Cotton Catchment Communities CRC
Queensland Government Department of Primary Industries and Fisheries

COTTON TALES

Border Rivers

Rod Gordon Regional Development Extension Officer 07 46716711
Emma Brotherton Development Extension Officer RWUE3

2006/07
14.
17/07/07

Benchmarking Workshop

Friday 20th July 2007

2pm @ DPI&F Goondiwindi
*Light refreshments will be provided

For further information or to RSVP please contact Emma Brotherton 0408703783.

Dry Storage Management

Did you know when you first fill your storage after it's been dry, you can lose in excess of 2 ½ ML/ha of storage floor? Recently the Irrigation Association of Australia (IAA) and ANCID held a seepage symposium and field day on the 28th & 29th May. One interesting point of discussion was management of dry storages. The key recommendation from the IAA is to *manage your storage the same way as you would manage a dryland field*. You want to conserve moisture and reduce cracking. Therefore weed control is important. In fact, you don't want any plant growth. Growing a crop in your storage can cause significant drying and cracking in both the embankment and the floor and subsequent loss of valuable irrigation water. If the storage soil surface is allowed to dry and crack, soil evaporation losses increase and significant amounts of water can be lost as it runs down the cracks and the dry soil soaks up the water. The IAA suggests that in excess of 2 ½ megs of water per hectare can be lost.

While your storage is dry it is a good time to survey it and obtain an accurate depth-to-volume and surface area relationship. Often the storage was not accurately built to the "design" and actual volumes can differ by up to 20%. Over time, with a build up of silt and slumping of dam walls, the dimensions of your storage will change as well. Ideally a storage survey should be re-done after any remedial construction work on the banks or any other changes to the floor or borrow areas. Additionally, it is worth considering doing an EM survey at the same time to differentiate the soil types within the storage.

While your storage is dry your local surveyor can easily survey your storage. If you have access to GPS/Beeline you can survey your storage yourself and send the data into your local surveyor or engineering consultant for processing. To do this, drive in at least 2 pegs at ground level located near an inlet/outlet point as reference points or bench marks. It is necessary to drive back over these points several times during the survey to establish a good level as a permanent reference height.

It is also an ideal time to install a gauge board or for greater accuracy you could set up a permanent storage meter. One that is readily available is the Irrimate™ Storage Meter which consists of a pressure sensor that has an accuracy of ±10mm. It's easy to install and continuously measures and records storage volume and water surface area. Knowing exactly how much water you have gives you the ability to fine tune its use and assist with water budgets. Storage meters can also be used to get an accurate measurement of the amount of tail water and stormwater you recover and can be used to check pump capacity when pumping directly into your storage.

Once we receive some significant rain in our catchments, care needs to be taken when filling a storage that has been dry for some time. To avoid potential problems such as erosion and blow outs, dry storages should be filled slowly. If possible, the filling rate should be no more than 300 mm of water a day, and preferably less than 100mm a day (Cotton Waterpak Section 2.7, pg 64).

For further information contact Janelle Montgomery Cotton Catchment Communities Water Team Member 02 67525111