The Effect of Light on Small Hive Beetles

Kennedy, Kelly

Aethina tumida, otherwise known as the small hive beetle, is a destructive pest of the honeybee. With the global decline of honeybee populations, and considering the honeybee's importance to both the environment and the human food supply, safe solutions to small hive beetle infestations are necessary. This project explored the possibility of using certain wavelengths of light in order to repel or lure beetles away from honeybee hives. Small hive beetle larvae and adults were observed when exposed to various wavelengths (370 nm, 470 nm, 630 nm, 780 nm, 1050 nm, 1550 nm) of light for 60 seconds. As a result, the experiment found 630 nm (red) light to be most effective in repelling larvae. In the T-test for 630 nm larvae data, p=8.31 x 10^-6. 780 nm (deep red) light was most effective in repelling adults. In the T-test for 780 nm adult data, p=1.62 x 10^-5. These results did not support the original hypothesis that 1550 nm (white) light would be the most effective in repelling adults or attracting larvae.

Awards Won: