



Evaluation of cowpea cultivars for resistance to *Megalurothrips sjostedti* under insecticide applications

*Alabi, O.Y. ¹; Odebiyi, J.A. ² and Tamo, M. ¹

¹ International Institute of Tropical Agriculture, Ibadan, Nigeria; ² Department Of Crop Protection and Environmental Biology, Entomology Unit, University of Ibadan, Ibadan Nigeria.

Corresponding author email: jmkalabi@yahoo.com

ABSTRACT

Objectives of study: To investigate integration of host-plant resistance with insecticide applications for the management of the flower thrips *Megalurothrips sjostedti* on cowpea.

Methodology and results: The trials were carried out at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. Three resistant cultivars (Sanzisabinli, Sewe and IT90K-277-2) and one susceptible check (Ife-Brown) were evaluated under unprotected and two protection levels (endosulphan (organochloride) 35 EC and lambda-cyhalothrin (synthetic pyrethroid) 35 EC give the application rates of the insecticide also show the name of the insecticide, indicate the active ingredient). Unprotected plots gave very low yields due to their exposure to entire cowpea insect pest complex. The pest complex of cowpea in Nigeria during the trial was *Aphis craccivora*, *Ootheca mutabilis* and *Empoasca spp.* during the seedling stage; *Megalurothrips sjostedti*, during the flowering stage and *Maruca vitrata* during the flowering and early podding stage. The pod sucking bugs: *Clavigralla tomentosicollis*, *Riptortus dentipes*, *Nezara viridula* and



Anoplocnemis curvipes were encountered during the podding stage of the cowpea. Results showed that *M. sjostedti* larval mean population density is not reliable as a basis of categorizing cowpea cultivars as resistant or susceptible. Also, when cowpea was exposed to *M. sjostedti* infestations alone, the resistant cultivars performed best with low damage indices ranging from 2.6 to 3.3 ($p < 0.001$). Although grain yield of Sewe under full protection was low (485.1 kg/ha), factors conferring its inherent resistance to *M. sjostedti* could be further exploited. Sewe had low damage indices (3.1 = Resistant) when it was exposed to thrips infestations.

Higher grain yields obtained from Sanzisabinli plots (1679.1 kg/ha) under *M. sjostedti* infestation and low, negative cost-benefit ratios (1.5 and -6.0, respectively) obtained for IT90K-277-2 and Sanzisabinli, respectively suggests that these cultivars possess significant resistance to *M. sjostedti* and there is no need to chemically protect them against thrips infestations.

Conclusion and application of findings: Judicious application of pesticides based on resistance levels of cowpea to pests can therefore minimize insecticide applications and consequently reduce costs and environmental hazards.

Key words: *Vigna unguiculata*, *Megalurothrips sjostedti*, lambda-cyhalothrin, endosulphan, resistance host plant resistance.