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Investigation of the best method for extraction of fish anesthetic compounds from common tephrosia (Kathurupila); *Tephrosia purpurea* leaves and effects of the extracts on fish (guppies)

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Use of aqueous extract of common tephrosia (Kathurupila); *Tephrosiapurpurea* leaves as an anesthetic agent is a traditional fish catching technique while scientific information on this regard is scarce to our knowledge. Thus, present study was designed to find the best extraction conditions and to evaluate the anesthetic properties of 'Kathurupila' (*Tephrosia purpurea*) leaf extracts using guppies (*Poecillia reticulata*) as experimental fish. The active components in leaves which have the potential to anaesthetizing fish were extracted using two different methods *viz* sequential extracting and solid-liquid extraction techniques. First sequential extracting technique was employed to extract active compounds in dried leaf sample (80 g) using the Soxhlet extractor with hexane, dichloromethane, ethyl acetate and methanol. The anesthetic activities of those extracts were tested on guppies (*Poecilia reticulata*). Preliminary studies showed that the methanol extract (yield 4.8 %) was active for fish. Secondly, solid-Liquid extraction was performed using crushed dried leaves (400 g) of the same plant with hexane, dichloromethane, ethyl acetate and methanol as the solvents. Anesthetic effect was assessed for each of these extracts and the ethyl acetate extract (2.1 %) was found to be the most active extract. Phytochemical screening of the ethyl acetate extract showed that it contains flavonoids, saponins, glycosides, tannins and phenols. A range of concentrations (0.3-0.6 g L^{-1}) of ethyl acetate extract was tested on guppies (average weight 0.729 ±0.05 g and average length 3.3 ± 0.1 cm) to find the effective concentration. The observed induction time (10.3 min) and the recovery time (3.5 min) of the fish with a concentration of 0.6 g L^{-1} of the extract was very close to the recommended time.

Keywords: anesthetics, Tephrosia purpurea, induction period, Poecilloia reticulata,

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