

## Resistance to Bifenthrin and Resistance Mechanisms of Different Strains of the Two-Spotted Spider Mite (*Tetranychus urticae*) from Turkey

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Nine different strains of the two-spotted spider mite *Tetranychus urticae* Koch (Acari: Tetranychidae) were collected on cotton from Adana, Antalya, Izmir, Manisa and Urfa in Turkey. Their responses to bifenthrin were investigated using conventional bioassay and biochemical assays. LC<sub>50</sub> and LC<sub>90</sub> values of bifenthrin were determined for all strains by using a residual bioassay with a petri dish-spray tower. Resistance ratios were determined by comparing the samples with a standard susceptible strain, GSS. The resistance ratios of the strains ranged from <1 to 669-fold (at LC<sub>50</sub>). Of the investigated field strains, only three (two from Adana and one from Urfa) were resistant to bifenthrin. There was a correlation between esterase enzyme activity and bifenthrin resistance according to polyacrylamide gel electrophoresis and microtiter plate assays in the three resistant strains.

KEY WORDS: *Tetranychus urticae*; two-spotted spider mite; resistance; bifenthrin; esterase; cotton.

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