM -26	2.51	7.19	7.43	12.8
SEd		0.43	0.79	0.52	0.47
CD (0.05%)		0.87	1.59	1.05	0.94

References

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