Information Sheet

IS13022

Irrigation scheduling with mini pans

Evaporation mini pans are an inexpensive and effective irrigation scheduling tool. Crop growth is recorded against evaporation to determine the trigger point for irrigation. Calibrating is easy, but to be effective all blocks and varieties need to be done individually.

This type of irrigation scheduling cannot be used until the crop starts to develop cane.

Making a mini pan

Take a large bucket or drum and cut a V at the top of the bucket. Glue a ruler into the drum with 0 placed at the bottom of the V.

Selecting the site

- The crop should be near full canopy and actively growing.
- The monitoring site should be at least 5-8 rows from the edge and 2-3m into the paddock.
- Select 25 main stalks, 12 stalks on one side and 13 on the other side. Mark each stalk with flagging tape and place bottle lids at the base of the stalk (this provides a fixed base for measuring). Number each stalk so that there is a reference for recording.

Using the mini pan

- Place the mini pan in an open location close to the paddock that it will be used to schedule. Ensure that the crop or trees will not shade the mini pan and that animals can't drink out of it.
- After irrigation is complete fill the mini pan.
- Commence stalk measurements. Measure each day, making sure it is at the same time. Take the stalk and measure from the ground to top visible dewlap (see the image to the right). If the tape measure is hard to use attach it to a piece of conduit or something similar.
- Record the stalk measurements (**Table 1**). Add these readings together and divide by 25 to give the average growth for the day. Also take the mini pan reading.
- The irrigation trigger point is when the average growth reduces to below 50% of the maximum recorded for two or more days. In **Table 1** this would be on December 19.
- Mark on your evaporation mini pan the water level at your trigger point.
- Refill mini pan after irrigation. When the mini pan evaporates and reaches the mark it is time to irrigate again.

Table 1: Mini pan recording sheet.

Date	12.12	13.12	14.12		18.12	19.12
Stalk #	mm	mm	mm		mm	mm
1	1730	1760	1780		1850	1860
2	158	1600	1620		1670	1680
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25	1850	1870	1880		1900	1920
Average	1834	1856	1877		1942	1950
Difference		23	21		9	7

Crop growth can stall for a number of reasons not just due to water stress. When recording crop growth it is especially important to note any weather changes. To avoid having a biased calibration it is best to complete the stalk measurements over more than one irrigation event.

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