

Improved Agrotechniques for Sugarcane under Drip System



Irrigation Management is critical to Cane production. In Gujrat, Karnataka, Maharashtra, Orissa and Tamilnadu 100% area under cane is irrigated, and these states together account for only 27.6% cane production. With receding water availability levels irrigating cane will be increasingly difficult using traditional irrigation methods. Drip Irrigation would allow increasing irrigation cover with the existing available water.

Status

India is the world's largest producer of sugar and sugarcane. Sugar is a Rs. 30,000 Crore industry with about 3.5 crore farmers engaged in Sugarcane Cultivation. It is cultivated in about 4.09 million ha producing about 283 million tonnes; however the average yield is only 69 t/ha., mainly because of traditional cultural practices followed by farmers. Besides this there are some reasons for lower yield

- i) Non availability of disease resistant cane variety
- ii) Increasing salinity in the soil because of the use of excess irrigation and fertilizers.
- iii) Scarcity of water

So with the help of drip irrigation system Sugarcane yield can be increased.

Advantages of Drip Irrigation System in Sugarcane farming :

In Maharashtra 10,000 Acres of Sugarcane area is under drip irrigation system and farmers observed following advantages;

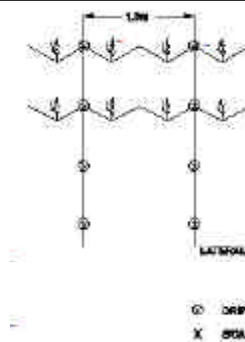
- i) Water saving 30 to 60%
- ii) Increase in yield from 20% to 40%.
- iii) Cost saving in land preparation; fertilizer and weed control.
- iv) Early maturity
- v) Maximum Tillering

Plantation of Sugarcane with Drip Irrigation System

A) Ridges and Furrow method :

This is a traditional system of Sugarcane plantation. In this method ridges and furrows are prepared at a distance of 2.5' to 3' depending upon the soil type. Drip line (Polytube) is provided on alternate ridges (Fig. 1)

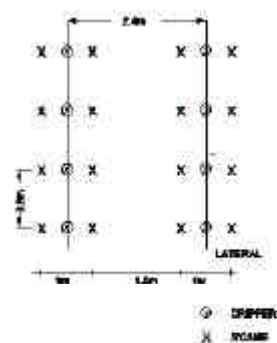
Fig1



B) Paired row plantation :

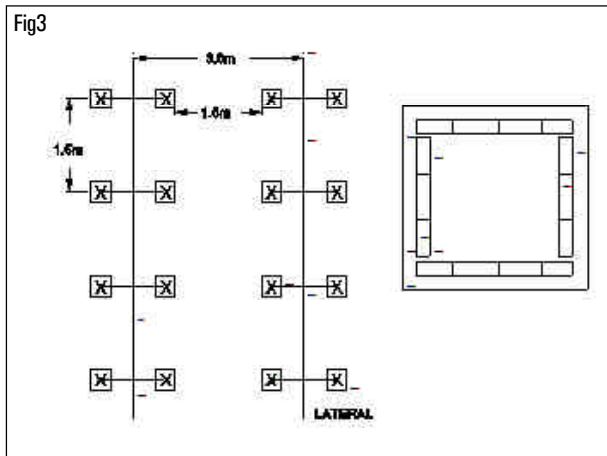
In this system, pair of two successive furrows are prepared and sugarcane is planted in these furrows. The next pair of furrows is prepared by keeping 4' to 5' gap between two successive pairs of furrows. (See Fig. 2)

Fig2



C) Pit method of plantation

Pits are dug at 1.5 m x 1.5 m distance and the laterals are placed in between two rows of pits maintained lateral to lateral distance of 3 m (Fig. 3). Sugarcane setts having 2 eye buds are planted in this pit.



All these methods are designed to reduce the cost of the drip irrigation system.

Types of Drip Systems used for Sugarcane

- Turbo key dripper having discharge at 4 Lph & placed at 75 cm or 90 cm apart on lateral.
- Jain Turboline : In this system drippers are built inside the polytube at various distances depending on soil type.

Soil

The soil range from black soils, red and lateritic soils to coastal alluvium. Sugarcane can be grown in well drained; medium loam soil. Soil rich in organic matter is best suited.

Time of Planting

Generally cane can be planted in three specific times

- January / February planting
- October Planting
- July Planting.

Fertilizer

Sugarcane is a heavy feeder of nutrients. It also gives good response to FYM & green manuring. Apply 30-40 cart load FYM per hectare between two rows in 90 cm furrow below polytube.

Disclaimer : As farming depends upon soil, weather and input conditions, Jain Irrigation Systems Ltd., cannot guarantee any specific yield of Sugarcane even if, all the above guidelines are followed in full or part.

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Following is the Fertilizer schedule recommended for Sugarcane.

Application Time	January Planting (Kg/Ha)			October Planting (Kg/Ha)			July Planting (Kg/Ha)		
	N	P	K	N	P	K	N	P	K
At Planting	25	57.5	57.5	34	85	85	40	85	85
After Planting	100	--	--	136	--	--	160	--	--
12-16 Weeks after planting	25	--	--	34	--	--	40	--	--
At earthing up	100	57.5	47.5	136	85	85	160	85	85
Total	250	115	115	340	170	170	400	170	170

Note : Above Fertilizer schedule is only a guideline, depending on soil analysis changes have to be made

Schedule of Irrigation :

Season	Lateral Spacing (m)	Water Requirement for running Length of 1m. (l/m)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
January Planting	1.8	4	6	8	10	12	8	6	6.5	9	11	11	10
	2.0	4.5	7	9	11.5	13	9	7	8	10.5	13	13	12
	2.4	5	8	10	13	15	10	8	9	12	15	15	15
October Planting	1.8	8	8	10	12	14	12	10	10	12	4	5	6
	2.1	8	10	12	14	16	14	12	12	14	5	6	6
	2.4	10	12	16	20	20	16	14	14	16	5	8	7
July Planting	1.8	2	2	3	7.5	3.5	3.5	4	4	11.5	12	12	6

Note : This irrigation schedule is only a guideline. Location to location variation in evaporation rate will have to be considered while deciding the rate of water application.

Earthing up

When Sugarcane is of 3-4 month age with the help of earthing-up, soil support is given to the cane to avoid lodging. Besides this, earthing up also helps in pruning of old roots. In case of drip irrigation system earthing-up can be possible only from outer side of the paired row. Breaking of ridges with the help of small plough where polytube is kept gives good result.

Harvesting of Sugarcane

Before 3-4 days of harvesting stop irrigation and collect laterals near to the Submain & then cut the cane at ground level. Collect the dried leaves 10-15 feet away from Submain and then burn it. The laterals of drip irrigation systems can thus be protected.

