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## Evaluation of impact of chemical treatment on clogged drip irrigation system

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S.P. Nikam Department of Agricultural Engineering, College of Agriculture, Dhule (M.S.) India Email : spnikma74@ gmail.com ■ ABSTRACT : The experiment was conducted on farmer's field at Vivare, Tal-Raver, dist-Jalgaon to study the impact of chemical treatments on clogged drip irrigation system. Total 27 laterals of 12mm diameter having length 25 meters each, on which 20 clogged emitters of 41 ph discharge were mounted at a spacing of 1.25 m. The discharge of 10 emitters from each lateral was measured at a pressure of 1 kg/cm<sup>2</sup> for 5 minutes before treatment. The three types of acid that is hydrochloric acid (35 % conc.), sulphuric acid (98% conc.) and nitric acid (60% conc.) were used for acid treatment. The acid treatment was given at different pH levels viz., 3, 3.5 and 4 pH.It was found that when the pH of water was greater than 7.0, precipitation of salts occurred in the drippers. The water having electrical conductivity 1.45 mmhos/cm when passed through the drip system, most of emitters were clogged. The uniformity co-efficient of drip system before and after acid treatment was 84.03 per cent and 96.20 per cent, respectively. The average percentage reductions in discharge of clogged emitters were observed in between 42.5 per cent to 45 per cent. The average percentage increased in discharge was observed 68.18 per cent when clogged emitter was treated with HC1 (35% cone.) having 3 pH cone. The best chemical treatment of hydrochloric acid (35% cone.) having 3 pH was more effective to water having electrical conductivity 1.45 mmhos/cm for obtaining maximum discharge.

■ KEY WORDS : Drip irrigation, Clogging, Chemical treatment, Uniformity co-efficient

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