Pathogenicity of Beauveria bassiana against the tiger moth Atteva sciodoxa (Lepidoptera: Yponomeutidae)

ABSTRACT

Seven isolates of Beauveria bassiona were screened for pathogenicity and infectivity at a concentration of 5x107 conidia mL-1 against Attevo sciodoxa at 27Â±2Â°C and 75Â±5% relative humidity with 12 h photoperiod. Based on screening results, isolates Bba-Pp and FS-11 were further bioassayed at 1 x 106, 5x106 and 1x107 conidia mL-1. All the isolates were found to be pathogenic. However, the infectivity varied significantly among the isolates. The earliest mortality was recorded three days after inoculation, The most virulent isolate, Bba-Pp, caused 100% mortality with a median infective time (ET50) of 3.6 days on day seven following inoculation while FS-11 caused 83,3% mortality with an ET50 value of 4.1 days, Bba-S13 was the least infective isolate with 24.9% mortality and 15.3 days of median effective time. Mycelia appeared on 24 to 48 h old cadavers, The highest level of sporulation on two-week old cadavers was 150.6x105 Bba-Pp conidia mg -1 cadaver while the lowest was 12.23x105 Bba-S13 conidia. The median effective concentration (EC50) of Bba-Pp was 9.89x105 conidia mL-1 while that of FS-11 was 3.85x106 conidia mL-1. The ET50 values 1x106 1x107 conidia mL-1 of Bba-Pp ranged between 7.0 and 4.4 days, respectively, while that of FS-11 were 10.3 and 5.8 days. A strong negative correlation was found between inoculum concentrations and food consumption (R2 = -0.99). The infection by Bba-Pp and FS-11I resulted in 55.8 to 72.5% reduction in food consumption by A. sciodoxa compared to the controls.

Keyword: Beuveria bassiana; Pathogenicity; Atteva sciodoxa; Tiger moth; Eurycoma longifolia; Biological control