
Poster Session 1 – Population Dynamics

48 Population size and distribution of Norway rat, *Rattus norvegicus*, in the sewer system of Barcelona (Spain)

Sandra Franco¹, Jordi Pascual¹, Tomás Montalvo¹, Rubén Bueno², Fernando Sala², Víctor Peracho¹

¹Pest Surveillance and Control, Agència de Salut Pública de Barcelona, Barcelona, Spain, sfranco@aspb.cat

²Departamento de Investigación y Desarrollo (I+D), Laboratorios Lokímica, Catarroja-València, Spain

Urban rat population size in cities is usually unknown and cannot be considered when elaborating rat surveillance and control programs in municipalities. The Agència de Salut Pública de Barcelona, in the framework of the rodent surveillance and control program carried out in the city, started, in 2016, a project that included a study to determine the urban rat population size and to model its distribution in Barcelona. It was performed from December 2016 to November 2017 mainly in the accessible sewer system of the city, where rat densities are the highest and the Norway rat is present. Rats were censused with kill traps in 63 sewer sections (90 m long each). In each section, 30 traps were placed and checked daily during four consecutive nights. Several environmental factors, potentially related to rat abundance, were calculated for each section to determine which combination of them explained better the rat abundances found. Considering only those factors whose data could be obtained for the entire city, the result was a formula containing the amount of food establishments, the human population size, the streets' width and the canopy surface. With that information, a SIG model was elaborated to predict the rat abundance in all the accessible sewer system of Barcelona. In some areas the prediction matches closely with the abundance of citizen complaints for rats, but in general terms there is no correlation between them. This study provides, for the first time, the Norway rat population size in the accessible sewer system in Barcelona, which is estimated at $106,739 \pm 37,884$ individuals. Additionally, it provides information about their distribution in the city. The results of this study will modulate the rodent surveillance and control program in Barcelona. If the study is replicated in the future, it will allow for tracking the population dynamics in the city.

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Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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Editors:

Jens Jacob¹ and Jana Eccard²

¹Julius Kühn Institute, Federal Research Centre for Cultivated Plants,
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,
Toppeideweg 88, 48161 Münster, Germany

²University of Potsdam, Institute of Biochemistry and Biology,
Animal Ecology Group, Maulbeerallee 1,
14469 Potsdam, Germany

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