

Proceedings of the

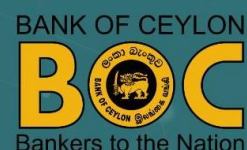
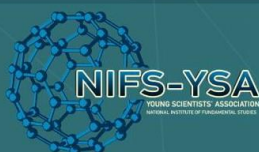
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Investigation of antioxidant, cytotoxic and phytotoxic activity of plant extracts from *Eichhornia crassipes*

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Eichhornia crassipes, (Family Pontederiaceae), commonly known as “Japan Jabara”, is an invasive aquatic plant found in tropical and subtropical regions. Its origin is the Amazonia basin in South America. It has been used in the past for medicinal purposes such as treatment for cholera, sore throats, and snake bites. The objective of the study was to determine antifungal activity against *Cladosporium cladosporioides*, antioxidant activity against DPPH (2,2'-diphenyl-1-picrylhydrazyl), cytotoxicity against brine shrimps, phytotoxicity against lettuce seed germination, α -amylase inhibitory activity and lipase enzyme inhibitory activity of the crude extracts of the shoot (SH) and root (RT) obtained from *E. crassipes* plant by using solvents which have different polarities. The hexane, ethyl acetate (EtOAc) and methanol extracts of *E. crassipes* RT, assessed for cytotoxicity properties, revealed 100%, 97% and 90% cell death (mortality) respectively. Similarly, EtOAc extracts of *E. crassipes* RT showed substantial inhibition of both the shoot (77.57%) and root (67.52%) while EtOAc extracts of *E. crassipes* SH exhibited good phytotoxic effects on the shoot (70.78%) and root (78.14%) than the other extracts. The lowest DPPH free radical scavenging activity ($IC_{50} = 39.94 \text{ mg l}^{-1}$) was found in the SH- EtOAc extract, while IC_{50} of 15.94 mg l^{-1} was found in the RT-EtOAc extract indicating that the root extract has the strongest antioxidant activity. Further, the study revealed the lack of α -amylase inhibitory activity, antifungal properties or lipase inhibitory activity in any of the crude extracts of *E. crassipes* tested. The extracts of *E. crassipes* are a promising source for the isolation of bioactive compounds since it possesses significant antioxidant, cytotoxic and phytotoxic properties.

Keywords: α -amylase, aquatic plant, Japan Jabara, lipase