

In this thesis, I have attempted to address a number of important questions related to density-dependent natural selection. The selected populations evolve to live longer, court more and have larger testes. Contrary to expectation, we did not find any trade off with between lifespan and reproduction. However, there were sex and density specific trade-offs in starvation and desiccation resistance. Thus, adaptation to larval crowding in selected populations of *D. melanogaster* affects a large number of adult traits, though not always in the direction expected.