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Field performance evaluation of micro irrigation systems in Iran

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The efforts to introduce the micro irrigation system in Iran go back as far as the year 1990. The area under micro irrigation system in Iran covers about 400 000 ha and it is estimated to double (800 000 ha) during the next five years. The field performance of micro irrigation systems was studied in ten Iranian sites. Physical, chemical, and biological analyses of water samples derived from each site included pH, electrical conductivity (EC), total suspended solids (TSS), total dissolved solids (TDS), Fe, Mn, Mg, Ca, and bacterial number (BN). In this study relative emitter discharge (R), percentage of completely clogged emitters (P_{clog}), emission uniformity (EU), absolute uniformity emission (EU_a), statistical uniformity (Us), coefficient of variation due to emitter performance in the field (V_{pf}), and sector emission uniformity (EUs) were evaluated. Results showed that performance of micro irrigation systems in Iran is low and poor. Average EU, Us, and V_{pf} values in different sites were 52.8, 61.3, and 38.2%, respectively. Most frequent problems detected in irrigation units were: inadequate working pressure, emitters clogging, and lacking farmers' training.

Keywords:

emitter clogging; emission uniformity; statistical uniformity

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