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RESEARCH ARTICLE

Assessment of diversity indices and rank abundance curve for herbaceous community of Junaghad district of Saurashtra

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SUMMARY

This Research was aimed at studying diversity indices and plotting a Rank Abundance Curve for herbaceous plant community at Kapuriyavadi area located in Junagadh District of Saurashtra region. The study was conducted from July to September 2021-22. Five quadrats of 1mx1m size were randomly laid down in the study area in such a way that they include maximum vegetation cover. Total number of individuals of each plant species, Rank abundance curve and Simpsons and Shannon-Wiener indices were calculated. A total of 33 plant species were identified and listed.*Brachiariasp.Cyanodondactylon* and *Phyllanthus niruri*recorded more number of individual of species than the other species in the area, *Brachiaria sp.* being maximum (63 individuals) followed by *C. dactylon (58) and P. niruri*(47 individuals).Simpson's and Shannon diversiy indices were then calculated for the plant community under investigation. The values were found to be 0.082 and 2.861 for Simpson's and Shannon-Weiner respectively. To overcome shortcomings of these indices, Rank Abundance Curve to display relative species abundance was plotted for the community. The species richness was found to be maximum for *Brachiaria sp.* whereas the lowest were recorded for *Xanthium strumarium, Calotropis procera, Sesamum sp., Trichodesma indicum, Boeerhaviaerecta and Cardiospermum halicacabum. Brachiarasps.* was investigated to be the highest ranking species that have much higher abundance as compared to other species in the area. *Xanthium strumarium, Calotropis procera, Sesamum sp., Trichodesma indicum, Boeerhaviaerecta*and *Cardiospermum halicacabum*were found to be lower raking spp. with much lower abundances. A steep gradient of the curve obtained for Rank Abundance indicated low evenness in the community since the high ranking species have much higher abundances than the low ranking species. Descriptive statistics followed by statistical test was applied to understand the variation in biodiversity indices within all quadrates.

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Key Words : Herbaceous communities, Simpson's index, Shannon-wiener index, Speciesrichness, Species evenness, Rank abundance curve

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