

Short Communication

Root Distribution Studies in Ber (*Ziziphus mauritiana* Lamk.)

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Ber (*Ziziphus mauritiana* Lamk.) is assuming importance as a commercial fruit crop in arid and semi-arid areas because of its wider adaptability to soil and climatic conditions. It has emerged as one of the successful fruit crops that can be grown on wastelands (Raturi and Hiwale, 1988). In view of the above, a knowledge of the root distribution is very essential to assess the fertilizer and water requirement of the crop. Therefore, work on root distribution pattern of ber cv. Gola, grown under rainfed conditions, was carried out through excavation methods.

The experiment was carried out at Central Horticultural Experiment Station, Vejalpur farm on vegetatively propagated seven-year-old plants of ber cv. Gola grown under rainfed conditions. The soil of the

experimental plot is clay to clay loam with a pH of 7.9. The soil depth ranges from 0.75 m to 1.0 m, derived from mixed alluvium of basalt, quartzite, granite-gneiss and buried layer of limestone, and fall under semi-arid hot climate with little or no water surplus.

The average annual rainfall of the area is around 700 mm. The mean minimum and maximum temperature was 11°C and 45°C, respectively. The plants experienced moisture stress throughout the year except during rainy season.

Four 7-year-old budded ber trees of cultivar Gola were used for the studies. Complete roots were excavated by digging manually. Starting from tree trunk, the roots were taken out block by block, depth-wise at interval of 30 cm. All the roots excavated

Table 1. Soil characteristics of experimental site

Soil depth (cm)	O.C. (%)	E.C. (mmhos/cm)	Bulk density (g/cc)	Water retention		C.E.C.	E.S.P.	Sand (%)	Silt (%)	Clay (%)
				1/3 bar	15 bar					
0-13	0.55	0.09	1.54	27.1	15.2	34.6	5.8	51.4	13.0	35.6
13-31	0.53	0.08	1.33	23.0	10.6	36.0	5.6	51.0	12.5	36.6
31-63	0.43	0.09	1.33	19.9	13.2	35.8	5.6	50.5	10.0	39.5
63-83	0.25	0.05	1.49	25.6	13.7	40.0	5.0	48.9	10.0	41.1
83-112	0.22	0.16	1.49	24.9	13.0	40.6	4.9	48.4	10.0	41.6
112-113	0.21	0.12	1.46	24.0	12.2	33.4	5.9	57.5	7.0	

Available water holding capacity 14 cm for 100 cm depth.