

Abstract

# Monitoring for Native and Invasive Mosquitoes at the Limassol Port in Cyprus †

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## 1. Introduction

Throughout human history, human mobility between ports has been responsible for the transcontinental spread of vector-borne diseases such as the bubonic plague and vectors such as fleas, sandflies, and mosquitoes being transported even to small oceanic islands. In May 2005, the fifty-eighth World Health Assembly adopted the new International Health Regulations (IHR), which came into force in July 2007. One of the areas stressed in the IHR is building capacity for vector surveillance and control at points of entry and up to (at least) a 400 m perimeter around them. Joint Services Health Unit (JSHU), British Forces, Cyprus is responsible for monitoring and controlling the mosquito species in the UK Sovereign Base Areas in Cyprus (SBAs) and due to the close proximity of the SBAs to Limassol also monitors the Limassol port for mosquitoes. Limassol port is the main port for the island of Cyprus. The types of vessels regularly docking at Limassol port are container ships (29%), general cargo (10%), passenger ships (7%), pleasure crafts (5%), and offshore supply ships (5%). The maximum length of the vessels recorded to having entered this port is 363 m. The maximum draught is 13.7 m. The maximum deadweight is 85786 t.

## 2. Material and Methods

The port of Limassol, Cyprus was surveyed over seven years (2015 to date) for immature and adult mosquitoes using a variety of mosquito survey tools such as larval dipping, EVS CO<sub>2</sub> traps, Mosquito Magnet Traps, BG sentinel trap with BG lure, and oviposition traps.

## 3. Results

This work described the monitoring efforts at the port of Limassol. A range of artificial and natural breeding habitats including marshes and saltmarshes are present in close proximity to the port. Twelve species of mosquito were found to be associated with the Limassol port, namely *Aedes detritus*, *Aedes caspius*, *Aedes mariaae*, *Aedes cretinus*, *Anopheles claviger*, *Anopheles saharovi*, *Anophele algeriensis*, *Culex perexiguus*, *Culex pipiens*, *Culex hortensis*, *Culiseta annulata* and *Culiseta loniareolata*; all the mosquito species were native and common to Cyprus.

#### 4. Discussion

Despite considerable sampling effort over seven years, to date, no invasive imported mosquitoes were found. We should not, however, become complacent regarding the potential for importation of invasive mosquitoes in the future. This work provides baseline information on mosquito populations at the Limassol port and provides information on the integrated vector management scheme run by the Joint Services Health Unit, British Forces Cyprus at the Akrotiri peninsula and wider Limassol port area.

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