Mushroom Medicine for Bees: A Look Into the Benefits of the Trametes versicolor Extract on Apis mellifera Colony Health for Backyard Beekeepers

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Varroa destructor mites have led to a worldwide decline in honeybee populations through the introduction of viruses to bee colonies, including Varroa destructor virus, Lake Sinai Virus, and Deformed Wing Virus. This study expands on some promising published research by Stamets et al. (2018) on reduced viral loads in caged honeybees given Reishi extract by testing the effect of mushroom extract on viral loads and Varroa destructor mite counts in backyard hives. After Reishi extract showed promise, it was hypothesized that mushrooms native to Arkansas could be found that would reduce viral loads and varroa mite counts in beehives. A variety of native mushroom extracts were examined using GC/MS analysis, and Turkey Tail appeared the most chemically similar to Reishi Theseextacts also attracted the most caged bees in an experimental trial. Turkey Tail was given to hives in experimental trials at three locations and was found to help reduce, and in some cases, prevent mite population growth, but did not produce a dramatic decline in mite counts. This is significant because observational studies of natural mite fluctuations at two sites found that mite counts can increase naturally over the course of just a few weeks. Preliminary data also shows that Turkey Tail extract also reduced some viral loads, most notably, Varroa Destructor Virus, and thus shows promise to help backyard bees, considering that no commercial treatment for viruses is currently available. However, it is not likely to replace commercial mite treatments.

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