

研究报告

印楝素乳油对斜纹夜蛾的生物活性及田间防效研究

戴建青^{1, 2} 黄志伟^{1, 2} 杜家纬¹

¹中国科学院上海生命科学院植物生理生态研究所,上海 200032; ²中国科学院研究生院,北京 100039

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摘要

在室内测定了印楝素乳油对斜纹夜蛾(*Spodoptera litura*)的生物活性,并进行了田间防治试验.结果表明,印楝素乳油对斜纹夜蛾具有多种生物活性,主要表现在对幼虫的拒食作用、生长发育的抑制作用和一定的毒杀活性,以及对成虫产卵的忌避作用.经印楝素处理后,幼虫平均发育历期延长、幼虫体重、蛹重、化蛹率和蛹羽化率显著低于对照,印楝素乳油 $12 \mu\text{L}^{-1}$ 浓度处理3龄幼虫5和7 d后的体重分别是对照组的36.8%和14.5%,而幼虫平均发育历期比对照组延长6 d左右,化蛹率和蛹羽化率分别是27.79%和37.23%,显著低于对照组85.66%和82.11%.印楝素对低龄幼虫有一定的毒杀活性,而对高龄幼虫活性则很低.田间防治试验表明,印楝素乳油对斜纹夜蛾种群有良好的控制作用,施药7 d后其防治效果要优于化学农药10%除尽悬浮剂.

关键词 [印楝素,斜纹夜蛾,生物活性,拒食作用](#)

分类号

Bioactivity of azadirachtin and its field efficiency against *Spodoptera litura*

DAI Jianqing^{1, 2}, HUANG zhiwei^{1, 2}, DU Jiawei¹

¹Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai 200032, China; ²Graduate School of Chinese Academy of Sciences, Beijing 100039, China

Abstract

In this paper, the effects of varying concentration azadirachtin on tobacco cutworm *Spodoptera litura* were investigated in both laboratory and field. The results showed that azadirachtin exhibited a wide range of bioactivities, including anti-feeding, growth inhibition, larval toxicity, and oviposition deterrent. This compound could significantly reduce pupal weight and pupation and eclosion rates. After treated with $12 \mu\text{L}^{-1}$ azadirachtin for 5 and 7 days, the third instar larvae only weighted 36.8% and 14.5% of the untreated ones, and their development took approximately 6 days longer, with a 27.79% pupation rate and a 37.23% emergence rate, significantly lower than the control by 85.66% and 82.11%, respectively. Azadirachtin was more efficient for the low instar larva than the old ones. Field experiments confirmed that after 7 days application, azadirachtin could effectively control *Spodoptera litura*, being more efficient than the chemistry pesticide, 10% Chu-Jin SC.

Key words [Azadirachtin](#) [Spodoptera litura](#) [Bioactivity](#) [Anti-feeding effect](#)

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