

Synthesis and secretion of volatile organic compounds by *Triatoma infestans* infected with *Beauveria bassiana*

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Physically disturbed *Triatoma infestans* adults secrete volatile organic compounds (VOC) with alarm and defense function. It is still unclear whether infection with entomopathogenic fungi changes or not the profile of these volatiles. The aim of the present research was to study the effect of *B. bassiana* on secretion of VOC by *T. infestans* and to study the expression of genes potentially involved in the biosynthesis of these volatiles in triatomines infected or not. Volatiles released by *T. infestans* on different periods after treatment (1---4, 6---10, 11---15 days) were quantified and identified employing capillary gas chromatography coupled to mass spectrometry. The expression pattern of *Ti---brnq* and *Ti---bckdc* was analysed by real---time PCR, 4 and 10 days after treatment. Isobutyric acid was the most abundant VOC found (70 to 78% of the total) with no significant effect of the progress of infection on quantitative secretion of this compound. Secretion of propionic acid, however, was highest in the beginning (18.6±5.8%) and decreased distinctly with the progress of infection and at this time did not differ from values found for the control. Highest expression of both genes was found on insects 4 days after treatment. Significant difference was found in *Ti---brnq* expression, with 1.3 ± 0.5 and 3.0 ± 0.4 fold induction over the controls in insects treated with 1 x 10⁶ and 1 x 10⁸ con/ml, respectively. Similar results were observed for *Ti---bckdc* expression, resulting in 1.9 ± 0.3 and 2.5 ± 0.4 fold induction, respectively. The results help to understand better the impact of fungal infection on the chemical ecology of *T. infestans*.