Effects of Grape Seed Extract (GSE) Consumption on Egg Production in Drosophila melanogaster Adults

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Nutrition has been demonstrated to have a number of effects on development and overall health. As such, we sought to investigate the effects of the consumption of several nutritional supplements on the fertility of Drosophila melanogaster adults. We hypothesized that the Drosophila that were fed grape seed extract (GSE) would lay a greater number of eggs than the control group in a three-hour period, indicating increased fertility due to GSE's potential as an antioxidant [3]. This can reduce oxidative stress (OS) on both the male and female flies' reproductive organs [1], a condition that could otherwise lead to a decrease in female fertility [5] as well as decreases in male fertility and reduced sperm motility [2]. Fertility was measured as a rate in the number of eggs laid per three hours. The flies were transferred to vials with differing food content, and left to feed for four days. Then, they were placed in fertility chambers composed of a plastic cup containing a grape-juice plate and covered with parafilm. Preliminary data over three separate trials indicate a significant difference in the number of eggs laid by flies fed two capsules of GSE (an average of 3.7), in comparison to those fed one capsule of GSE and plain fly food media (an average of 1.7 and 1.3, respectively).

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