

SUSCEPTIBILITY OF COCKROACHES TO LAMBDA CYHALOTHRIN AND CYPERMETHRIN IN HOSPITALS OF TEHRAN UNIVERSITY OF MEDICAL SCIENCE (BLATTARIA: BLATTELLIDAE)

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Abstract The German cockroach is the most common cockroach found indoors, such as hospitals, homes, restaurants, etc. In hospitals, because of the presence of adequate food and living environment, they can develop into large population and live throughout the buildings. They can contaminate food with different pathogens, on the other hand the nature of hospitals especially the gynecologic, infectious and hematologic centers are attractive for cockroaches and as the result they can distribute the causative agents. Therefore, the control of this insect is always carried out in hospitals by non professional pest control persons. With regards to high amounts of insecticide applied in hospitals, the chances of development of resistance is high.

The aim of this study was to determine susceptibility of different strains of *Blattella germanica* L. to Icon (Lambdacyhalothrin) and Cypermethrin insecticides. The results of this study can be used to design control programs for environmental impact and economic risks to be minimized.

The strains were collected from 5 hospitals of Tehran University of Medical Science (Emam, Dr. Shriatii, Markaz e Tebi, Ziaeian, Baharlou). The samples were collected from April 2002. Initially, a systematic inspection was carried out to determine the presence and activity location of cockroaches and the places to trap were selected.

The results of collected sample tests were compared with the tests of sensitive strains which have been maintained for many years in the insectarium. Susceptibility tests were carried out on the 1-3 days nymph. To do the susceptibility tests, active ingredients lambdacyhalothrin and cypermethrin were selected. The test approaches were according to the WHO protocol.

Susceptibility tests on the 1-3 day nymphs indicated that the German cockroach has different patterns of susceptibility to insecticides tested. The strains of Emam, Dr. Shriatii, Markaz e Tebi, Ziaeian and Baharlou hospitals were resistant to cypermethrin and indicated changes to Lambdacyhalothrin means that this pest is going towards tolerance.

Resistance might be due to the current use of insecticide for German cockroach control and hence the development of cross resistance to different insecticides.