



## Effect of micro-sprinkler system on input use efficiency, labour cost and economic viability in tobacco (*Nicotiana tabacum*) seedling production

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### ABSTRACT

To improve the water and nutrient use efficiency and also to reduce the labour cost in tobacco (*Nicotiana tabacum* L.) nursery raising, experiment on micro sprinklers for tobacco nurseries was conducted at CTRI Nursery block, Rajahmundry, Andhra Pradesh during 2007 and 2008. From the results of the experiment, it is concluded that the optimum spacing between laterals is 2.5-3.0 m and the spacing between micro sprinklers is 2.5–3.0 m and for this spacing 4 sprinklers are required for irrigating two tobacco nursery beds. The micro sprinkler system saves 24% and 35% of irrigation water at nursery bed level and at total system level respectively in comparison to rose can watering system. Micro sprinklers increases the N, P, K concentrations of the total plant to an extent of 14%, 10%, 11% and uptake per unit area to an extent of 50%, 45%, 47% respectively over the rose can watering. Micro sprinklers increases the weight, height, root volume and number of transplantable seedlings by 19%, 16%, 31%, 18% respectively over the rose can watering. Installing micro sprinkler irrigation system saves an amount of ₹ 60 000/ha towards labour. Micro sprinkler system is an economically viable alternate to rose can watering and gives net present worth of ₹ 94 265/ha/year with a benefit cost ratio of 2.37 at 2011 prices.