

问题讨论

转Bt棉花对蜘蛛生长发育及捕食行为的影响

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摘要 室内评价了取食转Bt棉叶的棉铃虫幼虫对草间钻头蛛和八斑鞘腹蛛生长发育的影响。并通过捕食功能反应评价了取食了Bt棉叶的棉铃虫幼虫对成熟草间钻头蛛捕食行为的影响。室内饲养实验结果表明草间钻头蛛、八斑鞘腹蛛取食用转Bt棉叶处理的棉铃虫幼虫与取食普通棉叶处理的棉铃虫幼虫的发育历期、成蛛体重都没有显著差异。捕食功能反应实验结果表明草间钻头蛛对棉铃虫幼虫的捕食功能反应符合HollingII型圆盘方程, 两组不同猎物饲养成熟的草间钻头蛛对同种处理的棉铃虫幼虫的捕食行为没有显著差异。综合考虑: 转Bt棉对蜘蛛生长发育、捕食能力没有显著的负作用。

关键词 [草间钻头蛛](#); [八斑鞘腹蛛](#); [棉铃虫](#); [转Bt棉](#); [生长发育](#); [捕食功能反应](#)

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Bt cotton impacts on the growth and predation behavior of spiders

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Abstract Several laboratory studies have provoked widespread concern that Bt plants can harm non-target insects. A laboratory study was performed to investigate whether growth of *Hylyphantes graminicola* and *Coleosoma octomaculatum* as well as predation behavior of *H. graminicola* were affected by Bt cotton. Larvae of *Helicoverpa armigera*, preys for the spiders, were fed on Bt transgenic cotton hybrid (Zhongmian 29) or conventional cotton (Xiangza 3) respectively. The spiders were reared twice every week, the ecdysis of nymph of spider was observed every day and the body mass of adult spider was weighted when it matured. No significant difference in the development pattern and adult body weight ($p>0.05$) was detected between *H. graminicola* nymphs reared on Bt cotton fed *H. armigera* larvae and those on conventional cotton fed ones. Same conclusion was drawn from comparing the development and adult body weight of *C. octomaculatum* nymphs raised on Bt cotton fed *H. armigera* larvae with those raised on conventional cotton fed ones ($p>0.05$). The predation functional responses by adult *H. graminicola* which survived in feeding experiment to larvae of *H. armigera* which were fed with Bt cotton or conventional cotton was also carried out under laboratory conditions. We found that the predation functional responses by adult *H. graminicola* to larvae of *H. armigera* satisfied Holling II disc equation. All predation behavior of adult *H. graminicola* was unaffected when they raised on Bt cotton fed *H. armigera*. In conclusion, Bt cotton didn't cause harm to the spiders.

Key words [Hylyphantes graminicola](#); [Coleosoma octomaculatum](#); [Helicoverpa armigera](#); [Bt cotton](#) _ [growth](#) _ _ [predation functional response](#)

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