

EVALUATION OF COWPEA GERMPLASM FOR RESISTANCE TO
Callosobruchus maculatus F.

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ABSTRACT

Four cowpea cultivars: Carolina Cream, Balady, Ezmiirely, and Cream 7, and one local forage cowpea line were evaluated for resistance to cowpea bruchid. Based on percentage of infested pods under natural infestation in the field, cv. Ezmiirely was the most susceptible cultivar (22.3%), whereas cv. Carolina Cream was the most resistant (3.4%). A bioassay was conducted in the laboratory under temperature of 30°C and relative humidity of 70% to determine differences between cultivars/line in their resistance to cowpea bruchid. Percentage of seed weight loss after artificial infestation with the insect for cv. Carolina Cream was significantly lower (1.12%) than that of cultivars Balady (2.80%), Ezmiirely (4.43%), Cream 7 (3.53%), and the local forage cowpea line (20.13%). Percentage of eggs which developed to adults was 35.6% for cv. Carolina Cream, 59.0% for cv. Balady, 50.5% for cv. Ezmiirely, 53.6% for cv. Cream 7, and 90.2% for the local forage cowpea line. Results indicated that cv. Carolina Cream confined low level of resistance. Percentage of seed weight loss and percentage of eggs which developed to adults proved to be a dependable resistance index and can be used when selecting for resistance to cowpea bruchid.

INTRODUCTION

The cowpea bruchid (*Callosobruchus maculatus* F.) is one of the most serious insect pest of cowpea (*Vigna unguiculata* (L.) Walp.) in Egypt and many parts of the world. The other names used to refer to this dangerous insect are: pulse beetle (Vir 1982) and southern cowpea weevil (Akingbohunfibe 1976; Wasserman and Futuyama 1981). Cowpea cultivar differences in resistance to cowpea bruchid have been reported and the resistance level ranged from no resistance to low resistance (Gokhale 1973; Nwanze and Horber 1975; Akingbohunfibe 1976; Osuji 1976; Gatehouse et al. 1979 and 1983; Fatunla and Badaru 1983). It has been recommended to use more than one resistance index when conducting primary screen for resistance to cowpea bruchid (Janzen et al. 1977; Wasserman and Futuyama 1981).