



Investigation of Varroa resistance honey bee breeding programs for application in Australia

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Speaker Bio

Dr. Gerdts moved from Australia from the United States in 2013 and is the founder and managing director of Bee Scientifics, an Australian company focused on honey bee breeding, education, and nutrition. Jody's family has been keeping bees in the United States since the 1930's and she is the fourth generation to take up the passion.

Presentation

Varroa mites are the foremost cause of honey bee colony losses globally impacting both pollination services and honey production. In small pockets around the world, however, honey bee populations have been able to survive these devastating mites through both natural and human accelerated selection. This presentation details Fellowship learnings from interviews with key people from operations and organisations in the United States that have been engaged with selecting Varroa resistant traits in honey bees for at least five years. Additionally, original research conducted whilst on Fellowship helped answer questions around virus transmission that are key to enabling future safe imports honey bee genetics into Australia from colonies demonstrating Varroa resistance overseas. The Fellowship was conducted between July and September 2019.

The five groups that were visited in undertaking this Fellowship employ different strategies for honey bee breeding and selection. Each operation has its merits and has faced problems ubiquitous to building a secure and sustainable bee breeding program; each operation has overcome those difficulties in their own unique ways. The varied solutions to common problems will help the Australian honey bee industry meet the challenges of establishing a cohesive bee breeding strategy where selective breeding can be successful.

Most importantly, this Fellowship bestowed hope and inspiration. The commonly accepted view is that Varroa devastates bees and there is nothing that can be done. This notion is simply untrue. The programs that were visited are living proof that given a chance, the host-pathogen relationship between the European honey bee and the Varroa mite will come into balance. The real finesse lies not in breeding bees that can survive varroa, but in maintaining commercially viable honey bee populations suited to beekeeping that can naturally keep mite populations at manageable levels. It is possible and the Australian honey bee and pollination reliant industries are in a prime position to learn from these successful programs.