Spin Doctor: Determining the Capacity for a Circulatory Supplement To Mitigate the Negative Effects of Placing an Unexpected Rotational G-Force Upon Vanessa cardui Larvae During Metamorphosis

Foust, Lexy (School: Frankfort High School)

The purpose of my project was to see if adding circulatory stimulants into the diet of a Vanessa cardui (Painted Lady Butterfly) would correct the damages done by placing a rotational g-force upon them as they undergo metamorphosis. Previous work shows that placing a rotational g-force on this specimen produces negative effects via circulatory issues. I predicted with the help of a circulation stimulant, there is a possibility that these damages could be minimized. For this experiment, I completed two phases. For the first one, I created four spinning devices with a 20rpm motor attached. Within the four groups, there was a creatine supplement, a dalfon supplement, a caffeine supplement, and then a control group. I added a larva into each container that was spinning and monitored daily development. After I observed what had occurred, I conducted a second phase. This time, I tried a lower dose of creatine. For the dalfon, I did one group with a lower dose and another with a higher dose. Then I kept my control group. Again, I placed a larva into each container and observed them as they went into chrysalis and eventually emerged afterwards. As I predicted, groups given circulatory stimulants emerged with fewer deformities. The creatine group performed the best in phase one; the higher dose of dalfon performed the best in phase two. The stimulants given to the specimens were able to reverse the damages of the g-force before they occurred, so long as the dosages were tolerable.

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