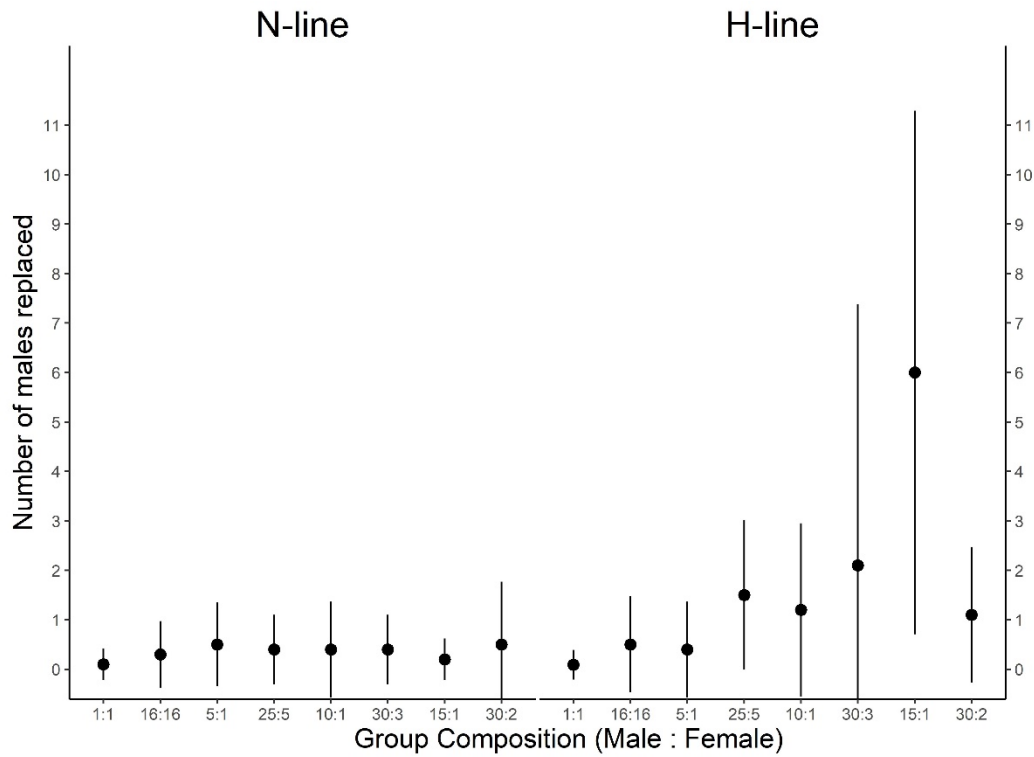


**Supplementary material, Fig. S1.** Rationale for mesh size used for sieving *Delia platura* pupae. Pupal weight (left panel) and pupal diameter of ‘normal’ weight pupae for the H- and N-lines of *D. platura*. ‘Normal’ pupal weight was calculated as the inter-quartile range (salmon portion of distribution, left panel). Pupae with weight corresponding to this range were measured at the wider-most region of pupal casing to obtain a distribution of pupal diameters (right panel). The green line represents the mesh size for the sieve used to remove the smaller individuals from the experiments.

As small individuals tend to have decreased mating success (Benelli *et al.* 2016; Rhainds 2019), we aimed for removing smaller individuals from both *D. platura* lines in an attempt to control for size effects on mating probability. To determine the mesh size required to sieve out the smaller pupae of both lines, we measured the diameter of pupae of ‘normal’ weight (interquartile range; Supplementary material, Fig. S1, left panel; pupal weight data supplied by F. Fournier). We then chose an available mesh size (1.7 mm) closest to the minimal pupal diameter of both lines (Supplementary material, Fig. S1 right panel). While this mesh size was successful in retaining all ‘normal’ size pupae for the N-line, it eliminated some of the smaller H-line pupae of ‘normal’ size. As such, by retaining only a larger proportion of large H-line pupae, we would expect a higher and less variable mating success within this line. However, we observed the opposite trend; H-line females had a lower mating probability than N-line females. Thus, sieving a greater proportion of small-sized H-line individuals further enforces the amplitude of the effect of sex ratio and density measured in our study.



**Supplementary material, Fig. S2.** Arena used to evaluate the effect of group sex ratio and density on mating probability and pre-oviposition period for the H- and N-lines of *Delia platura*.



**Supplementary material, Fig. S3.** Average ( $\pm$  standard deviation) number of dead males replaced for each treatment of the group sex ratio and density experiment.

Average ( $\pm$  standard deviation) number of dead males replaced for each treatment evaluating the effect of group sex ratio and density on mating probability, pre-oviposition period and egg hatchability for the H- and N-lines of *Delia platura*. A higher number of substituted males did not correspond proportionally to the size of the effects observed in the mating probability and pre-oviposition period analyses.