

WATER REQUIREMENT FOR DIFFERENT CROPS IN NORTH EASTERN GHAT ZONE OF ODISHA

Mohanty Anita¹, Subudhi C.R² & R.Subudhi³

¹*Research Scholar, CAET, OUAT, Bhubaneswar, Odisha, India*

²*Professor, Department of SWCE, CAET, OUAT, Bhubaneswar, Odisha, India*

³*Research Scholar, Department of SWCE, CAET, OUAT, Bhubaneswar, Odisha, India*

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ABSTRACT

Water plays a vital role in every living being, and would become a scarce natural resource in the near future. India, with a large population is now facing unique challenges of water scarcity due to its diverse geographical, climatic and geo-environmental conditions apart from unequal distribution of freshwater resources. Therefore, efficient and effective water management strategies are needed for meeting the increasing water demand in agricultural, domestic, industrial and environmental sectors. Agriculture is the one of the most important sectors, which consumes highest percentage of fresh water resource. So, proper water management strategies are highly essential in agriculture sector to mitigate the water shortage in near future. Keeping the above in view, a small 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 North Eastern Ghat zones of Odisha, India. The reference evapotranspiration of the study zone is estimated by using ten different empirical methods. Screening of methods is done to estimate reference crop evapotranspiration close to FAO – 56 Penman-Monteith method. The crop water requirement for major crops grown in this zone is assessed for all the seasons. Among all the methods, the Penman-Monteith and 1982 Kimberly-Penman methods approach to FAO-56 Penman-Monteith method for the zone. The FAO-24 Penman (c=1), Turc and Priestly-Taylor methods give more diversion from FAO-56 Penman-Monteith method. Knowing the proper water requirement for the crops may encourage managing the agricultural water, effectively.

KEYWORDS: *Water Requirement, Crops in North Eastern Ghat, Zone of Odisha*