

DIY Measured Irrigation

more crop per drop



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November 2024

Introduction to measured irrigation (MI)

Definition of measured irrigation

Measured irrigation is an irrigation scheduling method that satisfies the following two conditions:

1. Variations in the water usage throughout the year are controlled by the prevailing net evaporation rate (evaporation minus rainfall).
2. The volume of water discharged by each emitter during an irrigation event is controlled directly without the need to control the flow rate or the duration of the irrigation event.

Many smallholders use gravity feed drip irrigation to irrigate a small garden (less than an acre). The most commonly used scheduling method is programmed scheduling and this method wastes a lot of water because it does not respond to the prevailing weather conditions. By upgrading from programmed irrigation scheduling to measured irrigation scheduling, water usage may be reduced by 50% or more without affecting the yield. The cost of the upgrade is negligible, namely the cost of a suitable container.

Installing DIY measured irrigation

It is assumed that a smallholder is using drip irrigation on a garden or a small plot of land.

To install manual measured irrigation, all that is needed is a suitable container as an evaporator.

The **evaporator** is any container with vertical sides, with a surface area of approximately 0.1 m².

Step 1. Draw a level line on the inside of the evaporator about 1.5 cm below the overflow level. Fill the evaporator with water up to the level line.

Step 2. Position a single irrigation dripper so that it drips water into the evaporator during the irrigation.



Step 3. Place a measuring container under one of the irrigation drippers.



Step 4. The water level goes down as water evaporates from the evaporator. During the irrigation event, the single irrigation dripper above the evaporator replaces the water that has evaporated since the previous irrigation event. Stop the irrigation when the water level has returned to the level line. The amount of water in the measuring container is the amount of water discharged by each dripper during the irrigation event. To minimise evaporation it is recommended that you irrigate after sunset.

Step 5. To increase the amount of water discharged by each dripper during the irrigation event, use an evaporator with a larger surface area. To decrease the amount of water discharged by each dripper during the irrigation event, use an evaporator with a smaller surface area.