Zebra Longwing Caterpillar Response to Three Potential Semiochemicals Supplemented in Grass

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Butterflies use multiple ways to communicate. From their colorful wing patterns to signaling molecules, butterflies use and respond to multiple pheromones and volatile compounds in the environment around them. Caterpillars may use formic, acetic, and propanoic acids as signposts to see what food is good to eat and also to know if other caterpillars are already there. Formic acid is a pheromone that can be found in the environment from primary sources such as ants. Acetic acid is the compound that gives vinegar a sour smell. Propanoic acid is an attractant of male Asian citrus psyllids which are vectors for the economically devastating bacteria causing citrus greening. In other studies these acids have been tested on other insects as a repellent or attracter. With the data collected it was shown that caterpillars in the control group had no urge to eat or move, while in the formic and propanoic groups the side containing the pheromone was very rarely visited. On the other hand the acetic group tended to go to the side with the pheromone. For the formic group it is statistically proven that the caterpillars were repelled by the host plant with the pheromone and the same goes for the propanoic group. The acetic group while most were attracted, cannot be statistically proven significant because the caterpillars choices were more diverse.