JAZMIN GUEVARA
STUDENT, BIOLOGICAL AND ENVIRONMENTAL SCIENCES

EMMANUEL MAPFUMO
PROFESSOR, BIOLOGICAL AND ENVIRONMENTAL SCIENCES

T.CONFUSUM SURVIVABILITY REARED ON A DIET OF QUINOA FLOUR WITH TWO POPULATIONS AND TWO TREATMENTS OF 30 DEGREES CELSIUS AND 35 DEGREES CELSIUS FOR FOUR WEEKS.

The confused flour beetle Tribolium Confusum Jaquelin du Val is a common pest of post-harvest grains that cause global losses. A study of population growth and survival of T.Confusum using larva is conducted in a laboratory experiment for 4 weeks with a diet of 10 grams of quinoa flour. Two populations of T.Confusum larva (100 per treatment) is kept in temperatures of 30 C and 35 C. The results demonstrate that larva, pupa, and adults were able to survive in both temperatures, but the adults were found to be more abundant with a mean of (0.6 to 3.35) in the 30 C treatment compared to the 35 C treatment after the four weeks. The pupa was found to be slightly more abundant in the 30 C treatment (1.35 to 0.45) and the larval stage population is slightly higher in the 30 C treatment (7.12 to 6.32). In terms of the diet of quinoa flour and consumption it is found to be similar between the two treatments, where in the 30 C the average mass of flour was 10.11 grams and in the 35 C it was 10.40 grams. The increase in quinoa flour mass may have been due to waste material left after molting. Relative humidity was recorded to be on average of 48 % in both treatments. This study demonstrates that the survival of T.Confusum from larva to adult will have a greater survivability in a temperature of 30 C versus 35 C reared on a diet of quinoa flour.

Research Advisor: Dr. Xin Chen