

## IRRIGATION SCHEDULING BY THE ✓ ACCOUNTING METHOD.

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Irrigation scheduling is a technique for management of irrigation operations to achieve maximum practical irrigation efficiency. Scheduling determines the interval between two irrigations and the amount of water to be applied to maintain Soil Moisture level within required limits.

### Advantages of Irrigation Scheduling:

1. Provides a guide to water management.
2. Reduces -
  - (i) Surface runoff.
  - (ii) Deep percolation losses.
  - (iii) Leaching of nutrients.
3. Prevents water logging.
4. Increases the crop yield

To schedule an irrigation following two questions must be answered.

- (i) When to irrigate ?
- (ii) How much water to apply ?

We need to know two basic factors to determine the date of next irrigation and the amount of water we should apply. They are :

1. The amount of soil moisture available for the crop use depending on the allowable soil moisture depletion level.
2. The rate, the crop is using water or evapotranspiration rate ( $E_t$ ).

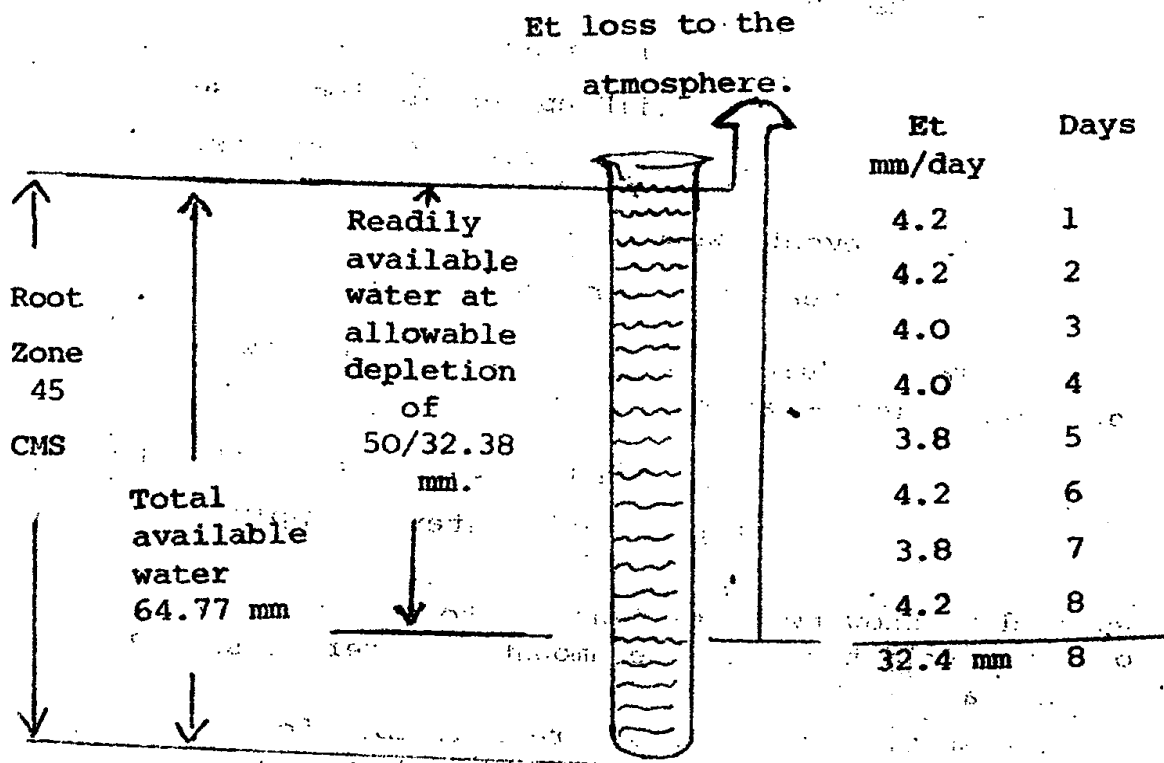
When we know, how much available moisture is in the soil and daily evapotranspiration rate, scheduling of irrigation becomes a simple accounting system. It can be compared to a bank accounting

system. Irrigation and rainfall can be considered as deposits, and evapotranspiration loss as withdrawals. There are two major items that must be known before starting the scheduling.

The first step is to determine the available water of the soil in the rootzone of the crop being grown. The soil moisture should be replenished when allowable soil moisture depletion level is reached. Generally this limit is 50% of the total available water.

The second is to determine the estimated evapotranspiration loss for the crop to be grown using the planned planting dates.

The starting point for scheduling is after a thorough wetting of the soil by irrigation or rains which bring the soil reservoir to field capacity. Daily quantities of Et are then subtracted until the soil water has been reduced to the allowable depletion level. At that point an irrigation should be applied with a net amount equivalent to the accumulated evapotranspiration losses since the last irrigation. The soil reservoir is thus recharged to field capacity.



- IRRIGATE** - 1. When ? ..... after 8 days.  
 2. How much ? 32.4 mm of water + losses.