Title:	Egg viability, mating frequency and male mating ability evolve in populations of drosophila melanogaster selected for resistance to cold shock
Authors:	Singh, Karan (/jspui/browse?type=author&value=Singh%2C+Karan) Kochar, E. (/jspui/browse?type=author&value=Kochar%2C+E.) Prasad, N.G. (/jspui/browse?type=author&value=Prasad%2C+N.G.)
Keywords:	Egg viabilit mating frequency drosophila
Issue Date:	2015
Publisher:	Public Library of Science
Citation:	PLoS ONE, 10(6)
Abstract:	Background Ability to resist temperature shock is an important component of fitness of insects and other ectotherms. Increased resistance to temperature shock is known to affect life-history traits. Temperature shock is also known to affect reproductive traits such as mating ability and viability of gametes. Therefore selection for increased temperature shock resistance can affect the evolution of reproductive traits. Methods We selected replicate populations of Drosophila melanogaster for resistance to cold shock. We then investigated the evolution of reproductive behavior along with other components of fitness- larval survivorship, adult mortality, fecundity, egg viability in these populations. Results We found that larval survivorship, adult mortality and fecundity post cold shock were not significantly different between selected and control populations. However, compared to the control populations, the selected populations laid significantly higher percentage of fertile eggs (egg viability) 24 hours post cold shock. The selected populations had higher mating frequency both with and without cold shock. After being subjected to cold shock, males from the selected populations successfully mated with significantly more non-virgin females and sired significantly more progeny compared to control males. Conclusions A number of studies have reported the evolution of survivorship in response to selection for temperature shock resistance. Our results clearly indicate that adaptation to cold shock can involve changes in components of reproductive fitness. Our results haveimportant implications for our understanding of how reproductive behavior can evolve in response to thermal stress. © 2015 Singh et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
URI:	https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0129992 (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0129992) http://hdl.handle.net/123456789/2870 (http://hdl.handle.net/123456789/2870)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format

Need to add pdf.odt (/jspui/bitstream/123456789/2870/1/Need%20to%20add%20pdf.odt)	8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345

Show full item record (/jspui/handle/123456789/2870?mode=full)

(/jspui/handle/123456789/2870/statistics)