**TOPIC:**
2) Mosquito-borne diseases (dengue, malaria, fiebre amarilla, zika, chikungunya)

**APPROACH:**
3. Pathogen-vector interaction

# A review on the mosquito vectors of Flavivirus in Argentina

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Infections caused by flaviviruses are among the most prevalent communicable diseases in the world, with mosquitoes being their main vector. There are about 3,500 mosquito species, of which only a small proportion transmit diseases. Knowledge of the vectors of these viruses is crucial for understanding the ecology of flaviviruses transmission cycles in the world and, particularly, in Argentina. The aim of this work is to describe the diversity of mosquito-borne flaviviruses, to detail the vector species involved (with evidence of infection in nature and competence assays with positive results) or potentially involved (with only evidence of infection in nature or positive competence assays) and to analyze their presence in Argentina and, in particular, in Buenos Aires Province. The ICTV Report on Virus Taxonomy was used to obtain information of known mosquito-borne flaviviruses and, for mosquito species, an extensive literature search was conducted using several academic search engines. 208 papers were consulted. There are 20 mosquito-borne flaviviruses and 30 considering subtypes. Of these 30 subtypes, 22 show evidence of human infection and 9 have evidence of circulation in Argentina (Bussuquara, Dengue 1/2/4, St. Louis Encephalitis, West Nile, Ilheus, Zika and Yellow Fever viruses). According to the available literature, 242 mosquito species were reported as vectors (45 confirmed, 197 probable) from the genera *Aedes* (82), *Aedeomyia* (2), *Anopheles* (33), *Armigeres* (1), *Coquillettidia* (10), *Culiseta* (8), *Culex* (69), *Deinocerites* (2), *Eretmapodites* (4), *Haemagogus* (5), *Mansonia* (9), *Mimomyia* (4), *Orthopodomyia* (1), *Psorophora* (7), *Sabethes* (4) and *Uranotaenia* (1). Of these, 36 species are present in Argentina, and 20 of them in Buenos Aires Province (4 *Aedes*, 2 *Anopheles*, 2 *Coquillettidia*, 6 *Culex*, 3 *Mansonia* and 3 *Psorophora*). In addition to the 9 flaviviruses reported in the country, others could be potentially introduced in the near future due to the presence of postulated mosquito vectors. Competence studies is highlighted as a vacancy area as the role that many of the species with evidence of infection could play in transmission cycles is unknown. It is worth mentioning that local information is scarce, and this is very important since most of the studies are from other continents, where the viruses and mosquitoes' strains are different from those of Argentina, so the results are not entirely extrapolable. This information is a valuable input to generate a potential risk map of these flaviviruses in Buenos Aires Province.