Determination of Mechanism of Insecticide Resistance Through Synergist, *s's's'*- tributyl phosphorotrithioate (DEF) in *Spodoptera litura* (Fab.) in Cotton

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ABSTRACT

In the present study the synergist, *s's's'*- tributyl phosphorotrithioate (DEF) was tested with conventional insecticides to know their synergistic effect on resistant Guntur strain of *Spodoptera litura* during *kharif* 2007-08 and 2008-09. Results revealed with synergistic factors of 2.85 and 2.90 at LD_{50} and 3.32 and 3.13 at LD_{90}, during *kharif* 2007-08 and 2008-09, respectively with chlorpyriphos. The corresponding synergistic values for quinalphos were 2.86 and 2.95 at LD_{50} and 3.42 and 3.34 at LD_{90} level. The synergistic factors for endosulfan were 1.19 and 1.43 at LD_{50} and 1.19 and 2.87 at LD_{90} level and the corresponding synergistic factors were 2.65 and 3.66 at LD_{50} and 2.47 and 3.74 at LD_{90} level for cypermethrin while these values were 2.18 and 3.27 at LD_{50} and 2.14 and 2.90 at LD_{90} level for methomyl. The level of resistance to chlorpyriphos, quinalphos, endosulfan, cypermethrin and methomyl were brought down significantly with DEF.

Key words : Insecticide resistance, *Spodoptera litura*, *s's's'*- tributyl phosphorotrithioate.