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# Comparative Bioactivity of Three *Khaya* Species (Meliaceae) Against *Callosobruchus maculatus* Fabricius (Coleoptera: Bruchidae)

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## ABSTRACT

The efficacies of crude extracts of the stem bark of *Khaya grandifoliola*; K. *senegalensis* and *K. nyasica* (Meliaceae), collected within the same Nigerian ecological zone, at 0, 250, 500 and 1000 ppm were investigated as cowpea protectants against Cowpea bruchid (*Callosobruchus maculatus* Fabricius) under laboratory conditions at 27 ± 2 °C temperature and 77 ± 8% relative humidity. All *Khaya* extracts at 250 -1000ppm significantly reduced the oviposition of *C. maculatus* in treated cowpea seeds. Seeds treated with extract of *K. grandifoliola* had the least mean number of eggs (75.5) laid on them compared with the control (310.00). Similarly, all *Khaya* extracts at 500-1000ppm caused significant reduction in reproductive efficiency of *C. maculatus, and* the lowest significant reproductive efficiency (47.9%) was recorded in extract of *K. grandifoliola* at 1000ppm concentration. When topically applied, significant mortalities in cowpea bruchid adults were observed at 1000ppm concentration of *K. grandifoliola* and *K. nyasica* extracts. The body weight of emerged F1 adults from seeds treated with the three *Khaya* species were not found to be significantly different.

*Key words*: *Callosobruchus maculatus, Khaya,* Meliaceae, cowpea weevil, oviposition, reproductive efficiency, toxicity, *Vigna unguiculata*.

## INTRODUCTION

Cowpea, *Vigna unguiculata* (L.) Walpers, remains predominantly a nutritionally important but minor component of subsistence agriculture in the semi-arid and sub-humid tropics of Africa. Several locally available cultivars are susceptible to insect pests attack both on the field and in the store. Cowpea bruchid (*Callosobruchus maculatus* Fabricius) has been reported the most important cowpea storage pest throughout the tropics (Gwinner *et al*., 1996; Ofuya & Lagunju, 1998). An estimated yield losses caused by *C. maculatus* is about 4% of the total annual production valued at over 30 million US dollars annually in Nigeria alone. A hundred percent infestation of cowpea within 3-5 months storage has also been reported (Caswell & Akibu, 1980).