

DIGESTIVE ENZYMES DURING DEVELOPMENT OF *PLODIA INTERPUNCTELLA* (LEPIDOPTERA: PYRALIDAE): IDENTIFICATION AND CHARACTERIZATION

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Plodia interpunctella (Indian meal moth) is a cosmopolitan pest that attacks a wide range of stored cereal products and other food products. Due its economic importance several researches are focused in elucidate a method capable to control this pest without environment damage. Studies of digestive enzymes inhibitors, lectins and chitin-binding proteins are proposed as an alternative to control the damage caused by insects, to reach this goal a characterization of digestive enzymes presents in gut is necessary. In this study we reported the digestive enzymes classes during *P. interpunctella* development by *in vitro* assays and SDS-PAGE and evaluated the optimum pH and temperature also *in vitro* effect of several inhibitors. *P. interpunctella* presented 5 larval instars where the major proteolytic activity (UA/gut) was detected in pre-pupal stage and the greater specific proteolytic activity (UA/mg protein) was observed in 3rd instar with azocasein as substrate at pH 9.5, 50°C. Inhibition of gut digestive enzymes at 3rd larval instar by SBTI, TLCK and PMSF was more predominant, with 62%, 92% and 87%, respectively. In pre-pupal stage the major inhibition observed was by TLCK (87%), TPCK (62 %) and SBTI (55%) indicating predominance of digestive serine proteinases. In future bioassays serine proteinases would be used as targets to test effects of trypsin-like inhibitors.

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