

USE OF RUBBER SEED OIL AS SEED PROTECTANT AGAINST *COLLOSOBRUCHUS MACULATUS* F. INFESTATION ON STORED COWPEA

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The insecticidal property of rubber seed oil against the cowpea bruchid, *Callosobruchus maculatus* in stored cowpea was investigated. Rubber seed oil (RSO) was tested at five levels, namely, 2.5, 5, 7.5, 10 and 20 ml/kg cowpea seed (*Vigna unguiculata* L. Walp.) against *C. maculatus*. The oil dissolved in petroleum ether was applied on the seed coat. The effectiveness of the RSO was assessed by recording the emergence of adult beetle from the RSO treated seed, percentage seed germination, percentage weight loss and ill effects on quality of seed such as taste and smell. Application of the RSO at 1.92 per cent concentration protected stored cowpea against *C. maculatus* for a period of five months after application, with no subsequent damage to the viability of the cowpea. Emergence of adult weevils was completely inhibited at this concentration. The germination percentage in all the treatment combinations was not significant. The untreated control recorded the highest per cent germination.

Key words: *Callosobruchus maculatus*, Cowpea, *Hevea brasiliensis*, Pest control, Rubber seed oil, *Vigna unguiculata*.

INTRODUCTION

Cowpea (*Vigna unguiculata* L. Walp.) is a legume of choice of many people in Africa. It provides more than half the plant protein in human diet in some parts of semi-humid tropics. It is a staple food for the poor people in many developing countries and it is high in protein as well as other nutrients (Rachie, 1985). The world wide production of cowpea in 1994 was 11.29 million metric tonnes. Out of this, 3.35 million metric tonnes was produced in Africa, including 1.75 million metric tonnes (15.50% of the world production) produced in Nigeria. More than 70 per cent of the world production is concentrated in three countries (Nigeria, Brazil and Niger) with Nigeria being the world's largest producer

(FAO, 1994). According to International Institute of Tropical Agriculture (IITA, 2002), 64 per cent of world's cowpea is grown in West and Central Africa of which Nigeria produces more than 75 per cent.

Losses of stored grain legumes occur to a great dimension due to damage and deterioration by insect pests. Spurgeon (1977) and Tanzubil (1986a) estimated approximately 75 per cent post harvest losses due to insect attack in grain legumes in semi-arid Africa. This figure is alarming considering the value of legumes as one of the major sources of plant protein in the continent. Infestation from *Callosobruchus maculatus* (F.) has been reported to cause up to 100 per cent seed damage and 65 per cent weight loss in cowpea within 18 weeks of storage