ABSTRACT

The purpose of this study is to assess the Jaipur district's land suitability for growing millet crops. Bivariate statistical methods such as frequency ratio and entropy index models are used to perform the land suitability. Having an impact on variables like height, slope, topsoil depth, bulk density, Cation Exchange Capacity (CEC), soil type, pH, nitrogen, organic carbon content (OCC), stream density, rainfall, Land Use Land Cover (LULC), Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI), groundwater level, soil type, and distance from the road and river were all taken into consideration. According to the estimated results, the study district has five divisions suitable land for millet cultivation, Very High, High, Moderate, Low, Very Low. The bivariate strategies such as frequency ratio (0.734) and entropy index (0.724) are extremely successful ways for site selection for vegetable farming in the study region, according to the results of models validated using the ROC curve. The most important variables that affect the result are soil, rainfall, groundwater level, nitrogen, and distance from Roads.

Keywords: Land suitability, millet crop, Analytic Hierarchy Process (AHP), Bivariate techniques, GIS.