

# **Determination of Mechanism of Insecticide Resistance Through Enzyme Estimation in Tobacco Caterpillar, *Spodoptera litura* (Fab) in Cotton**

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## **ABSTRACT**

The activity of acetylcholine esterase (AChE) in the third instar larvae of *Spodoptera litura* was  $0.994 \pm 0.06$   $\mu$  moles / min / ml of enzyme in Guntur strain while it was  $0.742 \pm 0.03$   $\mu$  moles / min / ml of enzyme in Prakasam strain. However the activity of carboxylesterase (CE) was  $274.99 \pm 4.41$  n moles / min / mg protein in Guntur strain while it was  $227.48 \pm 3.95$  n moles / min / mg protein in Prakasam strain. The glutathione *S*- transferase (GST) activity was  $0.047 \pm 0.01$   $\mu$  moles / min / mg protein in Guntur strain while it was  $0.039 \pm 0.01$   $\mu$  moles / min / mg protein in Prakasam strain. Higher levels of these three enzyme assays were found in Guntur strain compared to Prakasam strain of *S. litura*.

**Key words** : Acetylcholine esterase (AChE), Carboxylesterase (CE), Glutathione *S*- transferase (GST), *Spodoptera litura*.