Efficacy of hexacopter UAV (ANGRAU-PUHSPAK) spraying in managing tobacco caterpillar, *Spodoptera litura*(Fab.) in groundnut

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ABSTRACT

The present study was conducted on Groundnut crop to manage Spodoptera litura by chemical application with UAV sprayer in Operational Research Project (ORP), Bapatla District, Andhra Pradesh during rabi 2021-22 and 2022-23. The treatments imposed are in RRBD experimental design with five treatments and four replications with 100%(T1) , 75% (T2) and 50% RDP(T3) with UAV sprayer and 100% RDP with human backpack sprayer (T4) and a control plot with only water spraying with UAV sprayers. The bioefficacy study showed that spraying with UAV sprayer (T5) is more efficient and precise in application and resulted in better control in Spodoptera litura larvae, foliar damage and with zero phytotoxicity. Spraying was done at 40 days after sowing (DAS) with Novaluron 5.25% + emamectin benzoate 0.9% EC, Flubendiamide 20% WG and Emamectin Benzoate 5% WG at seven days interval. Treatments with 100% RDP of UAV spraying (T1) shown highest overall mean reduction of foliar damage with 66.41% foliar recovery, 59.82%, 50.35% and 61.59% and 50.7%, 49.2%, 40.0%, 46.28% in T1,T2,T3,T4 respectively during rabi 2021-22,2022-23 and T1,T2,T4 were at par in their efficacy in both seasons. A flight height of 1.0 m height sprayed above canopy, 4.5 m/s during flowering to harvest stage. The recommended dosage with UAV sprayer, Novaluron 5.25% +Emamectin benzoate 0.9% EC with 120 ml $acre^{-1}$, Flubendiamide 20% WG with 90 gm $acre^{-1}$, Emamectin Benzoate 5% WG 75 gm $acre^{-1}$ was found effective without compromising bioefficacy.

Key Words : Emamectin Benzoate 5% WG, Flubendiamide 20% WG, Groundnut, Novaluron 5.25% + Emamectin benzoate 0.9% EC, *Spodoptera litura*, UAV sprayer.