Preventive inspections in hotels with dogs trained to locate the bed bug (*Cimex lectularius*): a human parasite insect

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Abstract

The bed bug (*Cimex lectularius*) is a human parasite with cosmopolitan distribution. Their bites produce the appearance of dermatitis highly itchy causing an important discomfort. Beg bugs are nocturnal and gregarious insects that tend to escape from the daylight hiding in refuges, where they can form aggregations from hundreds to thousands of individuals, commonly located close to the rest places of their hosts. The economic loss derived from the infestations (closed guest rooms during the pest control in hotels, image damage and contentious proceedings) can be significant. Our main goal has been to evaluate the proficiency of dogs trained to the olfactory detection of bed bugs in hotels. The detection dogs have been previously certificated by the AICA (Associazione Italiana Cani Anti Cimici) and are provided by the company Cani Anti Cimici® (www.canianticimici.com).

In the city of Rome, from October 2014 to September 2015, 84 bedrooms of 9 hotels have been inspected with 2 detection dogs.

In 8 of the 84 inspected rooms (9.5%) the dogs detected the presence of bed bugs that have been confirmed by the instructor after a visual identification. The inspection of each room with a detection dog requested an average time of 3’ minuts and 50” seconds (3’ 50”) whereas the time needed for a visual inspection is at least 30'. In the rooms where the dogs have detected the presence of bed bugs, the time of inspection increased, reaching 7’ 33”. The rate of false negative and false positive was 0%.

The preventive inspections with detection dogs in hotels have proved to be a fast and reliable strategy for the detection of infestation sources of C*. lectularius,* also when these were constituted by a low number of insects.