

Supplemental File S2: Temperature Dependence in Model Parameters

Micro-environmental temperatures and R0, Peña-Garcia et al.

Mosquito density was derived by Caminade from data in Kraemer et al 2015. Those values are as follows: For *Ae. aegypti* in the city of Neiva, mosquito density (m_1) was 731.721069, while in Sincelejo, $m_1=752.021729$, and in Soledad, $m_1 = 894.557617$. For *Ae. albopictus*, $m_2 = 668.480164$ for Neiva, $m_2= 383.251526$ for Sincelejo, and $m_2= 177.526230$ for Soledad. We used these same estimates to initialize adult mosquito density for derivation of temperature dependent adult mosquito density in the R_0 calculations for the Caminade and the Liu-Helmersson methods.

Across the three methods there were commonalities in included parameters:

- Biting rate
 - a for Liu-Helmersson and Mordecai methods
 - a_1 for method from Caminade
- Vector competence
 - b from Liu-Helmersson
 - bm from Caminade (transmission probability – host to vector)
 - c from Mordecai (probability mosquito becomes infected given exposure)
- Extrinsic Incubation Period (EIP)
 - EIP for Liu-Helmersson and Caminade
 - $1/EIR$ for Mordecai where EIR = extrinsic incubation rate
- Mosquito mortality
 - μ for Caminade and Liu-Helmersson
 - $1/l_f$ for Mordecai where l_f = lifespan in days of the mosquito

Below are the comparisons of the shared parameters across methods with respect to temperature sources and cities.

Figure S2.1: Temperature-dependent estimate of biting rate of *Ae. aegypti*

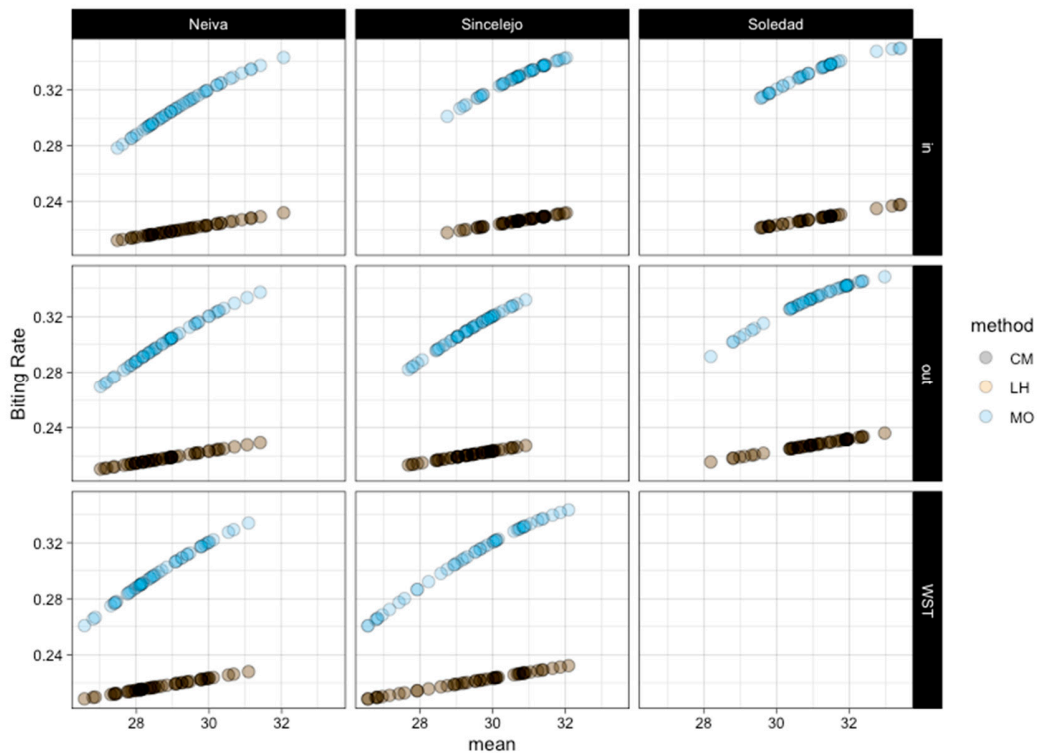


Figure S2.2: Temperature-dependent estimate of the probability of successful transmission from human to mosquito (of *Ae. aegypti*) as an estimate for vector competence.

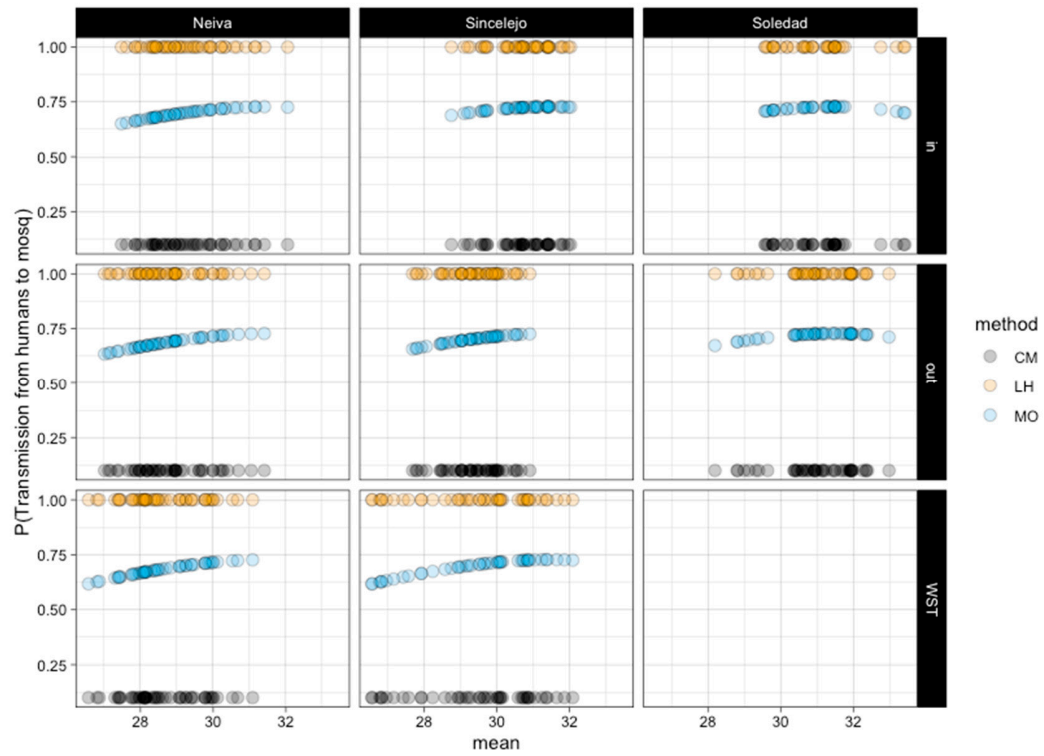


Figure S2.3: Temperature-dependent estimate of the extrinsic incubation period of *Ae. aegypti*

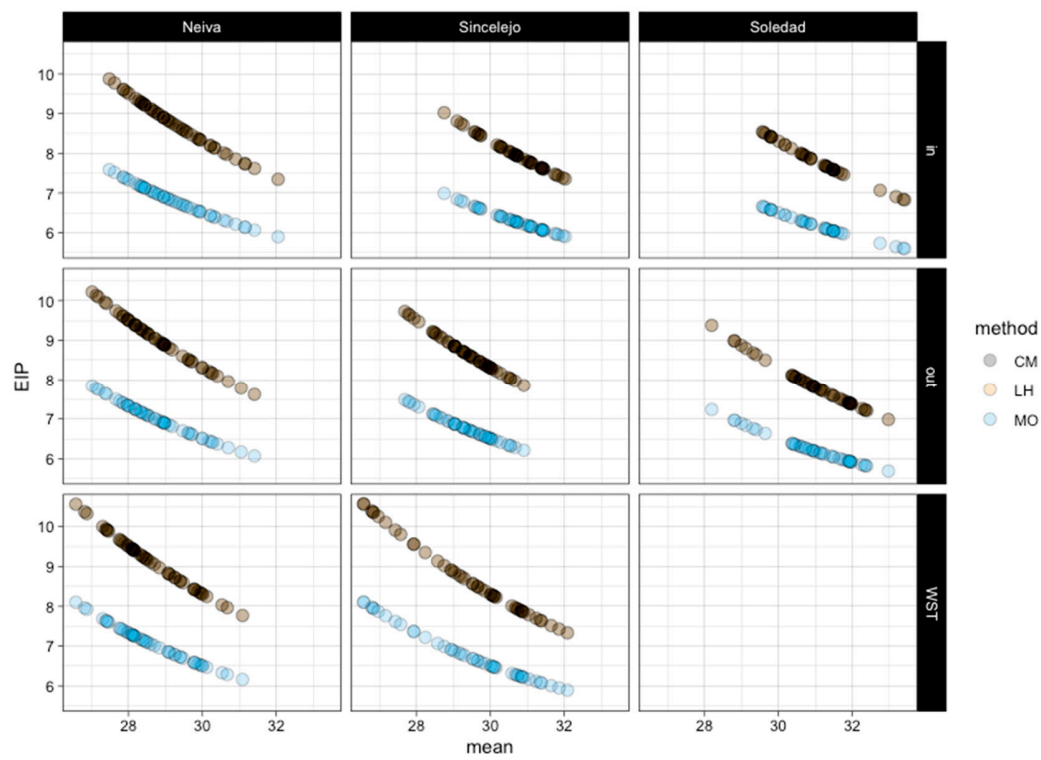


Figure S2.4: Temperature-dependent estimate of the mosquito mortality of *Ae. aegypti*

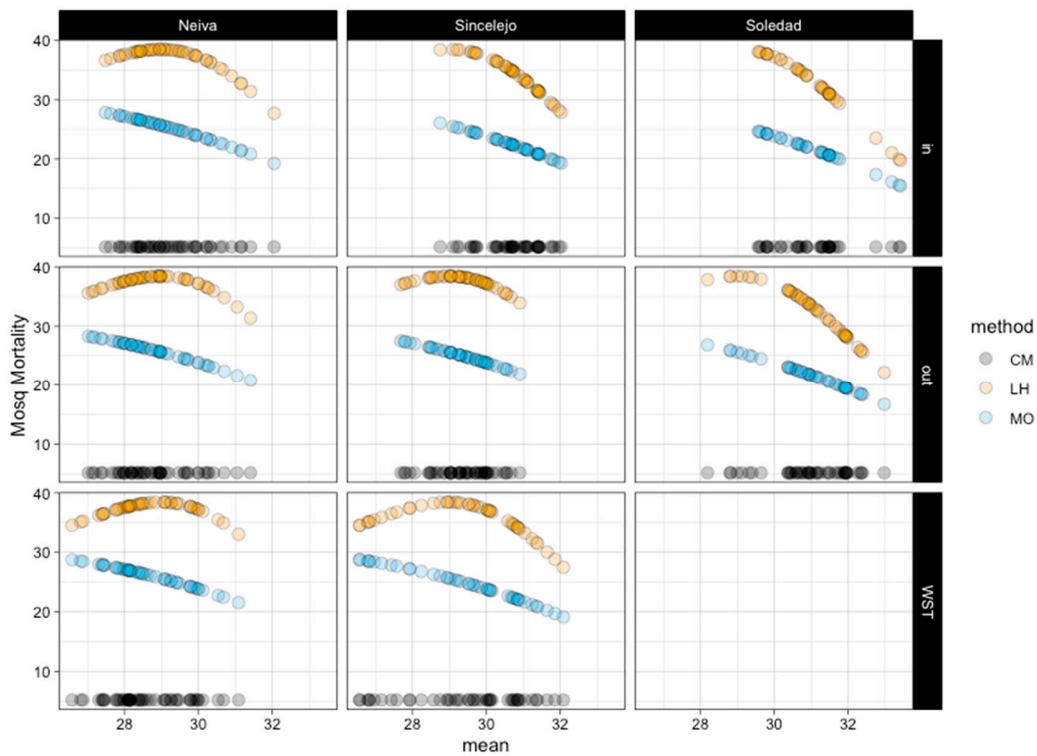


Figure S2.5: Temperature-dependent estimate of the R0 for each method

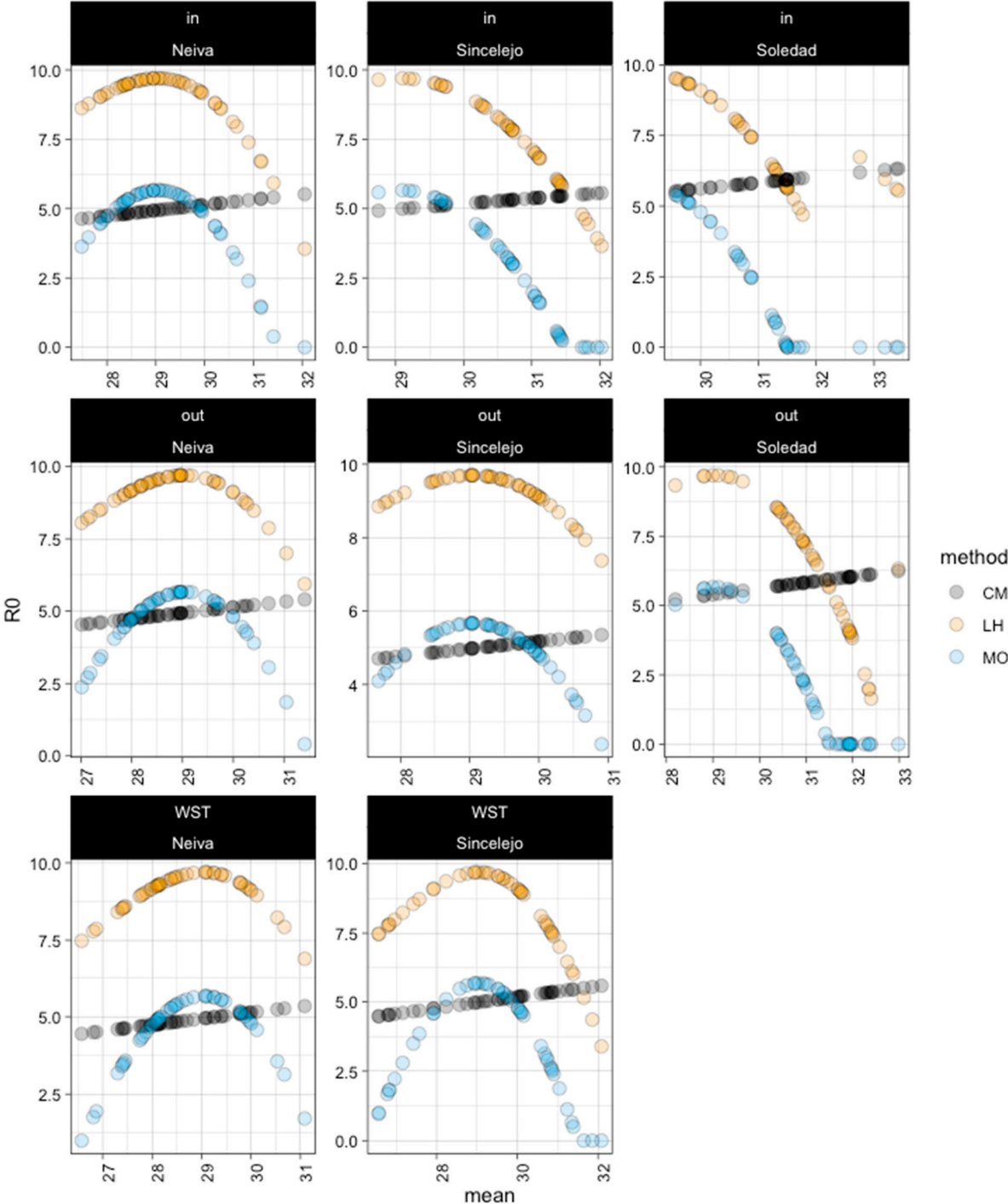


Figure S2.6: Distributions of the R0 values per city x data source x modeling method. All distributions were significantly different except for the cases of Soledad vs. Sincelejo (Mordecai method), Nevia vs. Sincelejo (Liu-Helmersson method) and Soledad vs. Sincelejo (Liu-Helmersson method).

