

PHYSIOCHEMICAL CHANGES OF STORED COWPEA, *VIGNA UNGUICULATA*, TREATED WITH SELECTED ESSENTIAL OILS TO CONTROL COWPEA BRUCHID, *CALLOSOBRUCHUS MACULATES* (F.)

Gayana R.S. Rubasinghegc(1), Krishanthi Abeywickrama(2) and Priyani Paranagama(1)
(1) Department of Chemistry, University of Kelaniya, Sri Lanka [Priyani123@yahoo.com](mailto: Priyani123@yahoo.com),
(2) Department of Botany, University of Kelaniya, Sri Lanka

Cowpea (*Vigna unguiculata*) seeds were treated with essential oils of lemon grass (*Cymbopogon citratus*), citronella (*C. nardus*), cinnamon leaf (*Cinnamomum zeylanicum*), wild sprang (*Micromelum minutum*) and a standard pesticide (pirimiphos methyl) as fumigant toxicants. At the end of the four month storage period, physical and chemical properties of cowpea from each storage system were analyzed. Variation of physiochemical properties among treated storage system was insignificant with one exception; 20 ± 5 % of moisture was lost in samples treated with essential oils due to absorption of treated oil. Higher protein, fat and dietary fiber contents were reported from essential oil-treated samples compared to those treated with pirimiphos methyl. With lower toxicity to humans and other mammals and less or no significant variation in physiochemical properties, the selected essential oils can be used as fumigant toxicants against *Callosobruchus maculates*.

CV

Priyani Ashoka Paranagama Professor in Chemistry at the Department of Chemistry of University of Kelaniya, Kelaniya, Sri Lanka. PhD from University of Glasgow, UK in 1994, title of thesis "A study of effects of azadirachtin on specific tissues of Locusts (*Schistocerca gregaria*)". Author of 21 publications in scientific journals and holder of 2 patents.