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Selection of Entomopathogenic Fungi for *Spodoptera litura* Control

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Abstract

Biological control with pathogenic fungi is a promising alternative to chemical control against the insect pest of vegetable. Ten isolates of green muscardine fungus, *Metarhizium anisopliae* as entomopathogenic fungus were used to test for pathogenicity on second instar of common cutworm, *Spodoptera litura* under the laboratory conditions. The tested larvae were placed in Petri dishes containing green muscardine fungus and they were allowed to make a direct contact with the particular entomogenous fungus. It was revealed that 3 isolates of green muscardine fungus, BCC1858, BCC4849 and Khon Kaen were effectively killed 100 % of the cutworm larvae within 2 days. Subsequently, *M. anisopliae* isolates were brought to examine with 8 different media for physiological properties. The result showed that mungbean agar (MU) was the best for mycelial growth and sporulation. Moreover, the optimum temperature for growth was ranged around 30–35 °C. When the isolates were kept in the room with 12 hours light alternated with 12 hours dark, they were produced more green spores than the other. [The best conditions for sporulation were observed when the isolates were kept at 30–35°C with 12 hours light alternated with 12 hours dark.] When the 3 most effective isolates were tested with the 1st, 2nd and 3rd instars of cutworm at 4 concentration levels included of 107, 108,109 and 1010 spores ml^{-1}. The result indicated that the isolate 4849 with the concentration of 6×108 spores ml^{-1} was the most effective one. It was observed to cease the 3rd instar of cutworm by 79.49 % within 7 days.

Keywords: *Spodoptera litura*, Biological control, Entomopathogenic fungus, *Metarhizium anisopliae*

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