Ecological effects on underdominance threshold drives for vector control

Doran Khamis, Claire El Mouden, Klodeta Kura, Michael B. Bonsall

PII: S0022-5193(18)30346-1
DOI: 10.1016/j.jtbi.2018.07.024
Reference: YJTBI 9549

To appear in: *Journal of Theoretical Biology*

Received date: 12 October 2017
Revised date: 17 July 2018
Accepted date: 19 July 2018

Please cite this article as: Doran Khamis, Claire El Mouden, Klodeta Kura, Michael B. Bonsall, Ecological effects on underdominance threshold drives for vector control, *Journal of Theoretical Biology* (2018), doi: 10.1016/j.jtbi.2018.07.024

Highlights

- Two engineered underominance systems for mosquito control are investigated
- Male-only releases must be larger than bi-sex releases to trigger the gene drive
- Female-specific lethality averts more disease cases than bi-sex lethality
- Genetic lethality efficiency is less important than ambient transgene fitness cost
- Mating success and longevity of engineered insects strongly governs drive success