

## BIOLOGICAL EFFECTS OF INHIBITOR FROM *Plathymentia foliolosa* SEEDS ON *Anagasta kuehniella* LARVAL DEVELOPMENT

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Plants are able to synthesize a wide range of molecules to defend themselves against insect attack. *A. kuehniella* is found worldwide, this insect attacks stored grains. In this work, we investigated the effect of a trypsin inhibitor present in *P. foliolosa* seeds (PFIT) on the development of *A. kuehniella* larvae. PFIT was purified through classic chromatography methods. The insects were cold immobilized, dissected, and the midguts were surgically removed from the larvae and placed in iso-osmotic saline. Midgut tissue homogenates were centrifuged and the supernatants were used as enzyme sources. To examine the protein effects on *A. kuehniella*, larvae up to the fourth instar were fed an artificial diet-containing PFIT at concentration of 0.7% (w/w). Control meal without inhibitor was also prepared. Each treatment was repeated fifteen times with five larvae ( $n=75$ ), and was analyzed in terms of weight and larval survival. When PFIT was fed to *A. kuehniella* larvae caused a significant reduction in larval survival and weight (32.3% and 66.1%, respectively). General proteinase activity was significantly smaller in larvae reared on a diet containing 0.7% PFIT. Analysis SDS-PAGE (0.1% gelatin) confirmed this proteinase activity. Additional studies with this inhibitor developed to better understanding this protein in relation to development of *A. kuehniella*.

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Key Words: *Plathymentia foliolosa*, trypsin inhibitor, *Anagasta kuehniella*.