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Resistance camparison of different populations of the diamondback moth, *Plutella xylostella* (L.) (Lep.: Plutellidae) to conventional insecticides in central regions of Iran

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The diamondback moth, *Plutella xylostella* (L.), is the most important pest of cruciferous plants in Isfahan, Alborz and Tehran provinces of Iran. The misuse of insecticides against *P. xylostella* has led to several problems such as resistance in many field populations of the pest. The present study aimed to evaluate the efficacy of currently-in-use insecticides against *P. xylostella* in cabbage fields of south Tehran, Mohammad shahre Karaj and Mobarake Isfahan province. The vulnerability of *P. xylostella* larvae to four insecticides, including Indoxacarb, Hexaflumuron, Chlorpyriphos ethyl and Thiodicarb was tested. The leaf-dip method was used for conducting bioassays. Bioassay tests were performed using the insecticides with five different concentrations, six replications for each concentration, and ten third larval instar of *P. xylostella* for each replication under standard environmental conditions (25±2°C, 70±5% RH and 16L:8D h photoperiods). The LC50 value of Indoxacarb, Hexaflumoron, Thiodicarb and Clorpyriphos ethyl for Mobarake population were 7.72, 7.32, 39.14, and 22.26, ppm. For south of Tehran were 1.02, 5.18, 26.50, and 64.90, ppm and for Mohammad shahre Karaj were 2.35, 11.79, 16.44, and 25.38, ppm, respectively. Pest populations of Mohammad shahre Karaj, Mobarake Isfahan, Mohammad shahre Karaj and Mobarake Isfahan are more resistant to Indoxacarb, Hexaflumuron, Chlorpyriphos ethyl and Thiodicarb insecticides, respectively, compare to other populations.