Improving Apis mellifera Hive Immunity through Environment Manipulation

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This project, as a continuation upon the previous year's project, centers around the ultimate goal to solve the mystery that is Colony Collapse Disorder. Colony Collapse Disorder is a multitude of environmental changes and human error combined have that resulted in the downfall of one of the world's primary pollinators. This project investigates a new hive ventilator system that is said to make a hive more natural like, boost a hives immune system, and allow air flow through the hive year round so that condensation build up does not occur. To test the hive ventilators, samples of 30 bees from multiple hives that use ventilators and hives that do not use ventilators were collected and the immune systems of both samples were tested. Along with that, the weight of each hive collected were taken and compared. The bees from the ventilated hives were also on average 1.2 grams heavier than bees from the non-ventilated hives. This indicates an overall increase in the bee's health and vigor, if the ventilators are used. When tested via the Kirby-Bauer method the ventilated hives were twice as likely to show a zone of inhibition and the average zones were larger 100% of the time. A Second Phase was conducted in which Hive Ventilators were implemented on hives in an attempt to increase the immune system productivity of the hives. The same trend from Phase 1 was evident. For all of the tests ran after three and a half months of ventilation, the immune systems showed improvement.

Awards Won: