

Course: Water Management in Horticultural Crops 2(1+1),
Class: 1st year, 2nd semester
Topic: Effect of Water Application on Yield of Horticultural Crops
Prepared by: Dr. Vikas Gupta, College of Horticulture, Rehli

Effect of Water Application on Yield of Horticultural Crops

Application of water plays vital role in the growth and yield of horticultural crops including vegetables and fruit crop etc. Availability of sufficient water in time increases the crop yield many folds.

The vegetable crops are mostly annuals and their duration extends from two to five months or a single season. The vegetable crops are sensitive to water stress. Vegetable crops need to maintain liquid phase continuity from soil water through its vascular system and all the way to evaporative sites in leaves. Vegetables contain large amount of water and the product qualities like tenderness, succulence, crispness and flavor are very much related to water supply at proper stages. In fact, texture of vegetables is determined by combination of tissue structure, cell wall properties and turgor pressure. The phenology of the growing plant can be characterized by vegetative, flowering, fruiting and other distinctive characteristics in vegetative stage like, curding in cauliflower, heading in cabbage and lettuce, bulbing in onion and garlic and tuberization in potato and sweet potato. During vegetative stage, consumptive use continues to increase till the end of this stage of growth and flowering occurs near and during the peak of consumptive use.

Fruit crops are mostly perennials. Some fruit crops like cherry, pomegranate, orange, banana lichi etc. needs more water while aonla, ber, bael, kaitha etc. needs comparatively less water. When an orchard is first

established, transpiration is very low because of the small crop canopy. Most water lost from the soil is by evapotranspiration from among the trees. With the increase in years the trees grow and a large canopy is established and water requirement increase accordingly. The water requirement is expressed for one year or daily basis.