

# **Insecticidal activity of *Kirinyuh* leaf extract (*Chromolaena odorata* L.) against armyworm *Spodoptera litura* F. (Lepidoptera: Noctuidae)**

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**Presented in The 5<sup>th</sup> International Conference on Tropical Studies and Its Applications**

**Mulawarman University**

**Samarinda, 6<sup>th</sup> October 2021**



***Chromolaena odorata*** is a tropical and subtropical species of flowering shrub in the sunflower family. In the nineteenth century *this invasive* plant, escaped from the botanical gardens at Java (Indonesia) and Peradeniya (Sri Lanka)

Bioactive compound of *Kirinyuh* leaf extract: *alkaloid, terpenoid, flavonoid, kuinon* dan *tannin, polifenol, steroid, triterpenoid, monoterpen, dan seskuiterpen* (Hadi and Rully, (2004); Andi, 2007).



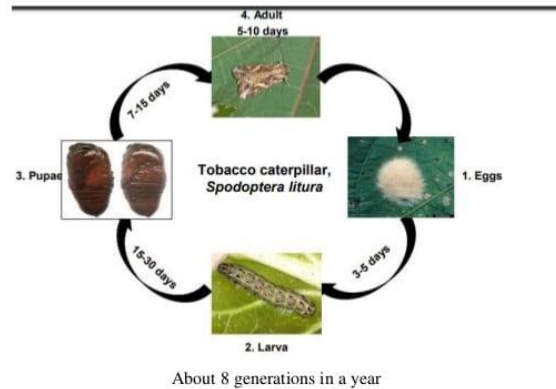


❖ Tropical armyworm *S. litura* (Lepidoptera; Noctuidae) is a serious polyphagous pest in Asia, In total, 87 species of host plants that are parasitized by *S. litura* are of economic importance.

## The damages symptom



## Life cycle(32-60 days)



Potential of Kirinyuh plant used as botanical insecticide?

# Materials and Methods

## Insect preparations



Natural diet

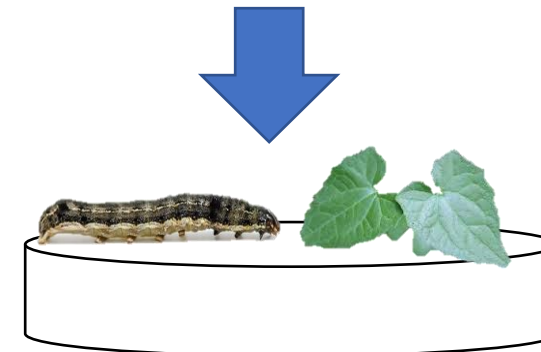


*Mikania micranta*



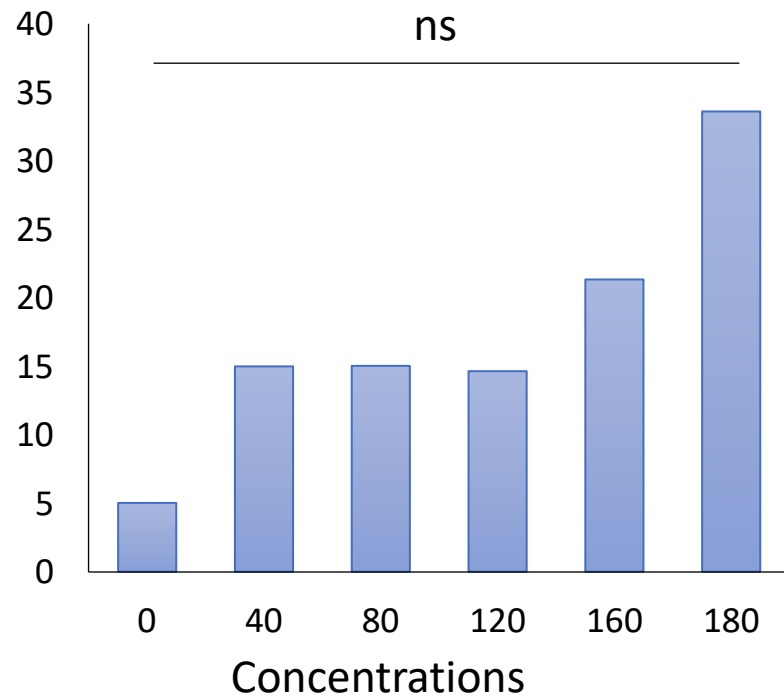
5 levels of concentration

$P_0 = 0 \text{ g.l}^{-1}$  control,  
 $P_1 = 40 \text{ g.l}^{-1}$   
 $P_2 = 80 \text{ g.l}^{-1}$   
 $P_3 = 120 \text{ g.l}^{-1}$   
 $P_4 = 160 \text{ g.l}^{-1}$   
 $P_5 = 200 \text{ g.l}^{-1}$

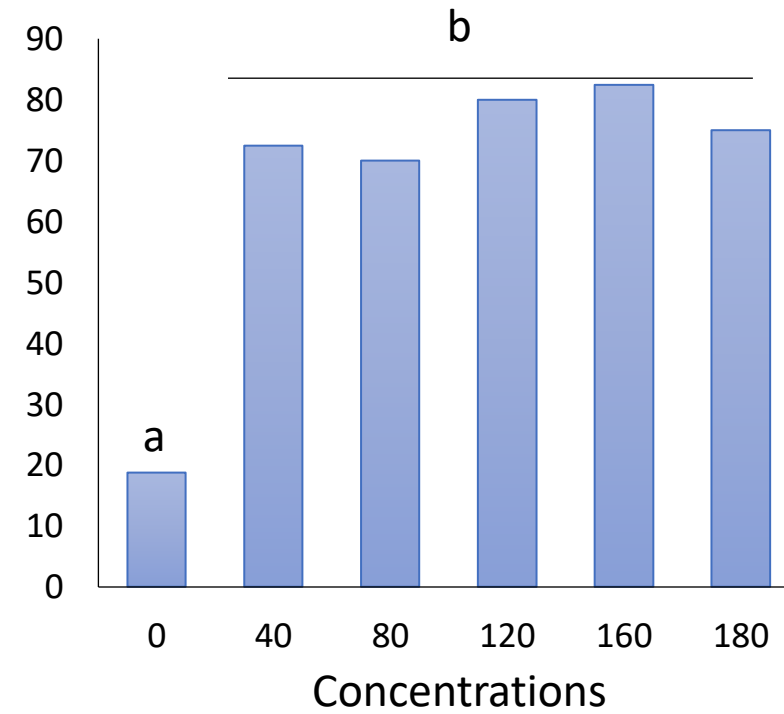


# Results

## Feeding activity

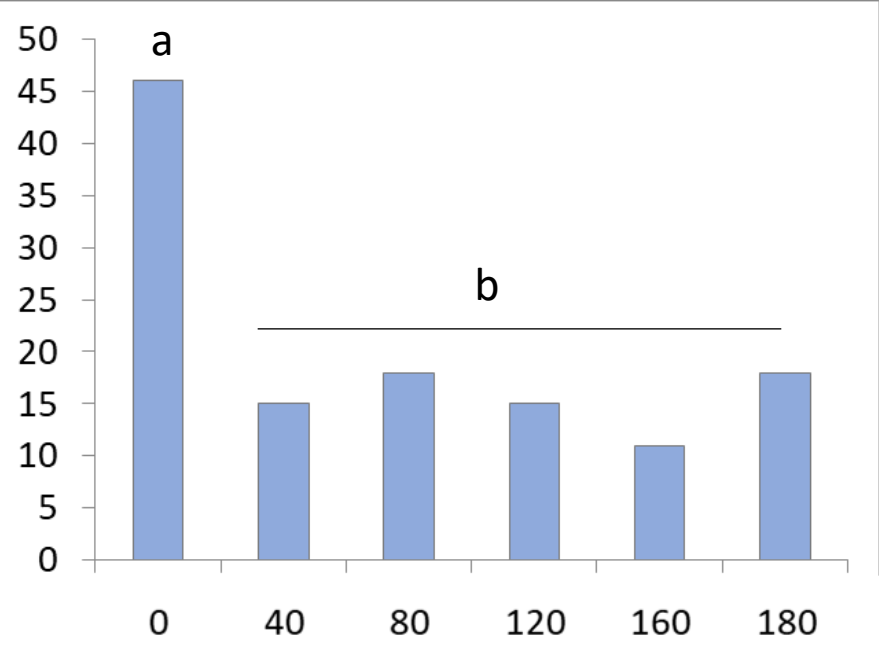


## Larvae mortality



# Imago formation failure

# Damages Sign



Control



Treatment



Normal moth



Malformed moth

# Conclusion

The results showed that the Kirinyuh leaf extract treatment with a concentration of 40 g-l significantly increased the mortality of armyworm larvae by 72.5%. Kirinyuh leaf extract also increased imago formation failure by 86.3%. This result suggests that Kirinyuh has potential use as a botanical insecticide to control armyworms



# Thank you



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