

研究论文

鄂尔多斯高原不同降雨量梯度中间锦鸡儿 (*Caragana davazamcii* Sancz) 种群的遗传结构

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摘要 为了阐明环境条件对中间锦鸡儿适应状况的影响, 在鄂尔多斯高原从东向西按照降雨逐渐减少的梯度选取了5个生境, 从遗传多样性的角度出发, 应用简单重复间序列 (ISSR) 方法, 对各生境的中间锦鸡儿种群进行了分子生态学研究, 结果表明随着生境由东向西的变化, 多年平均降雨量的减少, 中间锦鸡儿种群遗传多样性有所增加, 大部分变异发生在种群内 (79.95%), 属异交类型, 中间锦鸡儿群体间遗传距离缓慢增加, 遗传一致度降低, 说明生境条件的变化特别是长期形成的水分条件对中间锦鸡儿的遗传多样性有一定的影响。

关键词 鄂尔多斯高原; 中间锦鸡儿; ISSR; 遗传多样性

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Genetic structure of *Caragana davazamcii* Sancz along a precipitation gradient in Erdos Plateau

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Abstract To understand the environmental effects on adaptations of *Caragana davazamcii* Sancz, we selected five habitats along a precipitation gradient from east to west of the Erdos plateau to quantitatively examine the genetic characteristics of *Caragana davazamcii* population using the ISSR markers. Fresh leaves of individual plants were collected and dried with silica gels. 20 individuals were sampled randomly from per habitat. We found that the Nei's gene index and Shannon's diversity index increased with decreasing in precipitation. The total genetic diversity of five populations (H_T) was 0.2963; genetic diversity within populations (H_S) was 0.2269; genetic diversity among populations (D_{ST}) was 0.0594; genetic differentiation coefficient (G_{ST}) was 0.2005; and gene flow was 1.9936. We also found that 79.95% of molecular variation in *C. davazamcii* existed within populations, while small among populations-suggesting a strong and active hybridization. The genetic distance between five populations was small but increased gradually with changes of the habitats from east to west (i.e., high to low precipitation) while genetic identity decreased. All these indicated that precipitation that has a long-term effect on moisture may also affect genetic diversity of *C. davazamcii*.

Key words [Erdos Plateau](#) [Caragana davazamcii Sancz](#); [ISSR](#); [genetic diversity](#)

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