

Cranberry Supplement's Effect on the Longevity of *Drosophila melanogaster*

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The process of aging brings about many aging-induced complications. The free radical theory of aging suggests that excess accumulation of free reactive oxygen species (ROS) are thought to be involved in advancing aging. Cranberries contain dietary anthocyanins with antioxidant properties to reduce ROS-induced stress in cells. These compounds have been shown to increase the longevity of the model organism, *Drosophila melanogaster*. In this study, the lifespan of *D. melanogaster* was monitored in an attempt to find a correlation between an increase in longevity and cranberry concentrate supplementation. In conjunction, changes in the expression of aging-related genes were analyzed: target of rapamycin (TOR), catalase (CAT), and superoxide dismutase (SOD2). Fruit flies were either fed diets containing varying concentrations of cranberry concentrate (5, 20 and 50mg/mL) or control diets (0mg/mL) until mortality. Results showed that fruit flies fed the 50mg/mL cranberry concentrate (Cr50) supplemented diets had significantly increased maximum lifespans by 14% compared to control diets. Moreover, the 50% survival times of Cr50 flies had significantly increased by 68% compared to control diets. The results suggest that cranberry concentrate supplementation increases the maximum lifespan and average 50% survival time of *D. melanogaster*. This study has provided further insight towards understanding the anti-aging benefits of cranberry concentrate supplementation in the model organism, *D. melanogaster*.