

**THE ROLE OF ADJUVANTS ON THE EFFICIENCY
AND PERFORMANCE OF CERTAIN LOCALLY
FORMULATED PESTICIDES**

By

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ABSTRACT

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This study aimed to preparation new trend of locally lambda cyhalothrin (Emulsion Oil in Water and Oil Dispersion) pesticides formulations compared with conventional one (Emulsifiable Concentrate), with evaluating the effect of commonly used agricultural adjuvants (Argal and Techno oil) upon addition to these formulations. Adjuvants are considered to be safer and more friendly to the (eco-system) as they decrease the application rate of pesticides. Data demonstrated that the results of the physical and chemical properties for the three types of formulations pass in all parameters for these formulations, spray solutions and the active ingredient content were within the acceptable limit. Adding adjuvants to formulated pesticides caused some changes in the physical and chemical properties of the spray solutions. These changes increased the effectiveness of these formulations aganist cotton leaf worm and decreased the residue on cotton crop. Using Argal adjuvant decreased surface tension and enhanced spray solution which lead to increasing the deposit in the treated surface of the plant. Results showed that M3 gave most increase in average residual effect than the pesticide alone (M1). The highest effectiveness was that of EW M3 with improvement insecticidal efficiency of lambda-cyhalothrin against 4th instar larvae of cotton leafworm. LC50 for EW , OD and EC were (10.57 , 5.46 and 5.1 ppm) respectively ,with the half recommended dose. These results indicated that adjuvants increased the effectiveness of lambda-cyhalothrin formulations. Therefore, adjuvants may be used to reduce the number of applications per season and the application rates of insecticides.

Key words: Adjuvant, Physico-chemical properties, lambda cyhalothrin, emulsion oil in water, oil dispersion, emulsifiable concentrate, insecticidal effectiveness, cotton leaf worm, residues.

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