

Precautions

- As DAP & MOP are semi-soluble, keep the solution for overnight for sedimentation
- Use the supernatant of the above solution for fertigation
- For easy injection of fertilizer solution, use 1 HP booster pump along with venturi
- Do not use super phosphate for fertigation

Maintenance of Drip System

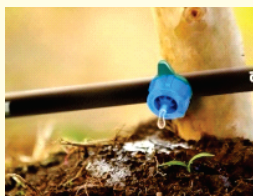
- Clean & wash filters once in 15 days
- Flush mains & laterals periodically
- Rectify the lateral leakages by using joiner
- Incase of any blockage in dripper, inject 0.6% HCL/H₂SO₄ or 2 ppm bleaching powder through drip system and wait for 24 hrs and then flush out the water.

Economics (acre/crop)

Particulars	Drip fertigation	Flood irrigation
N:P ₂ O ₅ :K ₂ O (kg)	21:8.4:8.4	28:11.2:11.2
Fertilizer Cost (Rs.)	2776	4502
Labour Cost (Rs.)	11934	16707
Other Costs (Rs.)	3600	3600
Annual Drip Cost (Rs.)	1769	NIL
Total Cost (Rs.)	20079	24809
Leaf Yield (kg)	4457	3720
Leaf production (Rs.)	4.51/kg	6.67/kg
Leaf selling/kg (Rs.)	8	8
Gross Income (Rs.)	35656	29760
B:C Ratio	1.78:1	1.20:1

Advantages

- Increases the leaf yield about 21%
- Saves water about 24% and fertilizer by 25%
- Saves labour by 28%
- Improves water use efficiency by 70%
- Improves nutrient use efficiency by 66%
- Reduces the production cost by 32%
- Reduces the chemical fertilizer load in the mulberry garden around 538 kg/acre/yr
- Maintains leaf moisture content (80-82%)
- Improves leaf qualities
- Saves time & energy
- Precise application of water/fertilizers
- Lesser weed competition
- Minimizes nutrient losses



Online drip








Inline drip

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Drip Fertigation for Mulberry Cultivation



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Introduction

Majority of the farmers in mulberry cultivation are adopting the surface irrigation with soil application of fertilizers. This practice leads to loss of water and nutrient through various process *viz.* evaporation, leaching, volatilization, *etc.*, therefore, all the plants may not able get adequate water and nutrients. Further, the one time application of fertilizers during crop schedule will not ensure the availability of nutrients in proportionate with the growth of the plant. To overcome those demerits, a drip fertigation technology has been developed.

Drip fertigation

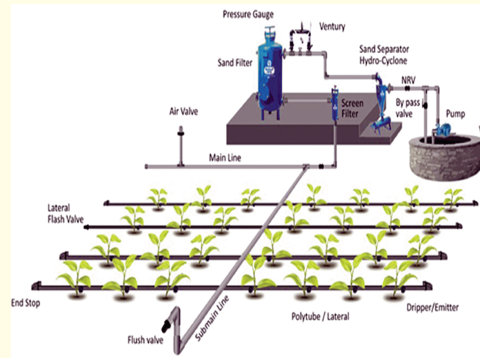
Drip fertigation is the method in which the fertilizers are applied through drip irrigation system. It is an efficient water and nutrient management technique because it facilitate the entry of water and nutrients directly to the active root zone. Thus, every plant is able to receive the required amount of water and nutrients at regular intervals.

Components (for one acre)

- 2" Bypass valve (1 no.), 2" Hydro cyclone filter (1 no.), 2" Disc/Screen filter (1 no.), 3/4" Venturi (1 no.), Pressure gauge (1 no.) & Air release valve (1 no.)
- 75 mm PVC main line (25 m) & 63 mm sub mainline (80 m)
- 16 mm size of laterals - 3000 m for II spacing and 2000 m for wider spacing. 100 nos each of Connector, Rubber cromate & Take off
- Flush valve (2 nos), Control valve (3 nos), End cap (100 nos) & PVC fittings

Selection of lateral

- Use inline drip laterals (16 mm) for low bush plantations with spacing of 2' x 2', 3' x 3' & (5'+3') x 2')
- Use online drip laterals (16 mm) for high bush plantation with wider spacing's (6' x 6', 8' x 4', 8' x 8' & above)
- Select inline dripper with discharge rate 3 lph for low bush, 8 lph for medium bush and 16 lph for high bush plantations



Schedule of drip irrigation

- Follow alternate day irrigation in red soils and once in 3 days for clay soils.

Fertigation procedure

- Before starting the fertigation, irrigate the mulberry garden for one hour
- Selection of fertilizers: Ammonium Sulphate (AS), DAP & MOP
- Dose: NPK @ 21:8.4:8.4 kg/ac/crop in 6 splits as detailed in the table.



Fertigation through Venturi

Fertigation Schedule (acre/crop)

After pruning	AS (kg)	DAP (kg)	MOP (kg)
15 th Day	6.9	6.8	1.7
22 nd day	6.9	6.8	1.7
29 th day	24.2	2.9	1.7
36 th day	24.2	2.9	1.7
42 nd day	13.1	0	3.5
49 th day	13.1	0	3.5
Total	88.4	19.4	13.8

- Application: After dissolving the fertilizer in water (1:10 ratio), the solution to be applied through venturi
- Complete the injection of fertilizers within 20 minutes
- After fertigation, irrigate the garden once again for 10 minutes

