**Course: Water Management in Horticultural Crops 2(1+1),**

**Class: 1st year, 2nd semester**

**Topic: Moisture Extraction Pattern of Plant Roots in Soil**

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**Moisture Extraction Pattern of Plant Roots in Soil**

The moisture extraction pattern reveals about how the moisture is extracted and how much quantity is extracted at different soil depth level by the plant root zone. The moisture extraction pattern shows the relative amount of moisture extracted from different depths within the crop root zone. This moisture extraction pattern is of the plants growing in a uniform soil without restrictive layers and with adequate supply of available soil moisture throughout the root zone.

1. For most plants, concentration of absorbing roots is greatest in upper part of the root zone and near the base of plants.

1. Extraction of water is most rapid in the zone of greatest root concentration and under favorable environmental conditions.
2. Usual moisture extraction pattern shows that about 40 per cent of the extracted moisture comes from upper quarter of the root zone, 30 per cent from second quarter, 20 per cent from third quarter and 10 per cent from fourth bottom quarter.
3. This general pattern of extraction slightly varies with irrigation frequency.
4. With higher the frequency of irrigation, the moisture extraction is greater from first quarter of the root zone than the others.
5. Low frequency irrigation leading to depleting soil moisture results in more moisture extraction from lower quarter of the root zone soil depth.
6. This indicates that in most of the crops the effective root zone will be available in the 1st quarter and it does not mean that the last quarter will not need any water.
7. Soil moisture pattern is useful to estimate the soil moisture status and to work out the irrigation quantity is to be applied.

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**Soil Moisture Extraction Pattern**