The Effect of the Parasitic Fungus Beauveria bassiana Treated with Chitinase on Adult and Larval Mosquitoes

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Millions of people each year die of mosquito-borne diseases. My past experimentation with an environmentally safe fungus, known as Beauveria bassiana has shown its effectiveness at controlling both adult and larval mosquitoes, but it still wasn't perfect. Can the fungus better infect mosquitoes after being treated with a Chitinase substrate. To test this, trials were conducted on both adult and larval mosquitoes. I had hypothesized that the treated fungus will significantly increase the infection rate (adult trials) and decrease the amount larvae reaching their adult cycle (larval trials). In the larval trials, larvae were separated into groups with environments that contained either B. bassiana, B. bassiana treated with Chitinase or regular water. My hypothesis was confirmed, the average percentage of larvae making their way to adulthood in the treated B. bassiana groups was 0.8%, while the non-treated B. bassiana groups had 8.3%. A t-test conducted on the data showed a significance of 0.001, which is significant compared to the accepted level of 0.05. In the Adult trials, two groups containing a healthy population of 30 mosquitoes were introduced to either 3 adults infected with treated B. bassiana or non-treated B. bassiana. My results supported my hypothesis, with treated B. bassiana groups having an infection rate of 84.4%, while the non-treated B. bassiana groups had an infection rate of 52.2%. A t-test conducted on the adult data showed a significance of 0.0019, which is significant compared to the accepted level of 0.05.

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