DENGUE TRANSMISSION RISK MAPS IN ARGENTINA

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ABSTRACT

Dengue is an emerging disease that has become important in Argentina because of its vector's presence (Aedes aegypti) and its endemicity in neighbouring countries. Thematic maps were built for Argentina considering four main factors: population susceptibility to dengue virus infection (population density); entrance of the virus from endemic countries (main roads and airports); conditions for the vector (urbanization, altitude, minimum, maximum and mean daily temperatures) and virus extrinsic incubation period (EIP) completion in the mosquito before its death. EIP duration was modelled with a temperature-dependent function and considering life expectancies of 10, 15 and 20 days for the adult mosquito. The results show maximum risk of dengue transmission in the northern and north-eastern part of the country year-round and in the centre during the summer. Although life expectancy of the adult mosquito has a considerable influence on EIP completion, the north-east to south-west decreasing gradient is maintained. Assuming 20-day life expectancy, the EIP would be completed in almost any region of the country; whereas with 15-day life expectancy it would be limited to vector distribution area, and at 10 days it would be restricted to the northern extreme of the country.