

Abstract

The ability to resist variation in temperature is an important component of fitness in *Drosophila melanogaster*. Given that it is a costly trait, it certainly has a cost effect on other life history traits. Cold stress can affect both male and female reproductive fitness leading to a decrease in progeny production, egg viability and adult mortality. Cold shock can affect female reproductive fitness by killing both eggs and stored sperm. In this study we have explored effect of cold shock on sperm storage in females and its evolution. We found that females selected for cold resistance do not store more sperms rather they remove the dead sperm faster than control females. Hence selected females can mate faster than control females after cold shock, increasing the number of progeny produced.