

Mosquito species distribution in mainland Portugal 2005-2008

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Abstract

Information on distribution and relative abundance of the mosquito fauna of mainland Portugal has been collected by several surveillance programmes and projects over a long period. The work presented here documents additional information provided by capture of adult mosquitoes by the use of CDC light traps baited with CO₂ in 48 localities in 13 districts in different parts of mainland Portugal during the period 2005-2008, and by larval surveys using dippers. More than 150,000 adult mosquitoes and 3,000 larvae belonging to 16 species were identified at the National Institute of Health / Centre for Vectors and Infectious Diseases Research. The three commonest species were *Ochlerotatus caspius*, *Culex pipiens*, and *Cx. theileri*. The most widespread species was *Cx. pipiens*, followed by *Culiseta longiareolata*. The composition and abundance of the different mosquito populations varied between geographical locations. Only larvae of two species, *Cx. hortensis* and *Cx. laticinctus*, were found. Some effects of collection methods on a complete picture of mosquito distribution and abundance are discussed.

Keywords

Mosquito distribution, vector surveillance, CDC Light Traps, Portugal

Introduction

An essential component of a mosquito-borne disease control programme includes a comprehensive mosquito surveillance plan that identifies the geographical distribution and relative abundance of potential vector populations (Ryan *et al.*, 2004). In Portugal, as in other European countries, important ecological changes due to future climate conditions are expected (Santos *et al.*, 2002). Portugal is currently recognized as a high risk country for the introduction of *Stegomyia albopicta* Skuse (Almeida *et al.*, 2008), a vector of several arboviruses, which is already present in Spain and other Mediterranean countries (Aranda *et al.*, 2006, Dalla Pozza & Majori, 1992). Furthermore another invasive species, *St. aegypti* L. was present in Portugal until 1956 (Ribeiro & Ramos, 1999) after which it was no longer detected on the mainland, but was reported in Madeira in 2005 (Margarida *et al.*, 2006).