

A REVIEW ON PRODUCTION TECHNOLOGY OF BER AND IT'S VARIETIES

*¹Jitendra Jareda, ² Samir E. Topno ³ Saket Mishra, ⁴ Shashi Kant Ekka

INTRODUCTION

BER

Zizyphus mauritiana (Indian ber)

- Zizyphus jujube (Chinese jujub)
- Family: Rhamnaceae

The ber is a vigorous growing, small spreading tree with almost vine like drooping branches. The round to oval reddish brown are having 5.4-8.0% sugar and 85-95 mg of Ascorbic acid (Vit. C) per 100g. Central Asia is supposed to be the centre of origin for ber. The tree is a host plant for rearing lac insect (*Tachardia laccad*). Lac insect rearing helps in the production of lac. The powder of ber roots has very many medicinal properties such as cure for ulcer, fever and wounds. The stem bark powder is a remedy for diarrhea. Thirtyfour local Ber varieties were evaluated at Horticultural Research Institute AARI, Faisalabad, Horticultural Research Station Bahawalpur (Punjab) and Jujube Research Station, Tandojam (Sindh).

Area & Production:

The major ber-growing states are

Haryana, Punjab, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Bihar, Maharashtra, Andhra Pradesh and Tamil Nadu.

Economic Importance:

Fruits are rich in Vitamin C, A and B complex. About 5.6% digestible crude protein and 49.7% total digestible nutrients are present in the leaves making it a nutritive fodder for animals. Ber can be processed to prepare murabba, candy, dehydrated ber, pulp, jam and beverage.

Agro-climatic requirements:

Ber grows under varying climatic conditions at elevations upto 1,000 m. above m.s.l. It can withstand extremely hot conditions but is susceptible to frost. High atmospheric humidity is not suitable for its cultivation.

Ber grows on a wide variety of soils- sandy, clayey, saline and alkaline soils.

Growing and Potential Belts:

The state-wise growing belts are given in the following:

*¹Jitendra Jareda, ² Samir E. Topno ³ Saket Mishra, ⁴ Shashi Kant Ekka

*¹M.Sc (Hort.) Fruit Science, Dept. of Horticulture, SHUATS, Naini, Prayagraj.

²Assistant Professor, Dept. of Horticulture, SHUATS, Naini, Prayagraj.

³Assistant Professor, Dept. of Horticulture, SHUATS, Naini, Prayagraj.

⁴ Research Scholar, Dept. of Horticulture, SHUATS, Naini, Prayagraj.

State	Growing belts
Haryana	Hisar, Rohtak, Jind, Panipat, Mahendergarh, Gurgaon,
Rajasthan	Bharatpur, Jaipur, Jodhpur
Punjab	Sangrur, Patiala
Gujarat	Banaskantha, Sabarmati
Karnataka	Bijapur, Bellary, Gulbarga, Belagaum, Raichur, Bidar
Tamil Nadu	Tirunelveli, Ramanathapuram, Dharmapuri, Salem

Planting Material:

- Ber is vegetatively propagated by ‘I’ or ‘T’ (shield) budding method.
- Seeds are sown in well-prepared nursery bed at 30x30cm. spacing and at 2cm. depth during March-April. These seedlings are either transplanted in the field during July-August for in-situ budding or can be budded in the nursery beds. In irrigated conditions, transplanting can be done in bare rooted stage during January-March after treatment with 12% Waxol or after defoliation.
- In rainfed areas, seeds are sown in 300 gauge polythene tubes of 25 cm. length and 10 cm. diameter, filled with a 1: 1: 1 mixture of farmyard manure, sand and clay. In northern India, sowing is done during April in north India so that the seedlings become buddable during July. The budlings become ready for transplanting 1-2 months after budding. The budlings raised by this technique retain their deep rooting

tendency and prove to be suitable under low rainfall drylands. In drylands, ber orchard can also be raised by transplanting tube-raised ber seedlings with the onset of monsoon, leaving them to grow in the field until the forthcoming summer for budding in-situ.

Planting season:

Planting is usually done at the beginning of monsoon.

Spacing:

Planting is done at a spacing of 6 m. in low rainfall areas and 8m.in the irrigated condition or in areas receiving high rainfall. In irrigated areas, ber plants can also be transplanted during January-March.

Planting Method:

Pits of 60x60x60 cm. are dug during summer and refilled after mixing two baskets of farmyard manure and 50 g. of heptachlor dust to protect from termite attack.

Nutrition:

A fertilizer dose of 750 g. N/tree gives highest yield whereas 250 g. N and 250 g. P₂O₅ increase fruit yield. Application of K does not give any response.

Irrigation:

Irrigation is provided at an interval of 3-4 weeks. Irrigation provided during October results in shedding of flowers and that during March-April causes fruit spoilage and delays ripening.

Training and Pruning:

Remove the root stock sprouts and have a straight stem upto 75 cm from the ground level. It is very important in the early years to build up a strong framework and in later years to maintain vigour to improve fruit size and quality. During February – March, prune the trees and thin the crowded branches to provide maximum fruit bearing area in the tree.

Varieties:

Kaithili: It is a variety with straight thorns but not so pronounced. Leaves are ovate with minutely serrated margin. Fruits ovate-oblong with broadly mummillate apex, 3.37 cm long, 1.9 cm thick weighing 6.22 g. stone elliptic oblong with pointed tip and furrowed surface.

Umran: In this variety, the trees are medium sized with bushy decumbent branches almost touching the ground. The thorn is curved. Ovate oblong leaves with prominent serrations. Fruit elliptic, 4.2 cm long and 3.2 cm thick.

Gola: It has got spreading tree. Fruits are almost round with flat stylar end. Skin is

bright yellow, smooth and glossy, fruits come to ripening during January. Each fruit weighs 14-25g. each tree yields about 100-125kg.

Seo (Sanaur No.2): leaves ovate to ovate oblong with obtuse base and acute apex. Fruits round resembling crab apple, stylar end round with mild depression in the centre, stem end broad, deeply grooved. Fruits light pinkish yellow with occasional specks at maturity. Selected from a place called Sanuar near Patiala in Punjab.

Seb: It is an early variety. Fruits are golden yellow in colour and slightly oblong ie., 3.0cm x 2.5cm. it yields 90-1000 kg per tree. It acts as a good pollinizer for a number of varieties.

Banarsi: It is a mid-season variety. Trees are 8-12 M tall. fruits globose oblong to long in shape with tapering stylar end. Unripe fruits are green in colour. After ripening they turn to golden yellow. It has performed well under Tamil Nadu condition. Yield ranges from 100- 110kg/tree/year.

Chuhara: It is another mid-season variety with semi-tall tree having spreading branches. Fruits ovate-oblong, size 2.9 cm x 2.1cm; weight 16.8g. fully matured fruits which start ripening will be greenish yellow in colour. After full ripening, the colour changes to chocolate brown and the skin becomes very thin and soft. The flesh will be very sweet.

Fruits are suitable to be heated and made into dry fruits like dates.

Sandhura Narnaul (Sanaur No.1): It has erect trees. Fruits are oval-oblong to longish, stylar end slightly pointed. Fruits are greenish yellow to golden yellow. Size 4.45x2.18 cm. it has thin skin. The average yield is 80 kg/tree/year.

Elaichi: Trees spreading with fruits having the characteristic shape of cardamom hence called 'elaichi'. Fruits are small each weighing 6g with the size of 2.05 cm x 1.88cm. the average yield is 115kg/tree/year.

References:

- [lec19.pdf \(iasri.res.in\)](http://iasri.res.in/lec19.pdf)
- [BER \(nhb.gov.in\)](http://nhb.gov.in)
- [Horticulture :: Fruits:: Ber \(tnau.ac.in\)](http://tnau.ac.in)

