



Impact Climate Change on Crop Water Requirement of Different Orchard Crops for Agro-Climatic Condition of Udaipur, Rajasthan

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Abstract: The study was carried out to evaluate the impacts of climate change (in term of daily weather parameters like temperature, humidity, wind speed and sunshine hours) on crop water requirement of different perennial orchard crop (citrus, papaya and guava) over period of five year (2014 to 2018) in climatic condition of Udaipur, Rajasthan. The results showed the significant impact of climate change on reference evapo-transpiration and rainfall patterns during year 2014 to 2018. The maximum annual ETo was found for year 2015 with a value of 1410 year⁻¹ whereas, annual rainfall was found to be maximum for year 2016 with a value of 747 mm year⁻¹. The minimum values of annual ETo and annual rainfall were for years 2017 (1259, mm year⁻¹) and 2018 (556 mm year⁻¹) respectively. The uneven trend of ETo and Rainfall for different year due to climate change. The average daily ETo was maximum for May during all year followed by June. The minimum average daily ETo was for December. The average daily ETc for citrus papaya and guava fruit crop varied from 2.8 to 3.2, 2.8 to 3.2 and 2.8 to 3.1 mm day⁻¹ respectively, during year 2014 to 2018. . The maximum crop water requirement for citrus, papaya and guava crop ranges from 27 to 30, 9 to 11 and 34 to 40 litre plant⁻¹ day⁻¹ during all five year. In this area spatial and temporal variability in normal rainfall pattern, atmospheric temperature and reference evapo-transpiration mainly occurs due to overall urbanization, pollution, deforestation, improper use of natural resources and intervention through mining activities, which results improper future planning for establishment of orchard crops.

Keywords: Climate change, Crop evapotranspiration, Crop water requirement, Citrus and papaya
