

METHOD TO DETERMINE WATER HOLDING CAPACITY (CONTAINER CAPACITY)

When a crop is grown in soilless media in a pot/container, the maximum amount of water held in that media/container against gravity may be determined by the following method:

This measurement is useful when:

- A. Irrigating the crop to ensure that moisture deficit is replenished completely. In practice applied irrigation should restore moisture deficit plus 10% to ensure complete restoration. The precise run time of any given irrigation system will be ascertained by practical trial. Moisture deficit restoration is calculated by measuring the weight difference between fresh mix, when made or as delivered, and the same volume of mix at container capacity.**
- B. Re-engineering the media to achieve more, or less, water holding capacity/air fill porosity.**

Method:

1. Select a container/pot typical of those used in the crop production.
2. Level fill a pot with fresh media. Do not compress the contents of the pot. Achieve a level by gently tapping the filled pot on a hard surface.
3. Weigh the pot and all. Record this weight.
4. Place the filled pot into a part full bucket of water. The water should only come up to about half the full height of the pot.
5. Allow the water to soak up into the pot full of media.
Be careful not to allow any media to float off the top of the filled pot.
6. When the top of the media in the pot is fully wet carefully remove the pot from the bucket.
7. Allow it to stand on a draining surface for 5 minutes.
8. Weigh the pot and all. Record this weight.

The difference between the wet weight (ww) and the dry weight (dw) = the weight of water held in that pot/media at container capacity.

Convert the weight of water into volume. (w/v) 1g=1ml or 1 kg = 1Lt. may give an indication of the water holding capacity (WHC) for that pot/media combination.

Further extrapolation and calculation may give the air fill porosity (AFP). Water occupies the air spaces between particles in the media. When at container capacity, the volume of water held in the pot may be expressed as a percentage of the total pot volume.

For more information and interpretation of your results:

Contact McHort on 021 782 250 or email info@mchort.co.nz

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