

## **Comparative virulence of blastospores and conidia of *Beauveria bassiana* and *Cordyceps fumosorosea* against soybean pests**

**Bianca Corrêa; Vanessa S. Duarte; Daniela M. Silva; Gabriel M. Mascarin; Italo Delalibera Jr.;**

*Universidade de São Paulo (USP) – Escola Superior de Agricultura “Luiz de Queiroz” (ESALQ)*

Entomopathogenic fungi are biocontrol agents capable to infect many insect pests and can produce different infection propagules in artificial media. The soybean crop suffers with attack of many pests and an ideal option would be the use of a single fungal species for the control of a broad host range of this crop. This study aimed to compare the virulence of conidia and blastospores (fresh or air dried) of *Beauveria bassiana* (Bals.) Vuill. and *Cordyceps fumosorosea* (Wize) Kepler (Cordycipitaceae) against *Bemisia tabaci* (Gennadius) biotype B (Aleyrodidae), *Chrysodeixis includens* (Walker) and *Spodoptera frugiperda* (JE Smith) (Noctuidae). Two isolates of each fungal species were selected and their conidia and blastospores were obtained by solid and liquid fermentation process, respectively. Blastospores were dried using an air drying method. Bioassays were performed with 2nd and 3rd instar nymphs of *B. tabaci* and 3rd instar larvae of *C. includens* and *S. frugiperda*. Suspensions of blastospores and conidia in a concentration of  $5 \times 10^7$  propagules mL<sup>-1</sup> were sprayed on the insects, and the control received only distilled water + Tween (0.02%). The mortality was recorded during 10 days. For *B. tabaci*, the air dried blastospores of ESALQ1296 (*C. fumosorosea*) and ESALQ543 (*B. bassiana*) caused the highest mortalities (83.97% and 66.47%, respectively) and exhibited the smallest median survival times (ST50 = 4 and 6 days, respectively). *S. frugiperda* larvae treated with air dried blastospores of ESALQ3422 and ESALQ1296 (*C. fumosorosea*) presented the highest mortalities (87.50% and 91.25%, respectively) with ST50 of 4 and 3 days. For *C. includens*, fresh blastospores of ESALQ1296 was the most lethal propagule, killing 79.17% of larvae and attaining ST50 of 4 days. Thus, blastospores of the two fungal species hold great promise as active propagule for the control of these important soybean pests. Entomopathogenic fungi are biocontrol agents capable to infect many insect pests and can produce different infection propagules in artificial media. The soybean crop suffers with attack of many pests and an ideal option would be the use of a single fungal species for the control of a broad host range of this crop. This study aimed to compare the virulence of conidia and blastospores (fresh or air dried) of *Beauveria bassiana* (Bals.) Vuill. and *Cordyceps fumosorosea* (Wize) Kepler (Cordycipitaceae) against *Bemisia tabaci* (Gennadius) biotype B (Aleyrodidae), *Chrysodeixis includens* (Walker) and *Spodoptera frugiperda* (JE Smith) (Noctuidae). Two isolates of each fungal species were selected and their conidia and blastospores were obtained by solid and liquid fermentation process, respectively. Blastospores were dried using an air drying method. Bioassays were performed with 2nd and 3rd instar nymphs of *B. tabaci* and 3rd instar larvae of *C.*

*inclusens* and *S. frugiperda*. Suspensions of blastospores and conidia in a concentration of  $5 \times 10^7$  propagules mL<sup>-1</sup> were sprayed on the insects, and the control received only distilled water + Tween (0.02%). The mortality was recorded during 10 days. For *B. tabaci*, the air dried blastospores of ESALQ1296 (*C. fumosorosea*) and ESALQ543 (*B. bassiana*) caused the highest mortalities (83.97% and 66.47%, respectively) and exhibited the smallest median survival times (ST50 = 4 and 6 days, respectively). *S. frugiperda* larvae treated with air dried blastospores of ESALQ3422 and ESALQ1296 (*C. fumosorosea*) presented the highest mortalities (87.50% and 91.25%, respectively) with ST50 of 4 and 3 days. For *C. inclusens*, fresh blastospores of ESALQ1296 was the most lethal propagule, killing 79.17% of larvae and attaining ST50 of 4 days. Thus, blastospores of the two fungal species hold great promise as active propagule for the control of these important soybean pests.

**Palavras-Chave:** Entomopathogenic fungi; Liquid fermentation; Soybean pests

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