

Ca(NO₃)₂胁迫对番茄嫁接苗叶片不同形态多胺含量的影响

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Effects of Ca(NO₃)₂ stress on contents of different forms of polyamines in leaves of grafted tomato plants

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摘要 以耐盐番茄品种‘影武者’为砧木, ‘宝大903’为接穗, 研究了80 mmol/L Ca(NO₃)₂胁迫10 d条件下, 嫁接苗与自根苗生长和叶片不同形态(游离态、结合态和束缚态)多胺含量的差异。结果表明, Ca(NO₃)₂胁迫后, 嫁接苗的生物量显著高于自根苗。整个胁迫期内嫁接苗叶片3种形态的腐胺、亚精胺和精胺含量均呈上升趋势; 自根苗叶片3种形态的腐胺含量下降; 游离态、结合态亚精胺和精胺含量上升; 束缚态亚精胺含量下降, 束缚态精胺含量变化不显著。以上结果表明, 3种形态的腐胺、束缚态亚精胺和精胺在番茄嫁接苗叶片耐盐性方面发挥重要作用。

关键词: 番茄 Ca(NO₃)₂胁迫 嫁接 多胺 番茄 Ca(NO₃)₂胁迫 嫁接 多胺

Abstract:

Using ‘Kagemusya’ (*Lycopersicon esculentum* Mill.), a salt tolerant cultivar, as rootstock and ‘Baoda 903’ as scion, grafting was made to compare the differences in plant growth and leaf contents of different forms (free, conjugated and bound) of polyamines between grafted and own-root tomato plants under 80 mmol/L Ca(NO₃)₂ stress for 10 days. The results showed that the biomass production in grafted plants was significantly higher than that of own-root plants. The contents of three forms of putrescine (Put), spermidine (Spd) and spermine (Spm) in leaves of grafted plants increased significantly during the course of stress. The contents of three forms of Put in leaves of own-root plants decreased significantly, the contents of free and conjugated forms of Spd and Spm increased significantly, but the contents of bound forms of Spd decreased significantly. However, no significant difference was observed in bound forms of Spm after treatment. These results indicated that three forms of Put and bound forms of Spd and Spm played important roles in the leaves of grafted tomato plants for salt tolerance.

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