

Study on performance of venture injector under different inlet and outlet pressure for banana plantation

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■ **ABSTRACT** : Optimum and efficient use of fertilizers is one of the major advantages of drip irrigation systems. Success of micro irrigation system lies in precise application of fertilizers. The investigation was carried out to study the performance of ventury injector manufactured by Jain Irrigation Systems Ltd. under normal field conditions, near Talsande village of the Kolhapur district of Maharashtra state. The different pressure combinations were maintained at upstream and downstream side of the ventury injector. The different inlet pressures of 1.0, 1.2, 1.4, 1.6, 1.8 and 2.0 kg/cm² were selected with different outlet pressure combinations of 0.1, 0.3 and 0.5 at the outlet of the ventury injector. Injection rate and injection efficiency were calculated for different varying inlet and outlet pressure combinations using relationship suggested by manufacturer of the ventury injector. The maximum injection rate in case of ventury (74 lps) was achieved at inlet pressure of 1.8 kg/cm² and outlet pressure of 0.1 kg/cm² with pressure differential of 1.7 kg/cm². Injection efficiency of ventury was observed maximum at 95 per cent at 2 kg/cm² inlet pressure and 0.1 kg/cm² outlet pressure followed by 94.4 per cent at 1.8 kg/cm² inlet pressure and 0.1 kg/cm² outlet pressure and 94 per cent at 1.6 kg/cm² inlet pressure and 0.1 kg/cm² outlet pressure.

■ **KEY WORDS** : Application of fertilizers, Ventury injector, Injection rate, Injection efficiency

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