FUNGITOXIC AND INSECTICIDAL PROPERTIES OF THREE *CROTON* SPECIES (EUPHORBIACEAE)

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Considering the undesirable effects of synthetic pesticides on human health and environmental pollution, the investigation of substances for use in the control of pests in agriculture as "harmless" and desirable pesticides has become essential. We investigated the fungitoxic (against *Cladosporium cladosporioides*) and the aphidicidal (against *Aphis craccivora*) properties of the steam distillates from the leaves of *C.aromaticus* and *C. lacciferus* and the extracts (petroleum, chloroform and methanol) from the roots of *C. aromaticus*, *C. lacciferus* and *C. officinalis*. The ovicidal (against *Callosobruchus chinensis*) properties of the root extracts of *C. aromaticus* and *C. lacciferus* were also studied.

The root extracts were prepared by the sequential extraction for the dried and powdered roots of each plant with petroleum (b.p. 60-80°C), chloroform and methanol under reflux conditions. *Cladosporium*-TLC- bioassay technique[1] was used for the fungitoxic assay. Aphidicidal activity of the extractives was tested, using Potter's spray tower[2], against aphids (*A. craccivora*) which had been reared on the leaves of cowpea (*Vigna unguiculata*) in the laboratory. Bruchids (*C. chinensis*) maintained on mung beans (*Vigna radiata*) were used for the examination of ovicidal properties.

The following extractives displayed bioactivity: *C. aromaticus* - steam-distillate (aphidicidal, fungitoxic), petroleum extract (aphidicidal, ovicidal), chloroform extract (aphidicidal); *C. lacciferus* -steam distillate (fungitoxic), petroleum extract (aphidicidal, ovicidal), chloroform extract(aphidicidal); *C. officinalis* - petroleum and chloroform extracts (aphidicidal and fungitoxic). The methanol extracts were found to be inactive.

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References

1. Klarman, W.L. and Stanford, J.B. (1968) *Life Sciences*, 7, 1095.

2. Henrichs, E.A., Chelliah, S., Valenica, S.L., Areo, M.C.A., Flabellar, L.T., Aquino, G.B. and Pickin, S. (1981) *Manual for Testing Insecticides on Rice*, IRRI, Philippines, p.13.

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