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研究报告

# 颗粒体病毒对小菜蛾自然种群的控制作用模拟

何余容[1]；吕利华[2]

[1]华南农业大学昆虫生态室,广州 510642;[2]广东省农业科学院植物保护所,广州 510640

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摘要

利用作用因子组配的生命表和种群系统控制理论，模拟了小菜蛾颗粒体病毒不同浓度和不同施用次数组合对菜心地小菜蛾自然种群的控制作用.结果表明，在蔬菜生态系统天敌作用得到逐渐恢复的前提下，如果不采用任何防治措施，春季菜心地小菜蛾自然种群经第一代的繁殖，第二代卵和幼虫数量为第一代的4 1倍；在小菜蛾第一代低龄幼虫期，喷施0.25 LE/L病毒2次，小菜蛾第二代卵和幼虫数量比对照显著下降，但下代小菜蛾种群增长仍保持在1以上；而喷施0.5 LE/L病毒2次，1 LE/L病毒1次两种组合处理，小菜蛾第二代种群增长倍数仅为0.13，显著降低田间小菜蛾种群数量，达到控制小菜蛾为害的目的.

关键词 小菜蛾；颗粒体病毒；自然种群；控制

分类号



# Simulation of *Plutella xylostella* population control by granulosis virus

HE Yurong[1],Lv Lihua[2]

[1]Laboratory of Insect Ecology,South China Agricultural University,Guangzhou 510642;[2]Plant Protection Research Institute,Guangdong Academy of Agricultural Sciences,Guangzhou 510640,China

**Abstract**

By means of the life table of acting factors combinations and the theory of modern population system control,this paper evaluated the efficacy of different combinations of application dosage and times of granulosis virus on *Plutella xylostella* control.The results showed that with gradually recovered natural enemies,the second generation of *Plutella xylostella* in the field of spring flowering Chinese cabbage would increase 4.1 times if no control methods were carried out to the first generation.After applying a suspension of 0.25LE/L(Larval equivalent)two times,the egg and larval numbers of the second generation *Plutella xylostella* were reduced significantly,but the index of population increase was still beyond 1,while applying a suspension of 0.5 LE/L two times or 1LE/L one time at the peak of 2nd instar larvae of the 1st generation could significantly reduce the egg and larval numbers,and the index of population increase was only 0.13.Therefore,if used appropriately, the granulosis virus originated from *Plutella xylostella* could control the damage of *Plutella xylostella* effectively.

**Key words** *Plutella xylostella* Granulosis virus Population control Simulation

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