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ECOCLIMATIC DRIVERS OF SPATIO-TEMPORAL HOT SPOTS OF *Aedes albopictus* ABUNDANCE IN SOUTH EUROPEAN URBAN AREAS

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The stable colonization by *Aedes albopictus* of several south European urban areas represents an increasing public health threat due to the species competence in transmitting Dengue, Chikungunya and Zika arboviruses, whose expanding worldwide distribution is increasing the risk of an infected traveller to reach Europe. In fact, a Chikungunya outbreak has already occurred in northern Italy in 2007 and cases of autochthonous Dengue transmission have been recently reported from France and Croatia. Despite in the absence of vaccines the only way to prevent the risk of outbreaks of these diseases in Europe is mosquito control, this is rarely efficiently carried out by public administrations due to lack of appropriate resources to cover the large areas colonized by the species. It has been proposed that a more cost-effective method to prevent arbovirus outbreaks could be the focal treatment of hot-spot of highest mosquito densities. The aim of this work was to identify eco-climatic drivers of higher *Ae. albopictus* abundance on the basis of data from seasonal-round monitoring carried out over multiple years across and beyond the urban area of Rome and Bari. A fine scale (300 m radius) spatio-temporal dataset was built within each sampling site and exploited to analyse the effect of climatic (Land Surface Temperature, Daily Rainfall, Growing Degree Days), environmental (Land Cover as retrieved from digital multispectral aerial imagery) and demographic (human population density) variables on *Ae. albopictus* spatial abundance and temporal dynamics. Generalized additive mixed models highlighted a strong positive relationship between mosquito abundance and anthropic surfaces and population density and identified climatic drivers of the seasonal population dynamics. These results provide useful indications to prioritize public mosquito control measures in temperate urban areas in space and time for a more feasible and cost-efficient prevention of the risk arbovirus transmission in Europe.