

Alternative Natural Treatments for American Foulbrood in Honeybees

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POSTER

American Foulbrood (AFB) is a highly contagious disease threatening *Apis mellifera*, honey bees, which is caused by the bacteria *Paenibacillus larvae*. It is important to get this disease under control, but a sustainable solution is elusive. Antibiotics leave residues in the honey product, undermine bee immune systems, and become ineffective as there is an increased resistance to them. Possible alternatives lie in more natural treatment methods, such as the use of essential oils or bacteriophages. This study investigated both of these possibilities. First we looked at use of two essential oils, oregano and clove. Using serial dilutions an initial test for minimum inhibitory concentrations was performed. Further growth allowed for analysis of a bactericidal concentration. This study showed that oregano is a more effective inhibitor against *Paenibacillus larvae* than clove oil. Secondly, we investigated the possibility of bacteriophages present in the *P. larvae* itself with the intention of isolating and deducing concentrations which will prove effective in inhibition. These preliminary results suggest that natural alternatives to AFB treatments may hold promise for helping beekeepers deal with a challenging pathogen.