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The Perception of the Public Health Issues Connected with the Presence of *Blatta orientalis* and *Blattella germanica* in the Urban Areas of Tirana

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Abstract

Blattella germanica and *Blatta orientalis* are insects which are among the most prevalent in urban areas of Tirana city. The aim of this survey was to evaluate the information of the public health issues resulting from the presence of these pests in urban environments. The survey was conducted in various parts of the capital city attended by 200 respondents. Interviewees were selected at random method older than 18 years of both sexes and included family members, employees of food industries and students. The data obtained showed that 98% of the interviewees' people were able to identify insects as a result of their presence at work or residential settlement, 77% of the respondents considered as annoying insects. About 50% regarded as "dirty insects" implying the possibility of transmission of diseases and only 2% of the respondents claimed that the presence of *Blatta orientalis* and *Blattella germanica* in residential settlement or works places constitutes a health risk. The data obtained from our survey show that the level of information to residents of urban areas in Tirana is not at the appropriate levels compared with the presence of the majority of these insects in urban areas and suggests that we should work more on education and awareness of residents.

Keywords: Insects; survey; public perception; *Blattella germanica*; *Blatta orientalis*.

Introduction

B. germanica and *B. orientalis* are among the most common insects in Tirana urban areas. Food industry, schools, hospitals, hotels, and homes are some of the sectors most affected by these insects. Warm and wet climate and the lack of effective control measures by sectors mentioned above have favored their spread in large urban areas of Tirana.

B. germanica and *B. orientalis* can enter indoors through cracks, ventilation pipes, hydraulic systems, etc. Sometimes they are transported by the residents through their belongings. They are insects that multiply quickly and are difficult to control. *B. germanica* is more difficult to control because of being more addicted to the heat and it lives almost within the dwelling places while *B. orientalis* is present both outside and inside inhabitation. These insects like darkness and most of the life they passed hiding, with an exception which is the feeding time and usually overnight. These insects are not able to distinguish the odor more than a few centimeters away from the place where they were hiding, so environments sanitation plays an essential role in controlling these insects. *B. germanica* and *B. orientalis* cause economic damage (damage and contamination of the food) and serve as potential vectors for the transmission of bacteria (*Salmonella*, *Shigella*, *Escherichia coli* O157, etc.) viruses, protozoa, helminthes, etc (Agbodaze and Owusu, 1989; Burgess and Chetwyn, 1981; Cloarec *et al.*, 1992; Greene and Breisch 2002) as well as development / worsening of allergic diseases (Roberts, 1996).

Polls for insects and their control are used by urban entomologists of different countries to assess public opinion for more than a quarter century (Baldwin *et al.*, 2008) while in Albania these polls almost miss.

The aim of our survey was to evaluate the information of the public health problems resulting from the presence of these pests in urban environments in Tirana.

Materials and Methods

Our survey was conducted in Tirana area, which is the largest city of Albania where there is a greater number of residents. Tirana has a subtropical Mediterranean climate with a rainfall winter and the annual average temperature in July is +24°C and in January is +7°C, which favors the growth of *B. germanica* and *B. orientalis* throughout the year.

The survey was conducted in various parts of the Tirana attended by 200 respondents. Interviewees were selected at random scale older than 18 years and from both sexes, male and female including even family members, food industry employees and students. The questionnaire contained three relevant questions in alternatives regarding with insect identification, definition of insects according to respondents and the health risks arising from the presence of *B. germanica* and *B. orientalis*. In order to facilitate insect identification the questionnaire was illustrated with pictures for both insects.

Results and Discussions

Insects' identification

From all 200 participants in this survey, 98% of them were able to identify the insects due to their presence in work premises and homes. Furthermore, some of the respondents were able to describe some insect characteristics related to their morphology, life cycle, or their behavior (walking quickly, look more at night, are in brown color, etc). *Blattella germanica* was recognized and identified by respondents more easily because of its largest presence in urban centers while *Blattella orientalis* was less identified due to their infrequent presence.

Definition of insects according to respondents

77% of the respondents considered both of them "intrusive" insects because of their omnipresence in residential or work premises. While 50% of the respondents considered as "dirty" insects implying the possibility of disease transmission.

The health risks from the presence of *B. germanica* and *B. orientalis*

When interviewees were asked about the health risks that come from the presence of *Blattella germanica* or *Blattella*

orientalis most of them were astonished by the lack of information about the health risks which can be implied from them.

From all 200 respondents, only 2% of them were informed about the health risks caused by the presence of *Blattella germanica* and *Blattella orientalis* within the workplace or residence.

This part of the respondents consisted of food industry workers, students and fewer familiars who had taken on the job training or information from the internet after being in contact with them within a workplace / residence. Summarized study's results are presented in Fig.1

Polls for insects and their control are used by urban entomologists of different countries to assess public opinion for more than a quarter century (Baldwin *et al.*, 2008) while in Albania these polls almost miss, or published data are not available.

The obtained data from a survey with Florida residents showed that 68% of the population considered the pest insects very harmful, furthermore the crawling insects were the most costly 50% and difficult to control 42% (Rebecca Frances Williams Baldwin 2005)

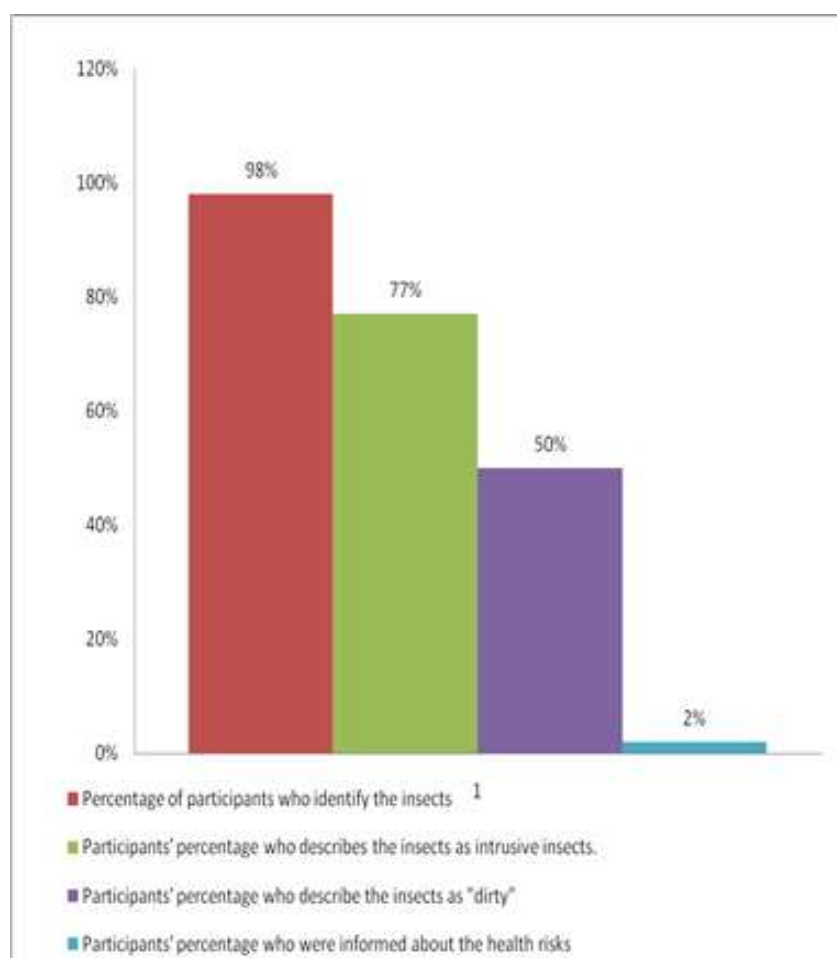


Fig. 1: Public perception regarding *B. germanica* and *B. orientalis*

From all 200 respondents, only 2% of them were informed about the health risks caused by the presence of *Blattella germanica* and *Blattella orientalis* within the workplace or residence. This part of the respondents consisted of food industry workers, students and fewer familiars who had taken on the job training or information from the internet after being in contact with them within a workplace / residence.

The data of our survey while covering relatively a small group of interviewees are an indicator that shows the lack of public information about health risks carried by *Blattella germanica* and *Blattella orientalis* in urban environments (work areas / residential) of Tirana where they are present. Obtained dates showed that we must work more on education and awareness of peoples of other sectors. Raising awareness of peoples would be associated with derogation of health consequences also it will have impacts in economy and environment while improving the quality of life of residents. It would help also to facilitate drafting and implementation of strategies for effective control of *Blattella germanica* and *Blattella orientalis*.

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