

研究报告

内蒙古高原不同生境条件下甘蒙锦鸡儿水分调节特性和抗逆性的比较研究

马成仓^{1,2,3},高玉葆²,李清芳¹,郭宏宇²,张家亮²,时燕薇²

¹淮北煤炭师范学院生物学系,淮北 235000;²南开大学生命科学学院,天津 300071;³天津师范大学大学生物学系,天津 300074

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摘要

对分布于内蒙古和林格尔(半干旱地区)和阿拉善(强干旱地区)地区的甘蒙锦鸡儿种群水分调节特性和抗逆性进行了比较研究.结果表明,阿拉善种群比和林格尔种群的叶片渗透调节物质含量高、渗透势低、渗透调节能力强,叶片含水量和自由水含量低、束缚水含量和束缚水/自由水比值高,叶水势和气孔导度低,表明阿拉善种群比和林格尔种群有更强的水分调节能力.阿拉善种群丙二醛(MDA)含量大于和林格尔种群,但细胞膜相对透性和超氧自由基含量小于和林格尔种群,表明阿拉善种群自由基清除能力强、细胞膜稳定性高.有效的水分调节能力和较强的抗逆性是甘蒙锦鸡儿适应干旱环境的重要生理基础.

关键词 [甘蒙锦鸡儿](#) [水分调节](#) [抗逆性](#)

分类号

Water regulation characteristics and stress resistance of *Caragana opulens* population in different habitats of Inner Mongolia plateau

MA Chengcang^{1,2,3},GAO Yubao²,LI Qingfang¹,GUO Hongyu²,ZHANG Jiali²,SHI Yanwei²

¹Department of Biology,HuaiBei Coal Normal College,HuaiBei 235000,China;²College of Life Science,Nankai University,Tianjin 300071,China;³Department of Biology,Tianjin Normal University,Tianjin 300074,China

Abstract

This paper studied the water regulation characteristics and stress resistance of *Caragana opulens* population in Helinger (semi-arid area) and Alashan (intensively arid area),aimed to understand the adaptation mechanisms of this population to arid environment.The results showed that compared with Helinger population,Alashan population had a higher content of osmotic adjustment substances in leaf cells,which resulted in a lower osmotic potential,and thus,stronger osmotic adjustment ability.The leaf water and free water contents of Alashan population were lower than those of Helinger population,while the bound water content and the ratio of bound water to free water of the former were higher than those of the latter.The leaf water potential of Alashan population was lower than that of Helinger population.Alashan population had a lower stomatal conductance than Helinger population,indicating that the former had stronger water adjustment ability.The malondialdehyde (MDA) content of Alashan population was higher than that of Helinger population,while the permeability of plasma membrane and the super-oxygen free radicals content of Alashan population were lower than those of Helinger population.It was suggested that Alashan population had a stronger ability in removing free radicals,and a higher stability of plasma membrane. *C.opulens* could adapt to arid environment through effective water adjustment and strong stress resistance.

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