# The Effects of Estradiol on the Reproduction of *Drosophila melanogaster*

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Abstract

This study examined the effects of estradiol, or estrogen, on the reproductive system of *Drosophila melanogaster*, commonly known as the fruit fly. Due to the genetic similarity of *D. Melanogaster* to humans it was the ideal organism for this research. The fruit flies were placed in vials of different concentrations of estradiol and there was also a control. The concentrations used were .1%, .01%, and .001%, molar solution of estradiol. For each concentration there were three vials tested in order to examine how the various amounts of the chemical affected the fruit flies in comparison to the control. In the control the fruit flies were not exposed to estradiol. The fruit flies reproduced and the new generation of flies emerged within 14 days. Initially, it was predicted that the estradiol would cause fewer fruit flies to be produced overall, and birth defects within the male flies. The results inquired that for each percent concentration of estradiol tested and the control, more females were produced than males. However, in the estrogenic conditions the female to male ratio increased, initiating that there was feminization in the male flies. The 0.01% molar solution of estradiol was the most effective with a female to male ratio of six to one. The overall results implied that xenoestrogens, chemicals that mimic true estrogen, can possibly cause the same results within the human population.