



## Genetic and Phenotypic Analysis of Blue Grama [*Bouteloua Gracilis* (Willd. Ex-Kunth) Lag. Ex-Steud.] Populations in Chihuahua Mexico

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The blue grama grass [*Bouteloua gracilis* (Willd. ex-Kunth) Lag. ex-Steud.] faces extinction risk. The study of genetic diversity and other agronomic data in wild populations of *B. gracilis*, as well as the identification of genetic markers, it can help to select ecotypes of agronomic and biotechnological interest. The objectives of the present study are to analyze the genetic variability of wild *Bouteloua gracilis* plants from Chihuahua Mexico, and to identify genetic markers related to forage quality values. A total of 145 ecotypes were gathered in places with a specific geographic origin, and with different record of pasture from seven regions. The ecotypes were registered, transplanted and stored in green house conditions. The genetic variability of ecotypes was analyzed using the method of "polymorphism of related amplified sequences" (PCR-SRAP) with two sets of initiators. The banding profiles showed at least 60 different bands, with notorious heterogeneity in most of the individuals. Seven descriptors were analyzed for the phenotypic variation, using the Minitab procedure. Functional groups were established through principal component analysis (PCA). The first three principal components explained 65.2 % of the total variation. The CP1 group included variables related to the production of biomass, the CP3 integrated variables related to the production of forage. Our results indicate that there are a considerable genetic and phenotypic variability in *B. gracilis* ecotypes from Chihuahua grasslands. Now days, we are grouping the individuals, in order to find its genetic closeness grade. This information potentially will allow identifying the genetic marker-forage value relationship. Knowledge about germoplasm diversity and genetic relationships among breeding materials could be an important aid in forage species improvement strategies.

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