

## NaCl对真盐生植物囊果碱蓬硝态氮吸收亲和力系统的影响

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The effects of NaCl on affinity nitrate transport system in *Suaeda physophora* Pall.DING Xiao-dong<sup>1</sup>, ZHANG Shi-rong<sup>2</sup>, MI Guo-hua<sup>1</sup>, FENG Gu<sup>1\*\*</sup>

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摘要

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**摘要** 采用营养液培养方法, 研究了真盐生植物囊果碱蓬(*Suaeda physophora* Pall.) 在不同盐度和氮水平中预处理21 d后硝态氮的吸收动力学特征。结果表明, 氮饥饿后, 囊果碱蓬对NO<sub>3</sub><sup>-</sup>吸收符合离子吸收动力学模型, 其吸收动力学参数表现为NO<sub>3</sub><sup>-</sup>预处理浓度增加后, 高亲和力系统中V<sub>max</sub>增大, K<sub>m</sub>值增加, 但增加的幅度不一致。经过低氮高盐预处理的囊果碱蓬高亲和力系统增加的幅度比经过高氮高盐预处理的囊果碱蓬高亲和力系统增加的幅度大; 对于低亲和力系统, NaCl长期胁迫对高氮预培养的囊果碱蓬的低亲和力系统吸收速率有抑制作用, 而对低氮预培养的囊果碱蓬的低亲和力系统吸收速率有促进作用。结果说明, 真盐生植物囊果碱蓬长期生长在低氮高盐条件下, 为了适应特殊的环境条件, 形成了耐盐的硝态氮吸收系统。

**关键词:** 囊果碱蓬 盐胁迫 硝态氮 动力学特征

**Abstract:** In the present study, the absorption dynamic parameter of NO<sub>3</sub><sup>-</sup> in *Suaeda physophora* Pall., which were pretreated in different concentration of NaCl and NO<sub>3</sub><sup>-</sup>, were investigated. The main results were as followed: The uptake of NO<sub>3</sub><sup>-</sup> of *Suaeda physophora* Pall. was in accordance with Michaelis-Menten equation. And the absorption dynamic parameter of NO<sub>3</sub><sup>-</sup> showed that: salt stress changed the uptake kinetics parameters of NO<sub>3</sub><sup>-</sup> to different extent, the addition of salt increased V<sub>max</sub> and enhanced K<sub>m</sub> as compared with the control, which resulted from the number of the carrier and membrane environment. As to the low-affinity system, pretreated with high NO<sub>3</sub><sup>-</sup>, the absorption rate of NO<sub>3</sub><sup>-</sup> of *Suaeda physophora* Pall. was significantly restrained; pretreated with low NO<sub>3</sub><sup>-</sup>, NaCl stress accelerated the the absorption rate of NO<sub>3</sub><sup>-</sup> for *Suaeda physophora* Pall.

**Keywords:** *Suaeda physophora* Pall. salt stress NO<sub>3</sub><sup>-</sup>-N kinetics characteristics

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