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Resistance of *Aphis gossypii* (Homoptera: Aphididae) to selected insecticides on cotton from five cotton production regions in Shandong, China

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Abstract:
Resistance of cotton aphid (*Aphis gossypii* Glover) collected from four leading cotton producing regions and one non-cotton producing region in Shandong Province, China, in 1985, 1999, and 2004 to fenvalerate, omethoate, imidacloprid, acetamiprid, carbosulfan, and endosulfan, was determined on cotton (*Gossypium hirsutum* L.). Dose-response results indicate that *A. gossypii* became highly resistant to fenvalerate, and the resistance ratios (RRs) increased from 30–370-fold in 1985 to 370–2150-fold from different regions as compared with the susceptible population (S). *A. gossypii* also exhibited strong resistance to imidacloprid and acetamiprid with RRs of 17- to 97-fold in 2004. Resistance of *A. gossypii* to omethoate varied greatly among the five geographical regions, and the RRs ranged from 5- to 80-fold. In contrast, the resistance to carbosulfan did not significantly increase from 1999 to 2004 in all regions. The information from this study would be helpful for management of *A. gossypii* on cotton in those regions.

Keywords:
Aphis gossypii, cotton, insecticide resistance, resistance management

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