

Water for Profit

CATCH CAN TRIALS – DRIP AND MICRO-SPRINKLER SYSTEMS



WATERFORPROFIT

Catch can tests are commonly used to measure the uniformity of discharge (i.e. evenness of application) along drip and micro-sprinkler lines and across the field.

Introduction

These tests are used to identify any unevenness due to system design or installation. They can also be used to identify changes in performance due to poor maintenance or age of the system.

The catch cans used in this type of trial are commonly ice-cream or similar containers. Ensure that all containers used have the same sized opening. Measuring cylinders are commonly used to measure the volumes caught in the containers.

Container layout

Use a minimum of four laterals in a block spaced evenly along the manifold that are controlled by one valve.

For drip systems, place the containers under each emitter along the lateral. Tie wire around the lateral either side of the emitter to stop water running down the drip line and not into the container. Be careful not to restrict flow through the drip line. Run the irrigation for a set period of time (half an hour is normally enough) and collect the water in the catch cans. The volume of water in each container is measured with a measuring cylinder and converted into an hourly discharge rate.

For micro-sprinkler systems, place the head of the micro-sprinkler into the measuring cylinder and catch the entire discharge. Time how long it takes to fill the cylinder. Do this for each micro-sprinkler along a lateral. Convert this measurement into an hourly discharge rate.

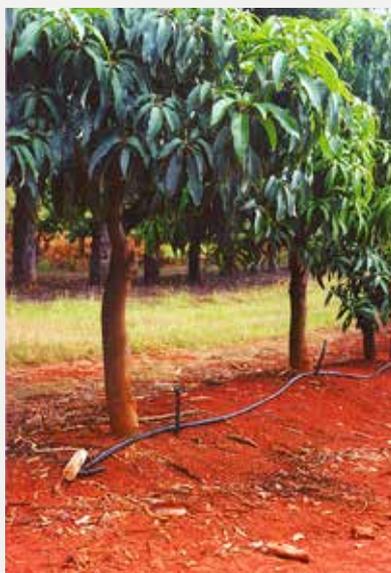
Example: discharge rate calculation

Assume the drip irrigation system was running for half an hour and 2300 ml was measured in a container.

This means 2300 mL (2.3L) per half hour was discharged from the emitter. Therefore, the discharge rate is equal to $2300 \text{ mL} \div 0.5 \text{ hours} = 4600 \text{ mL/hour}$ or 4.6 L/hr.

This information can then be used to calculate distribution uniformity (DU). Drip and micro-sprinkler systems are capable of DU values in excess of 90 per cent. DU values below this indicate that there are problems with the design and/or maintenance of the system.

For more details contact Growcom on 07 3620 3844.



Disclaimer: This information is provided as a reference tool only. Seek professional advice for irrigation specifics.

A Growcom project conducted in collaboration with the Queensland Department of Agriculture, Fisheries and Forestry and the National Centre for Engineering in Agriculture with funding provided by the Queensland Government's Rural Water Use Efficiency Initiative.



Queensland Government

