

## عنوان مقاله:

Characteristic of resistance to dichlorvos and biochemical mechanisms in the greenhouse strains of *Frankliniella occidentalis* (Thysanoptera: Thripidae)

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## خلاصه مقاله:

The western flower thrips (WFT), *Frankliniella occidentalis* (Pergande) (Thysanoptera: Thripidae) is an invasive pest in greenhouse with high potential to cause damage to crops. There are a limited number of effective insecticides to manage this pest and several cases of chemical control failures have been reported in Iran which can be due to resistance to insecticides. To evaluate the status of insecticide resistance and possible resistance mechanisms, eight Iranian strains of *F. occidentalis*, collected from Tehran, Markazi, Alborz, Qazvin, Isfahan, Yazd (M and B) and Kerman provinces, were assayed against dichlorvos as a recommended insecticide for chemical control of thrips. Compared with the susceptible strain (Isfahan), two strains collected from Yazd had the lowest susceptibility to dichlorvos (Resistance Factor = ۲.۱۴ and ۲.۰۴ fold). Bioassay by synergists and enzyme assays demonstrated interfering of carboxyl esterase and glutathion S- transferase in Yazd M strain. The esterase inhibitor, triphenyl phosphite (TPP), and Glutathione S-transferase inhibitor, diethyl maleate (DEM), synergized the toxicity of dichlorvos in the Yazd M strain, (Synergistic Ratio = ۵.۲۸ and ۱.۷۹ fold, respectively). Also, carboxylesterase (for  $\alpha$ - naphtyl acetate and  $\beta$ - naphtyl acetate) and glutathion S- transferases activities in this population were ۱.۶۹, ۷.۳۱ and ۰.۹۷ fold higher than in the Isfahan strain. Furthermore, dichlorvos resistance did not significantly diminish after several months. Based on our results, we suggest that dichlorvos should be removed from the control program of this pest

## کلمات کلیدی:

carboxylesterase, glutathione s-transferase, bioassay, stability of resistance

## لینک ثابت مقاله در پایگاه سیویلیکا:

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