

WATER REQUIREMENT FOR DIFFERENT CROPS IN EAST & SOUTH EASTERN COASTAL PLAIN ZONE OF ODISHA

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ABSTRACT

A study was conducted at College of Agricultural Engineering and Technology, Odisha University of Agriculture and Technology, Bhubaneswar during 2014-15 to find out the water requirement of different crops grown in East & South Eastern Coastal Plain zone of Odisha, India. In India, a large population is facing challenges of water scarcity due to its huge population, diverse geographical, climatic and geo-environmental conditions along with an unequal distribution of freshwater resources. Therefore, efficient water management strategies are essential for meeting the increasing water demand of agricultural, domestic, industrial and environmental sectors. Agriculture is the backbone of India and it consumes around 60% of fresh water resource. So, it is essential to manage the water in the field of agriculture efficiently. Odisha is south eastern state of India having 480 km of coast to Bay of Bengal. Although, it receives a good amount of annual rainfall, the management of agriculture water in field is very poor due to insufficient knowledge of farmer about the water requirement of crops. In the present study, a small attempt was taken to estimate the crop water requirement for different major crops in east and south eastern coastal plain agro-climatic zone of Odisha by using local climate data and crop coefficients. The reference evapotranspiration of the study zone is estimated by using ten different empirical methods and screening of methods is done to estimate the reference crop evapotranspiration, close to FAO – 56 Penman-Monteith methods. Among all the methods, correction factor for Penman-Monteith and 1982 Kimberly-Penman methods approaches in similar path. The FAO-24 Penman ($c=1$), Turc and Priestly-Taylor methods give more diversion from FAO-56 Penman-Monteith method.

KEYWORDS: Reference Evapotranspiration, Water Requirement, East & South Eastern Coastal Plain

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