

# **Efficacy of sanitation and sanitary factors against the German cockroach (*Blattella germanica*) infestation and effectiveness of educational programs on sanitation in Iran**

## **ABSTRACT**

**Background:** Sanitation and educational programmes as tactics of the biorational control programme to affect bait performance against German cockroaches have been reported, but these are limited to discussion on the effect of these factors alone.

**Objective:** Investigate the effectiveness of sanitation and related factors on German cockroaches (*Blattella germanica*) in Iran.

**Methods:** Sticky traps were used to monitor cockroach infestations at three residential buildings comprising of 150 apartment units in the southwest part of Iran. Educational programmes using pamphlets, posters, and lectures to describe the importance of sanitation, exclusion, and low toxic control in biorational control approach was performed in the intervention groups of the surveyed residential buildings. The cockroach index and sanitation rate tables were tools to evaluate the infestation and sanitation. A questionnaire was distributed to collect information on unsanitary factors and occupants' attitudes towards sanitation.

**Results:** There was a significant correlation between infestation and poor sanitation. Furthermore, there was significant correlation between infestation and sanitation in a biorational system. The effectiveness of a comprehensive educational program on the improvement of unsanitary factors such as 'dirty and cluttered', 'unwashed dishes left at night' and 'leftover foods exposed at places' or 'food debris' was significant as it reduced upon cockroach infestation. Other relevant effects were also taken into consideration.

**Conclusion:** Sanitation has positive impact in reduction of German cockroach infestation.

**Keyword:** Biorational control; Education; German cockroach; Infestation rate; Sanitation rate; Unsanitary factors