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[1] 马雪瑞, 段玉玺, 陈立杰, 等. 利用抗坏血酸揭示小粒黑豆对胞囊线虫抗性的研究[J]. 大豆科学, 2011, 30(01): 123-126. [doi:10.11861/j.issn.1000-9841.2011.01.0123]
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利用抗坏血酸揭示小粒黑豆对胞囊线虫抗性的研究

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摘要: 以抗感大豆胞囊线虫3号生理小种的小粒黑豆 (ZDD1412) 和辽豆10为试材, 温室盆栽条件下人工接种大豆胞囊线虫, 以未接种作对照, 接种后7、14、21、28和35 d取样, 测定大豆根内抗坏血酸含量和抗坏血酸过氧化物酶 (APX) 活性的动态变化以及不同浓度抗坏血酸对大豆胞囊线虫胞囊孵化和二龄幼虫抑制率的影响。结果表明: 抗病品种抗坏血酸含量大部分时间高于感病品种, 接种试材抗坏血酸含量的变化幅度大于未接种对照; 抗病品种APX活性均呈上升趋势, 而感病品种接种和未接种的APX活性变化幅度较大。浓度为5、10和20 mg·L⁻¹的抗坏血酸对胞囊孵化的刺激效果最为显著; 浓度为80 mg·L⁻¹的抗坏血酸对二龄幼虫的校正击倒率在不同处理时间上均大于其它浓度处理, 均与无菌水对照达到了5%的显著水平。

Abstract: Xiaohaidou and Liaodou 10 were inoculated with the 3rd race of soybean cyst nematode (SCN) in greenhouse, they had different resistance to SCN. The development of Ascorbic acid (ASA) content and Ascorbate peroxidase (APX) activities were determined after inoculated for 7, 14, 28 and 35 days. The results showed that ASA content of resistant cultivar was higher than sensitive one and inoculated materials were higher than control; APX activities of Xiaohaidou showed an upward trend. Meanwhile, studied the effects of ASA concentrations on SCN incubation and J₅, 80 mg·L⁻¹ ASA was more effective than other concentrations and was significantly different with sterile water at 5% level.

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