

**RESEARCH ARTICLE**

# Estimation of rainstorm kinetic energy for Ambikapur Chhattisgarh

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**ABSTRACT**

The kinetic energy of rainstorm plays an important role in runoff and erosion process. Knowledge of relationship between rainfall intensity and kinetic energy and its variations in time and space is important for erosion prediction. Rainstorm kinetic energy, as a function of the mass and terminal velocity of raindrops has often been suggested as an ability of rainfall to detach soil particles. Therefore, this study was carried out to evaluate the variability of rainfall and its kinetic energy for Ambikapur. Time of occurrence of rainfall, rainfall amount, intensity and kinetic energy were evaluated. Kinetic energy was estimated with Zanchi and Torri's equation and by Marshal and Palmer's equation of kinetic energy. Among four rainy months, maximum rainfall amount of 222.94 mm was observed for the month of August and lowest rainfall amount of 92.64 mm was observed for June. Kinetic energy by both the models was found to be maximum for July with K.E-1 as 38.71 MJ/ha, K.E-2 as 43.20 MJ/ha and for August K.E-1 as 39.33 MJ/ha and K.E-2 as 42.88 MJ/ha, respectively. For rest of the months *i.e.* for September and June kinetic energy was in decreasing trend. Co-efficient of determination for monthly variation of kinetic energy was found to be  $R^2 = 0.965$ .

**KEY WORDS** : Kinetic energy of rainfall, Rainfall intensity

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