
Pot Drip System for Tree Irrigation

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An article in the April 2001 issue of *Waterlines* describes an efficient and inexpensive watering system for trees, similar to the deep pipe irrigation described in the previous article. Some of the results in Table 2 may be of particular interest.

The system, called “pot drip,” was introduced by BAIF, a voluntary organization, in south Gujarat where water sources are 0.5 to 2 km away in the summer. The irrigation system was used to water newly planted mango grafts. Instead of direct watering, water was poured into four cylindrical clay pots installed around the plant. Pots were large enough to hold 1.5 L (0.4 gal), and each pot had a hole of 5 to 6 mm diameter at the bottom. In Gujarat, such pots sold for US\$0.16.

Pots need to be relocated each year because the plant canopy will spread. The authors wrote, “Water is poured into the pots regularly. Initially water gets absorbed into the soil immediately as the infiltration rate is high. But as the soil moisture increases, water in the pot is retained for two to six days depending on soil characteristics and climatic conditions.

During this two to six-day period, it slowly drips down and becomes available to the plant roots. If water drips down in a short time (i.e. less than a day) then the addition of soil in the pot will reduce the water flow, and if water stays for a longer period than five to six days then pots with more holes can be used.”

The pot drip system was studied between October 1997 and September 1998. Farmers on 20 plots used pot drip, while farmers on another 20 plots watered the plants directly. Each plot had 20 mango plants. The results clearly showed the beneficial growth and water-related impacts of pot drip (Tables 2 and 3, respectively). Plants watered with pot drip were taller, had a wider canopy, had more main and sub branches, and had more sproutings than those watered directly (Table 2). Plants watered using the pot drip method also used less water, took much less time to water, and as a result were watered more often (Table 3).

According to the article, “more than 3500 farmers have accepted the technology in the tribal areas of Dharampur.” Reference: Mahajan, S., P. Pednekar and S. Patel. 2001. Pot drip: an efficient low cost watering system. *Waterlines* 19(4): 26-28.

Table 2. Effect of pot drip on plant growth: a comparative analysis.

Type of watering system	Effect on growth-related parameters				
	Plant height (m)	Canopy (m)	Branches		Number of sproutings
			Main	Sub	
Directly watered	1.2-2.0	1.2-1.9	3-4	30-90	1-3
With pot drip	1.8-2.5	1.5-2.25	4-6	70-150	3-4

Table 3. Effect of pot drip on watering of plants: a comparative analysis.

Type of watering system	Effect on water-related parameters				
	Water requirement (l)	Watering time		Frequency of watering (number of waterings per month)	
		Days	Hours	Winter	Summer
Directly watered	300-600	1-2		2	3-4
With pot drip	100-200		2-4	2-3	4-5

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