

New areas of Asian tiger mosquito (*Aedes albopictus*) invasion in North Eastern Italy



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Introduction

Since its introduction in Italy in 1991, the Asian tiger mosquito (*Aedes albopictus*) has colonized almost all Italian regions (Romi et al., 2009). Much attention has been devoted to this species because it is annoying and vector of arbovirus (Gratz, 2004). Recently the mosquito was found in mountain areas of Italy, overcoming the supposed altitude limit of 600 m.a.s.l.. From 1992 several monitoring programs aimed to assess the presence of *A. albopictus* involved municipalities of Veneto region. We report the results of this monitoring and of ovitrap sampling in some cities to estimate the population density.

Methods



The sampling sites monitored to assess presence of mosquitoes were private and public properties, tire depots and cemeteries. We have compared records of 1992-2004 period to 2005-2009 period. Five sites were monitored from June to November 2009 by ovitrap (30 traps per city; weekly collection) to assess annual distribution.

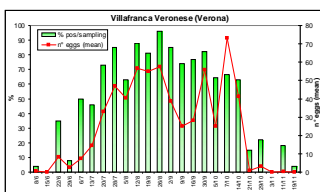


Results

A. albopictus (larvae or adults) spreading is reported in table 1. Now it is present in 475 (82%) municipalities, 92 (16%) more than past. In particular, new mountain areas (Belluno province) were previously not infested.

Provinces	Municipalities	1992-2004 positive (%)	2005-2009 positive (%)	Increasing
Belluno	69	0	13 (18.8)	13
Verona	98	49 (50)	73 (74.5)	24
Vicenza	121	72 (59.5)	97 (80.2)	25
Treviso	95	66 (69.5)	95 (100)	29
Venezia	40	40 (100)	40 (100)	0
Padova	106	106(100)	106 (100)	0
Rovigo	51	50 (98)	51 (100)	1
Total	580	383	475	92

Table 1- Tiger mosquito (*A. albopictus*) distribution in Veneto region from 1992 to 2009



Data of sites monitored by ovitrap are reported in table 2. The highest density of eggs was recorded in August in all sites (mean eggs/trap range 16.1-210.3). The municipality more infested was Legnaro (Padua province), located at sea level, with 38,265 eggs collected, the less infested was Feltre (Belluno province), with 2.661 eggs, located at 325 m.a.s.l. in an area recently colonized.

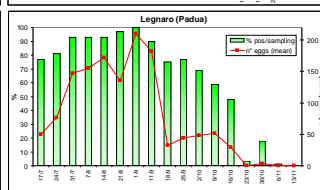
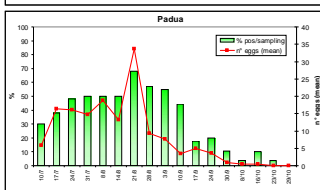
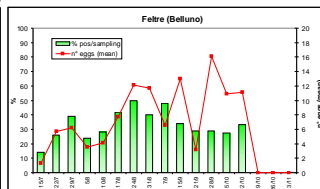
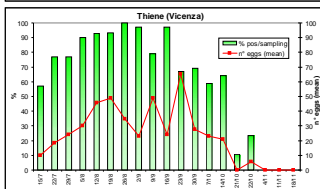


Table 2- Annual distribution of *A. albopictus* in 5 cities of Veneto region in 2009

Conclusions

The results show that *A. albopictus* is spreading in northern areas and at higher altitude. These data can be used by the local and regional authorities to monitor the expanding trend of this tedious mosquito, to control the effectiveness of disinfection actions and to design preventive plan on possible transmitted agents.

References

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- Gratz N. G., 2004. Critical review of the vector status of *Aedes albopictus*. Medical and Veterinary Entomology, 18: 215-227.