PP-010 [Bee Health]
Breeding for disease and mite resistance in the small commercial apiary

Troy Hall
Hall Apiaries

Breeding for disease and varroa mite resistance in the European honeybee. Is it possible to achieve this in the small commercial apiary?

Problem / OBJECTIVE: Varroa mite resistant bees make up a very small percentage of the managed honeybee population. Small commercial apiaries centered around a breeding program for resistance can contribute to greater resistance and diversity in the overall managed honeybee population while also strengthening the beekeeping industry.

Methodology
A multi-faceted management plan consisting of breeding, honey, and nucleus colony production, provides the foundation for optimal selection and vetting (primarily utilizing natural selection). At the same time production of other revenue streams via honey and bees are secured (commercial viability in the breeding stock). Further assays are used to quantify disease and mite resistance in the breeder queens.

RESULTS: Results have shown and continue to show improvement for mite resistance in the managed honeybee population in my apiary, that primarily being the very low to no chemicals needed to treat for the varroa mite. New developments in quantifying resistant traits (primarily SMR/VSH) using the Harbo Assay further verifies the selection for breeder queens

CONCLUSION: My career as a full-time beekeeper (15 yrs) has been built on breeding and managing for mite resistance. I have seen great success and hardships, overall, the successes have outweighed the hardships. Using this paradigm is a proven way to breed for resistance and make a peaceful living with the honeybee while doing so.

Practical Implications for beekeepers
The future of the beekeeping industry is in mite resistant stock. This is one way we can achieve that objective. With more small commercial apiaries engaged in a mite resistant breeding program the stronger and more resilient our bees and our industry will become.