Title:	Local adaptation to developmental density does not lead to higher mating success in Drosophila melanogaster
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Abstract:	In this study, we investigate the effect of local adaptation to developmental density on male mating success in laboratory populations of Drosophila melanogaster. Mating success is known to be influenced by body condition which can in turn be influenced by local adaptation. We test the hypothesis that males adapted to a given environment have higher mating success when assayed in that environment. We used males selected for adaptation to high larval density and their controls which are reared at low larval density. We grew assay males in low and high densities whereas the focal females (raised at low larval density) used for the experiment belonged to the common ancestor of selected and control populations. We considered selected males grown at high density and control males grown at low density as ‘adapted’. Similarly, we considered selected males grown at low density and control males grown at high density as ‘nonadapted’. Selected male belonging to a given treatment (larval density) was made to compete with control male of the same treatment for mating with ancestral female. We quantified components of reproductive fitness: mating latency, copulation duration, mating success and number of progeny sired by the ‘adapted’ and ‘nonadapted’ males. The results show that local adaptation does not lead to higher mating success in populations adapted to their own larval rearing environment.
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