



Analysis of the Morphological Variability in Populations of Green Sprangletop [*Leptochloa Dubia* (Kunth) Nees] to Use in Rangeland Restoration

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The evaluation of morphological characteristics is needed to genetically improve plant native species, such as green sprangletop [*Leptochloa dubia* (Kunth) Nees]. The objective of this study was to explore morphological diversity of green sprangletop native populations, to determine its desirable attributes as a forage species. We analyzed eight morphologic characteristics of 107 ecotypes collected in Chihuahua State, Mexico. Collected specimens were transplanted to La Campana Experimental Center, where evaluations were conducted. Data was analysed through principal component analysis (PCA). A high morphologic variability ($P < 0.05$) was found among ecotypes. Foliage height ranged between 25 and 85 cm; total plant height ranged between 25 and 127 cm; number of stems per plant was 5 to 92; diameter of stems was 2 to 12 mm; leaves were 3 to 15 mm wide and 17 to 61 cm long; plant basal diameter ranged from 3 to 11 cm and aerial biomass production ranged between 31 and 286 g. Three of the principal components (PC) explained 74.3% of the observed total variability. The most important variables for MC1 were biomass production, foliage height and length of the leaves; for PC2 were stem diameter, leaf width, and number of stems; and for PC3 were plant height, number of stems and plant basal diameter. These variables significantly ($P < 0.05$) contributed with the highest values to explain total variation. The PC1 was characterized to cluster variables related with desirable forage potential; PC2 indicated that desirable forage potential is also related to number and diameter of stems; and variables clustered for PC3 are mainly related to potential seed productivity. The ecotypes of green sprangletop with high desirable forage potential were identified to be genetically selected or enhanced based on its morphological characteristics.

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