

植物生产层

外源ABA对NaCl胁迫下紫花苜蓿矿质元素和脯氨酸含量的影响

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摘要:

研究不同浓度ABA处理对150 mmol/L NaCl胁迫下(水培条件)的2个不同品种紫花苜蓿*Medicago sativa*(维多利亚、中苜一号)矿质元素和脯氨酸含量的影响。结果表明: NaCl胁迫显著降低紫花苜蓿植物组织根、茎、叶的干质量。盐胁迫下各组织中积累大量脯氨酸, 分布情况为叶>茎>根, 外源ABA能显著提高各组织中脯氨酸的含量。且维多利亚紫花苜蓿脯氨酸含量明显高于中苜一号。与NaCl胁迫相比, 添加ABA, 2个不同品种紫花苜蓿Na<sup>+</sup>和Mg<sup>2+</sup>含量均降低, 而K<sup>+</sup>和Ca<sup>2+</sup>含量增高,且添加浓度为10 μmol/L ABA时效果最好。

关键词: 氯化钠; 紫花苜蓿; 脱落酸; 脯氨酸

Effects of ABA on the content of mineral element and proline of two alfalfa varieties under NaCl stress condition

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Abstract:

In the hydroponics conditions, we studied the mineral elements and proline contents of two alfalfa varieties under different exogenous abscisic acid (ABA) concentrations and 150 mmol/L NaCl. The results showed that the dry matters weight of different plant organs decreased significantly in NaCl tolerance. However, proline content accumulated seriously, which appeared differently in organs: leaf > shoot > root. Moreover, accumulations of proline were more significant under the treatment of NaCl+ ABA. And the contents of Victoria were higher than Zhongmu No.1. Compared with the NaCl treatment, the added ABA significantly decreased Na contents and Mg contents, but notably increased K contents and Mg contents. But when the concentration of abscisic acid was 10 μmol/L, the effect was more better.

Keywords: NaCl; alfalfa; ABA; proline

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