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**Inheritance of Resistance to *Alectra Vogelii* in Cowpeas (*Vigna unguiculata* [L] Walp.)**

**ABSTRACT**

*Alectra vogelii* (benth) is a parasitic weed which causes significant yield reduction in cowpea (*Vigna unguiculata* Walp) in Tanzania. The objectives of this study were (i) to identify the type of gene action controlling the trait for resistance to *Alectra vogelii* in cowpeas and its heritability and (ii) to determine the effect of *Alectra vogelii* infestation on yield, yield components and seed protein content. Seven genotypes of cowpea were mated in half diallel and their F<sub>2</sub> progeny including parents were evaluated for reaction to *Alectra vogelii* infection in the field in two locations using the Randomized Complete Block Design (RCBD) with three replications. Highly significant ( $P < 0.001$ ) differences were found for *Alectra* emergency and infestation at Ilonga. General combining ability (GCA) effects and specific combining ability (SCA) effects for both *Alectra* emergency and infestation were statistically significant ( $P < 0.001$ ) and  $P < 0.05$  respectively). The estimate of Baker's ratio for *Alectra* emergency and infestation were 0.62 and 0.66 respectively. These scores indicate that both additive and non-additive gene actions influenced the trait for resistance to *Alectra* emergency and infestation with additivity being predominant. Narrow sense heritability estimates were found to be 0.41 and 0.44 respectively. Correlations of *Alectra* infestation and *Alectra* emergency with yield components revealed that the number of pods were the most negatively affected ( $P < 0.001$ ). This implies that indirect breeding for resistance or tolerance to *Alectra* infestation should endeavor to screen or breed for cultivars with high pod numbers. Statistical results related to Baker's ratio suggest that crossing carefully selected genotypes with resistance gene followed by selection at early segregating generation is the best method for improving this trait for resistance to *Alectra vogelii* in cowpea.