

研究报告

不同氮营养下炭疽病菌侵染对菜心叶片内源激素的影响

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摘要

研究了6种不同氮营养水平下炭疽病菌对菜心叶片乙烯释放量、脱落酸(ABA)和吲哚乙酸(IAA)含量的影响及其与抗病性的关系.结果表明,在感病过程中,所有氮营养处理乙烯释放量呈单峰曲线变化,并在接种后的第4天至第6天达到峰值,适宜氮、低氮营养比高氮或不施肥可抑制乙烯产生和ABA的合成,维持体内乙烯、ABA的稳定.适宜氮、低氮处理感病后IAA含量一直上升,而高氮或不施肥处理的IAA呈单峰曲线变化,并在接种后4~6 d达到峰值,随着致病时间的延长,适宜氮、低氮营养比高氮或不施肥可提高炭疽病菌对IAA的诱导.表明氮营养-炭疽病-内源激素之间存在密切的关系,维持植株体内的激素平衡是提高植株耐病的机理之一.

关键词 [菜心](#); [氮营养](#); [炭疽病](#); [内源激素](#)

分类号

Effects of *Colletotrichum higginsianum* infection on endogenous hormones in *Brassica parachinensis* leaves under different nitrogen nutrition

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Abstract

This paper studied the effects of *Colletotrichum higginsianum* infection on the ethylene production and the contents of abscisic acid (ABA) and indole-3-acetic acid (IAA) in leaves of flowering Chinese cabbage (*Brassica parachinensis*) under six levels of nitrogen (N) nutrition, and their relations to disease-resistance. The results showed that the ethylene production in all N treatments had a mono-peak curve change, and reached the maximum 4~6 days after inoculation. In comparing with high N or non-N treatment, medium or low N treatment could inhibit ethylene production and ABA synthesis, and keep ethylene and ABA stable in *Colletotrichum higginsianum* inoculated plants. The IAA content in medium or low N treatment increased gradually, while that in high N or non-N treatment had a mono-peak curve change, and reached the maximum 4~6 days after inoculation. The IAA content in medium or low N treatment increased more with inoculation time, indicating that there was a close relationship among N nutrition, endogenous hormones and anthracnose. It is important for plants' disease-resistance to keep the balance of endogenous hormones.

Key words

[Brassica parachinensis](#) [Colletotrichum higginsianum](#) [Nitrogen nutrition](#)
[Endogenous hormones](#)

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