

研究报告

## 大蒜根系分泌物对不同受体蔬菜的化感作用

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**摘要** 利用组织培养技术, 在无菌条件下研究大蒜根系分泌物对莴苣、辣椒、萝卜、黄瓜、白菜和番茄等蔬菜作物的化感作用. 结果表明: 大蒜根系分泌物对6种蔬菜作物的发芽率、发芽指数、苗高及保护酶活性没有影响; 对根长、地上部鲜质量及根鲜质量略有促进作用, 其中, 莴苣与对照差异达显著水平, 化感效应指数分别为+0.163、+0.106、+0.318, 白菜根长与对照差异达显著水平, 化感效应指数为+0.120, 其它受试作物与对照差异均未达显著水平; 大蒜根系分泌物对受试作物叶绿素含量及根系活力有促进作用, 与对照差异达显著水平, 对萝卜的叶绿素含量促进作用最强, 化感效应指数为+0.282, 对黄瓜的根系活力促进作用最强, 化感效应指数为+0.184; 大蒜根系分泌物使受试作物对养分的吸收能力有所提高.

**关键词** [化感作用](#) [根系分泌物](#) [大蒜](#) [无菌培养](#)

分类号

## Allelopathy of garlic root exudates on different receiver vegetables

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### Abstract

By the method of tissue culture under sterilized condition, this paper studied the allelopathy of garlic root exudates on lettuce, hot pepper, radish, cucumber, Chinese cabbage, and tomato. The results showed that garlic root exudates had no evident effects on the germination rate, germination index, shoot height, and protective enzyme system of test crops, but significantly increased the root length, aboveground fresh mass, and root fresh mass of lettuce, with the *RIs* being +0.163, +0.106, +0.318, respectively. The exudates also increased the root length of Chinese cabbage, with a *RI* of +0.120. For other test crops, no significant difference was observed between the treatments and the control. Garlic root exudates significantly increased the chlorophyll content and root activity of the receiver vegetables. The strongest promotion effects were found on chlorophyll content in radish, with *RI* being +0.282, and on root activity of cucumber, with *RI* being +0.184. The exudates promoted the nutrient absorption of all the receiver vegetables.

**Key words** [allelopathy](#) [root exudates](#) [garlic](#) [asepsis culture](#)

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