

植物保护

球孢白僵菌不同菌株生物学特性及对小菜蛾的毒力研究*

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摘要 室内测定了从鳞翅目小菜蛾、斜纹夜蛾和块茎蛾罹病虫体上分离纯化的球孢白僵菌菌株 DBM001, XWYE001 和 PTM001 的菌落生长速率、产孢量、孢子萌发速度, 及对小菜蛾幼虫的致病力, 并用时间-剂量-死亡率模型进行了分析。结果表明, 各菌株在菌落生长速率上无显著差异, 但各菌株的孢子萌发速率有显著差异。供试 DBM001, PTM001, XWYE001 三菌株对小菜蛾二龄幼虫的毒力测定结果表明: 供试 3 菌株对于小菜蛾均具有一定的毒力, 剂量效应参数分别为 0.424, 0.304, 0.297。在 10^8 孢子/mL, 10^7 孢子/mL, 10^6 孢子/mL, 10^5 孢子/mL, 10^4 孢子/mL 的孢子悬浮液下, 3 菌株孢子液处理后小菜蛾的累积死亡率分别为 94.0%~48.0%, 76.0%~28.0% 和 62.0%~28.0%。3 菌株处理后第 3d 时的 LC_{50} 分别为 6.5×10^7 孢子/mL; 4.07×10^7 孢子/mL 和 2.88×10^7 孢子/mL。在 10^6 孢子/mL 下, 3 菌株对小菜蛾幼虫的致死亡中时 LT_{50} 依次为 3.0, 4.1, 3.5d。由此表明, 斜纹夜蛾和马铃薯块茎蛾菌株的对小菜蛾幼虫的致死时间效应较长, 均在 3d 以上, 即球孢白僵菌不同菌株对小菜蛾种群增长的抑制作用时效差异较大, 尤其是斜纹夜蛾和马铃薯块茎蛾分离株对小菜蛾的毒力发挥较慢。

关键词 [球孢白僵菌](#); [生物学特性](#); [生物测定](#); [毒力](#); [小菜蛾](#)

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Study on the Biological Characters of Isolates of *Beauveria bassiana* and their Virulence Against the *Plutella xylostella*

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Abstract

The biological characters of three isolates of *Beauveria bassiana* was tested, isolates were marked as DBM001, XWYE001 and PTM001. More over, the virulence against the diamondback moth, *Plutella xylostella* was evaluated. Among the tested isolates, no significant difference was found in spore yield, germination rate, as well as the mycelium growth rates on SDAY medium. But the virulence against diamondback moth was similar. A time-dose-mortality model was used for analyzing the mortality as affected by both time and dosage. The results showed that all tested isolates were virulent to the larvae of diamondback moth, accumulative mortality was 94.0%~48.0%, 76.0%~28.0%, 62.0%~28.0%. The value of LC_{50} for the these three isolate was 6.5×10^7 conidia/mL; 4.07×10^7 conidia/mL; 2.88×10^7 conidia/mL, on the 3rd day after inoculation, the LT_{50} for the 3 isolates ranged from 3.0, 3.5, 4.1 days under the inoculation of 10^6 conidia/mL.

Key words [Beauveria bassiana](#) [biology characteristic](#) [bioassay](#) [virulence](#); [Plutella xylostella](#)

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