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Structural Analysis of Rosette Desert Scrub in Northeast Mexico

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Abstract

Ecosystems in arid and semiarid regions of Mexico like the desert scrub rosette (MDR) are highly diverse, and one of the most abundant, most widely and historically more used. It has been studied earlier, but the available information is almost nonexistent, therefore its richness and diversity of its natural resources is unknown. In the absence of studies related to these ecosystems, the present research examined the differences in vegetation, composition and structure of two areas of desert scrub rosette, a valley and a hill. In each area were estimated ecological indicators of abundance (Ar), dominance (Dr), frequency (Fr) and importance value index (IVI). The index of Shannon & Wiener (H') to estimate the diversity and Margalef index (Da) to estimate species richness were used also. The statistical significance of the variables between the evaluated areas was calculated by an analysis of variance (ANOVA) using the average values of the sampling sites. The results of the analysis showed significant differences ($p < 0.05$) to abundance and coverage variables between both areas. More than 40 % of individuals sampled had diameters smaller than 2 cm. The most representative family with 12 of the 35 different species was Cactaceae. The valley area had 40 % more species than the hill zone. In both (hill and valley) cases the species *Lechugilla torr* was the most abundant and dominant species, with the highest importance value. The Shannon index and Margalef showed that both areas are highly rich and diverse in relation to other arid and semiarid sites of northeastern Mexico.

Keywords: Agave, *Lechuguilla torr*, importance value index, plant diversity, Shannon

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