

COMPUTATION OF WATER DEFICIT AND ARIDITY INDEX FOR THE PURVANCHAL

MANENDRA PRATAP VERMA

Professor, Department of Civil Engineering, SSITM Aligarh, Indra Nagar, Lucknow, Uttar Pradesh, India

ABSTRACT

The crop water requirement defers the quantity of water needed to meet the water losses through evapo-transpiration, potential evapo-transpiration, disease free under non-restricting soil conditions. The basic requirement of water is function of the soil moisture deficits as influenced by evapo-transpiration and soil and plant characteristics. Keeping this in view an experiment has been conducted to estimate the evapo-transpiration, potential evaporation and aridity index for the region of Faizabad distt. of Uttar Pradesh. Due to uneven and inadequate distribution pattern of rainfall in district, there is a need to computing the water deficit for planning of supplemental irrigation through which frequent failure of crops can be controlled, along-with to increase the water use efficiency under limited resources. The climatic data of 10 years (i.e. from 1999-2009) were recorded and analyzed by Thornthwait (1948) method to compute ets the water deficit. On the basis of data analyzed the result revealed that the average potential evapo-transpiration, evapo-transpiration, water deficit and aridity index were found to be 1572.60 mm, 24.74 mm, 8.08 cm, and 0.82 respectively.

KEYWORDS: Aridity Index; Water Deficit