

The suppressive potential of a gene drive in populations of invasive social wasps is currently limited

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Supplementary Material

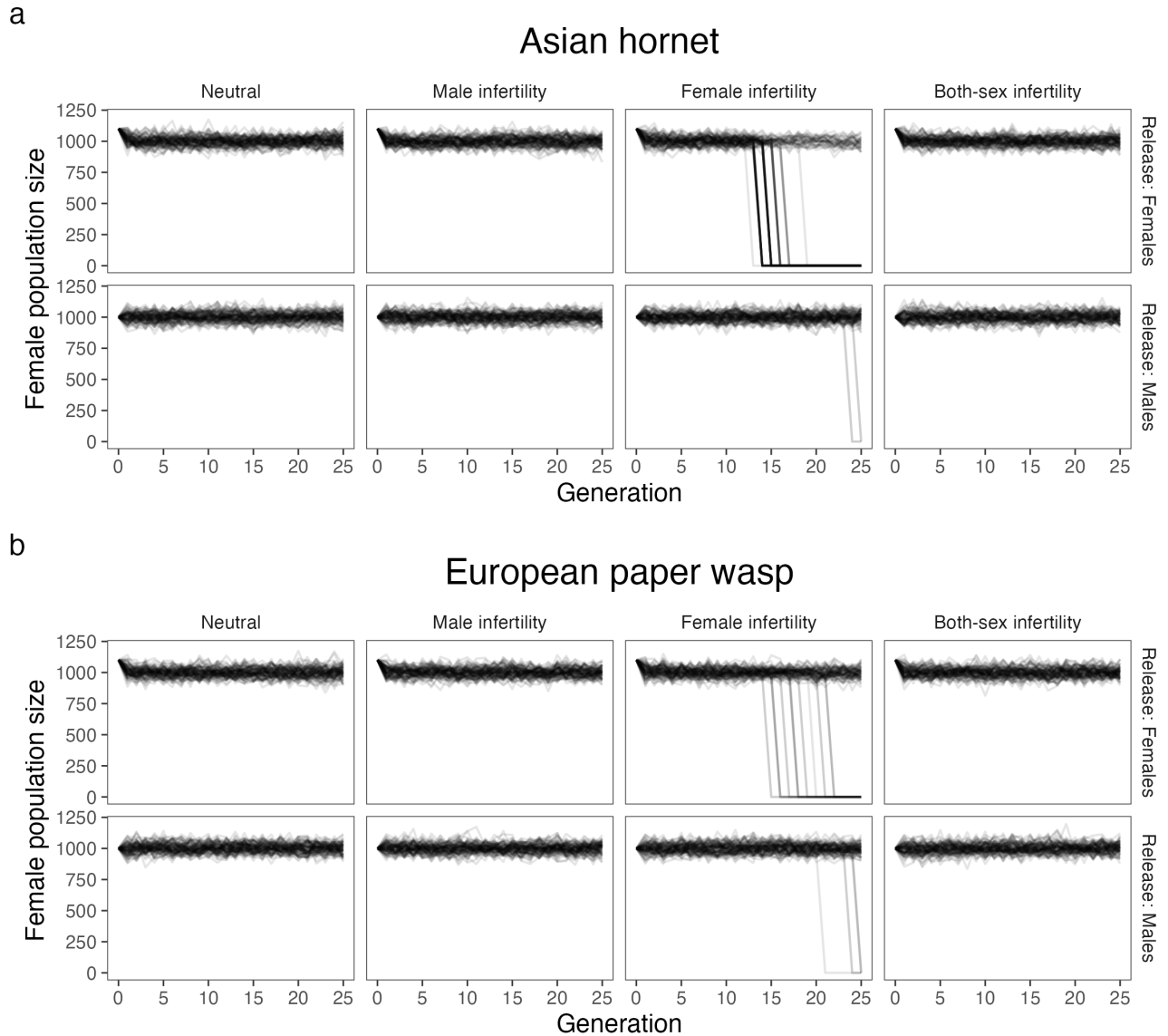


Figure S1. Female population size for Asian hornet (**a**) and European paper wasp (**b**) by gene drive strategy and release carriers (females or males). The different strategies (neutral, male infertility, female infertility, and both-sex infertility) determine how the gene drive operates. In the neutral strategy there is no fitness cost to having the gene drive, whereas in the infertility strategies, the designated sex cannot reproduce when homo- or hemizygous for the gene drive.

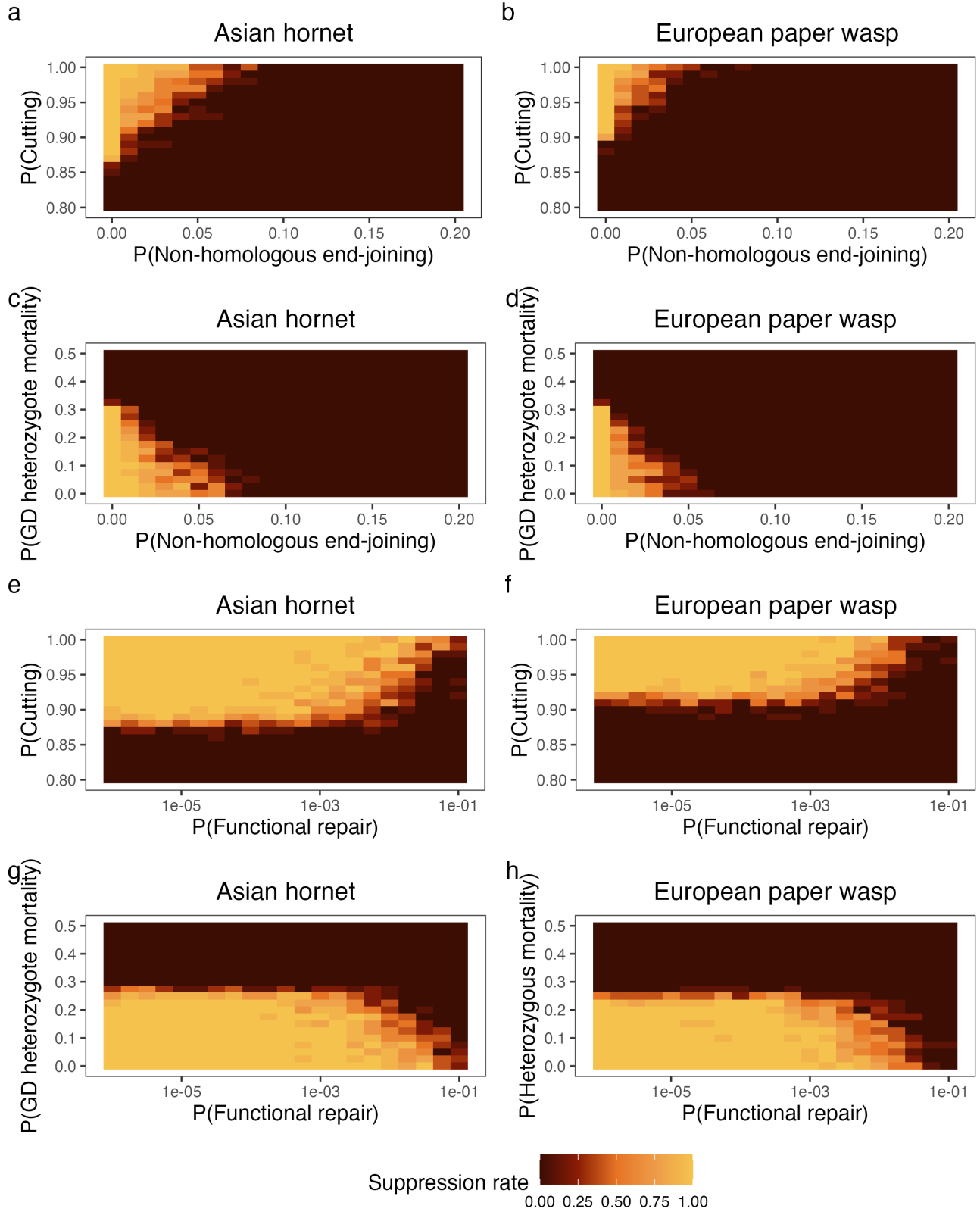
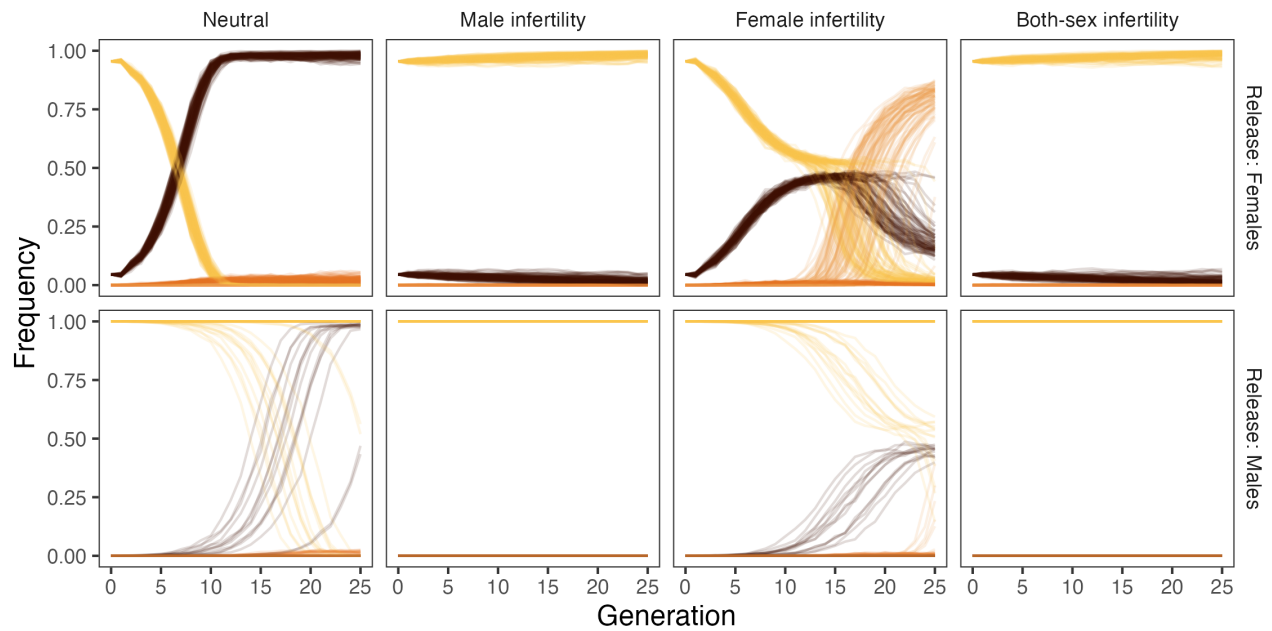
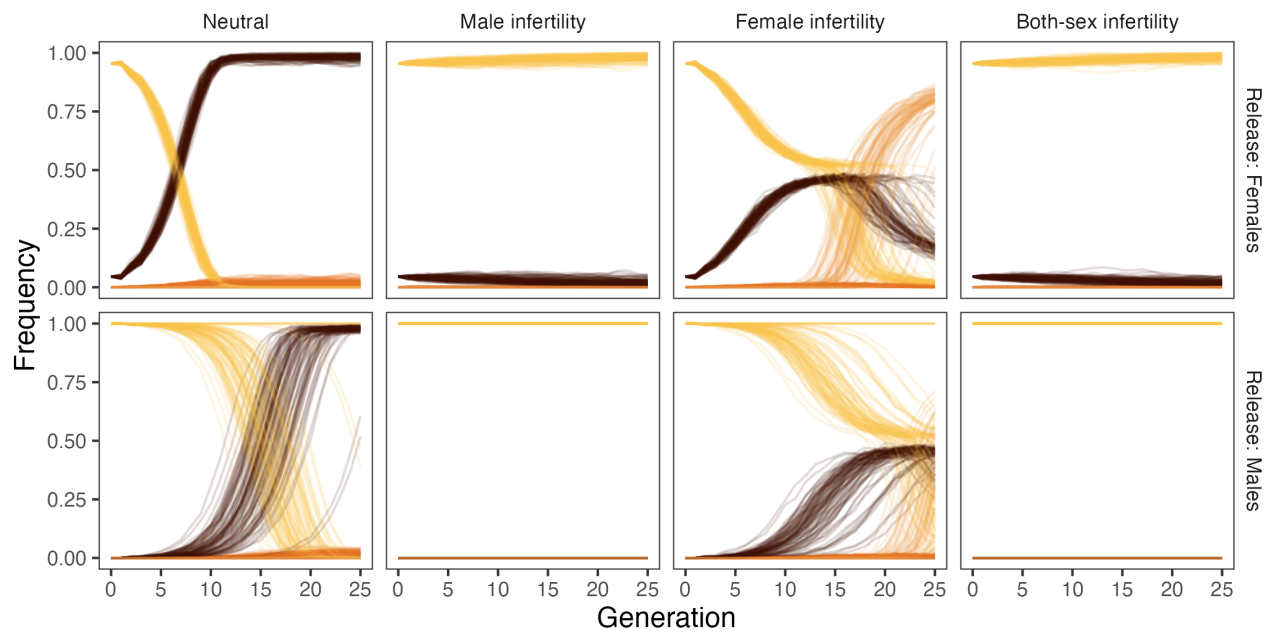


Figure S2. Heatmaps of the suppression rate in the Asian hornet (**a,c,e,g**) and the European paper wasp (**b,d,f,h**) using gene drives that have varying probabilities of functional repair (P_{FR}) and non-homologous end-joining (P_{NHEJ}) against variable rates or cutting (P_{cut}) and mortality of gene drive heterozygotes ($P_{HetMort}$). Note that the model was run for 50 generations instead of 25 to reduce the noise and better allow the different scenarios to resolve.

a**Asian hornet****b****European paper wasp**

Allele — GD — NF — RE — WT

Figure S3. Frequencies of wildtype (WT), gene drive (GD), resistance (RE), and non-functional (NF) alleles in a female Asian hornet population with no polyandry (**a**), and a female European paper wasp population with polyandry (**b**) by gene drive strategy and release carriers (females or males). The different strategies (neutral, male infertility, female infertility, and both-sex infertility) determine how the gene drive operates. In the neutral strategy there is no fitness cost to having the gene drive, whereas in the infertility strategies, the designated sex cannot reproduce when homo- or hemizygous for the gene drive.