Invasive mosquito species love Italy: a history of invasion

Montarsi F. [1], Ravagnan S.[1] Drago A.[2], Martini S.[2], Arnoldi D.[3], Baldacchino F.[3], Rizzoli A.[3], Capelli G.[1]

[1]Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro (PD), Italy;
[2]Entostudio srl, Brugine (PD), Italy;
[3]Fondazione Edmund Mach, S. Michele all'Adige (TN), Italy

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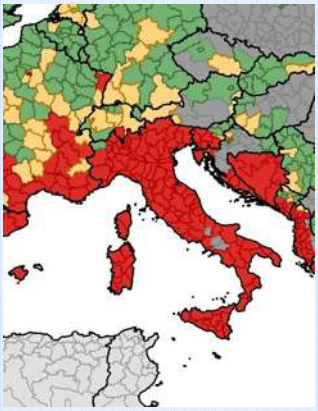
INTRODUCTION

Invasive mosquito species (IMS) belonging to genus Aedes are repeatedly recorded out of their native places. They are able to survive during the passive transport thanks to diapausing eggs and can adapt easily to a new environment. Invasive Aedes species are proven or potential vectors of important arboviruses and their establishment in new areas pose a threat for human and animal health. Several invasive Aedes species are now established in Europe, and Italy is one of the most infested European countries.

Aedes albopictus

First established population in 1991 in Italy, is now present throughout the country.

Asian tiger mosquito (Aedes albopictus)



Current distribution (July 2016) of Aedes albopictus. Detail of ECDC Map. Red: established; yellow: introduced; green: absent; grey: no data.

Aedes koreicus

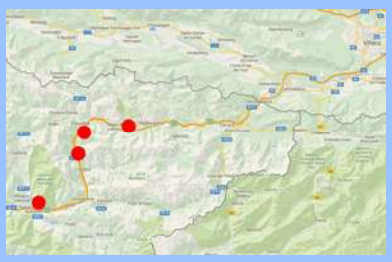
***Aedes koreicus* were found in 2011 in north-eastern Italy. Its spread is directing towards south and west from the original infested area and is now present in four Italian Regions. According to these records, northern Italy has a high probability to be invaded by *Ae. koreicus* in the next decade.**

Larva and adult of Aedes koreicus

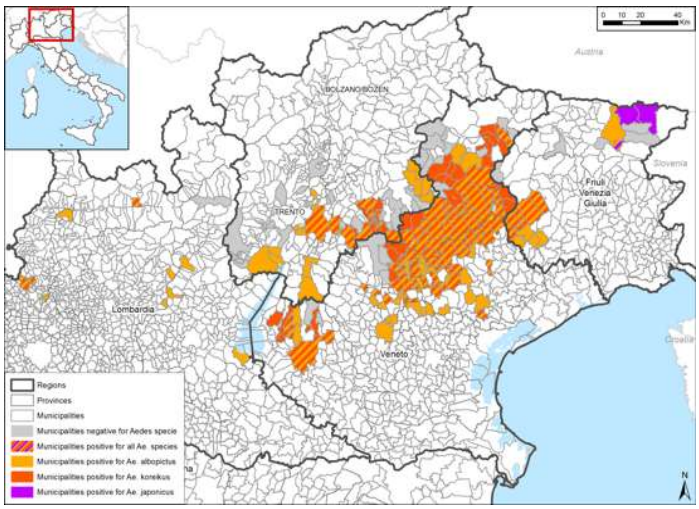
Aedes japonicus japonicus

Aedes j. japonicus was detected in 2015, again in north-eastern Italy. Larvae were found in July 2015 in three different sites in Udine province; the finding has been confirmed in March and July 2016.

Aedes j. japonicus



Area where Ae. japonicus was found. Red dots: findings of larvae



CONCLUSIONS

The north-eastern Italy is now colonized by three IMS. Also in the past, in the same area, other invasive species, Ae. atropalpus (1996) and Ae. aegypti (1972) were recorded but they were not established. Veneto is the region with the most frequent experience of invasive mosquito introduction in Italy. This is likely a consequence of the intensive trade of goods and thanks to an in intensive mosquito surveillance.
The three species develop in the same breeding sites and are often found in artificial container sharing the breeding sites with other mosquito species. The establishment of IMS complicates the current surveillance system and require well trained personnel for identification.
New competent vector of pathogens may represent a challenge for the Health System.

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