

Protease Activity is Constant During the Larval Development of *Anticarsia gemmatalis* Fed With the Trypsin-inhibitor Berenil

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The larvae of *Anticarsia gemmatalis* (Hübner) (Lepidoptera: Noctuidae), a chewing insect, is an important pest in Brazilian soybean agriculture. Even at low population density, this insect can cause great damage to soybean crops, ranging from defoliation up to total lost of the plant. *A. gemmatalis* show resistance for several insecticides used for its control. One potential alternative for the chemical control are protease inhibitors that can have negative consequences to the insect post-embryonic development such as berenil, a synthetic trypsin-inhibitor. The subjects of this work were to evaluate if protease activity of caterpillars increase with the larval development even though with the increase of berenil concentrations in diet. Larvae were reared in artificial diets containing 0.00, 0.00095, 0.0019, 0.0038, 0.0076% (w/w) of berenil. Enzymatic activity (proteolytic, amidolytic and esterolytic) was assayed in extracts obtained of midgut contents removed of six stages of post-embryonic development of insects (first to sixth instars larvae). The larvae show a bad development and, when survival, results in lower adults. The enzymatic activities assayed decreased with the increase of berenil concentrations in diet, in the same larval stage. However, when compared between the treatments, the protease activity is almost constant during the larval development. Probably, the insects, during larval development can be produce different isoforms of trypsin-like enzymes that are not inhibited.

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