

PP19. METHOD OF COMBATING THE QUARANTINE PEST OF COTTON

HELICOVERPA ARMIGERA

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In recent years, many chemical compounds have been shown to be effective against crop insects but the practical efficacy of only a few compounds has been observed.

In this work, for the first time, the insecticidal activity of the 1,3,4-oxadiazole derivative against the global crop pest - *Helicoverpa armigera* was evaluated in laboratory, the toxicity (LD50) of 1,3,4-oxadiazole derivative was evaluated against the insect, as well as the effectiveness against *H. armigera* in the field.

It was found that the 1,3,4-oxadiazole derivative at 0.1 mg/mL caused 65.5% -69.0% mortality of larvae *H. armigera* after 24 - 48 hours of incubation. The toxicity of SD-79 against larva *H. armigera* was LC50 0.42 mg/mL.

The insecticidal activity of the 1,3,4-oxadiazole derivative was studied for the first time in vitro against *Helicoverpa zea*, *Spodoptera frugiperda*, and *Trichoplusia ni* insect cells. The results obtained confirm that 1,3,4-oxadiazole derivative at a dose of 10 µM/mL exhibits strong toxicity against cells of various cutworm species, which is confirmed in the experiment in vivo.

The field trials of effectiveness against larvae *H. armigera* were conducted in the Tashkent region during the 2022 cropping season. The results of field trials showed that on the 7th day, the effectiveness of 1,3,4-oxadiazole derivative at a rate of 0.2 kg/ha against larvae *H. armigera* was 56.0% compared to the control, 11.0% more compared to the insecticide BI-58 (a.i. dimethoate).

Thus, it can be assumed that the 1,3,4-oxadiazole derivative can control the number of larvae *H. armigera* with the best control efficiency of more than 58.5% at an increased level of economic damage threshold in the field conditions of the Tashkent region.