

## **DELONIX REGIA $\alpha$ -AMYLASE INHIBITORS: NOVEL BIOTECHNOLOGICAL TOOLS AGAINST BEAN BRUCHIDS**

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Cowpea is an important crop for subsistence of several families from Latin America and Africa. This culture is frequently attacked by the bruchid weevil *Callosobruchus maculatus*, which is responsible for serious losses in plant cultures. Those insect-pests consume the starch at larval stage, destroying storage seeds in warehouses. For this reason, several  $\alpha$ -amylase inhibitors have been isolated from diverse plant species, as an alternative strategy for insect-pest control. In this report, we isolated an  $\alpha$ -amylase inhibitor from flamboyant seeds (*Delonix regia*), with inhibitory activity toward digestive enzymes from several sources. Proteins were extracted using a solution containing 0.6M NaCl and 0.1% HCl, followed by ammonium sulphate precipitation (100%). After dialyses, the extract was applied onto a SP-Sepharose column, where proteins were eluted using linear gradient of 0.5M sodium phosphate buffer, pH 7.2 containing 0-1M NaCl. After lyophilization, retained fraction was applied onto a reversed-phase column (HPLC-Vydac C18 218TP), showing eluted at 55% acetonitrile, which presented ability to inhibit 24% of *C. maculatus*  $\alpha$ -amylase activity. Molecular mass analysis of this sample by SDS-PAGE showed a single band with 25 kDa. Therefore, further studies on the characterization of this peptide might lead to its future application as a bioinsecticide, enhancing crop protection against insect-pest attacks.

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