ASAE EP405.1 APR1988 (R2019) Design and Installation of Microirrigation Systems



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## ASAE EP405.1 APR1988 (R2019)

## **Design and Installation of Microirrigation Systems**

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## 1 Purpose and Scope

**1.1** The purpose of this Engineering Practice is to establish minimum recommendations for the design, installation and performance of microirrigation systems: including trickle, drip, subsurface, bubbler and spray irrigation systems. This Engineering Practice should encourage sound system design and operation and enhance communication among involved personnel.

**1.2** Provisions of this Engineering Practice are primarily those that affect the adequacy and uniformity of water application, filtration requirements, water treatment, and water amendments.

## 2 Definitions

**2.1 chemical water treatment:** Chemical treatment of the water to make it acceptable for use in microirrigation systems. This may include acids, fungicides and bactericides used to prevent emitter clogging or used for pH adjustment.

**2.2** control station: The control station may include facilities for water measurement, filtration, treatment, addition of amendments, flow and pressure control, timing of application and backflow prevention.

**2.3 crop area:** The field surface area allocated to each plant. In tree crops the tree crop area is the spacing multiplied by the row spacing.

2.4 design area: The specific land area which is to be irrigated by the microirrigation system.

**2.5 design emission uniformity:** An estimate of the uniformity of emitter discharge rates throughout the system, as described by the equation in paragraph 3.5.2.

**2.6** emitters: The devices used to control the discharge from the lateral lines at discrete or continuous points.

**2.6.1 emission point:** Point where the water is discharged from an emitter.

**2.6.2 line-source emitters:** Water is discharged from closely spaced perforations, emitters or a porous wall along the lateral line.

**2.6.3** point-source emitters: Water is discharged from emission points that are individually and relatively widely spaced, usually over 1 m (3.3 ft). Multiple-outlet emitters discharge water at two or more emission points.