



Varroaresistenz 2033
Varroa 2033

A German initiative to stepwise **abandon** chemical varroa treatment

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Initial Situation and Goal

Many beekeepers in Germany are experiencing high colony losses due to Varroosis infestation of their bees (*Apis mellifera*), despite intensive medical treatment. The leading German beekeeping associations aim at a sustainable reduction of loss rates and a significant decrease in the use of medications by 2033 by increasing the availability and distribution of resistant bees.

Approach

The project focuses on systematic selection and dissemination of resistance traits, according to the methods outlined in the EurBeSt study (EU, 2022), as well as on adapted colony management using biotechnical methods (Büchler et al., 2020). The German Beekeepers' Association (DIB) and the German Professional Beekeepers' Association (DBIB) have signed a cooperation agreement with the leading breeding associations for Buckfast (GdB), Carnica (AGT) and Mellifera bees (BDB), as well as the German Bee Research Association. Since March 2023, three specialist symposia of several days were organized, each with about 150 participants, and working groups for breeding, community-based selection, biotechnology, and education & science were established. A project homepage

(www.varroaresistenz2033.eu), social media appearances, and presentations at conferences serve to reach out to the entire beekeeping community. The structures of the beekeeper associations and local clubs serve to disseminate the motivation and the specialized information prepared in the working groups to the beekeeping community in various ways and on a broad front. Some pioneer beekeeping operations that have successfully been managing their colonies medication-free for years serve as important flagships.

Perspective

A varroa resistant bee population will be established based on breeding strains selected for resistance mechanisms like VSH, SMR etc and a wide spread of breeding success through mating stations and community-based selection. This process will be supported by the application of biotechnical methods involving seasonal brood interruption which can ensure the rearing of healthy winter bees, improve the overwintering success and usually dispense the need for an additional winter treatment. As a consequence, differences in mite susceptibility between colonies become more visible and motivate beekeepers in general to selectively propagate resistant colonies.

References

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Many beekeepers in Germany are experiencing high colony losses due to Varroosis infestation of their bees (*Apis mellifera*), despite intensive medical treatment. The leading German beekeeping associations aim at a sustainable reduction of loss rates and a significant decrease in the use of medications by 2033 by increasing the availability and distribution of resistant bees. The project focuses on systematic selection and dissemination of resistance traits, according to the methods outlined in the EurBeSt study (EU, 2022), as well as on adapted colony management using biotechnical methods (Büchler et al., 2020). The German Beekeepers' Association (DIB) and the German Professional Beekeepers' Association (DBIB) have signed a cooperation agreement with the leading breeding associations for Buckfast (GdB), Carnica (AGT), and *Mellifera* bees (BDB), as well as the German Bee Research Association. Since March 2023, three specialist symposia of several days were organized, each with about 150 participants, and working groups for breeding, biotechnology, and education & science were established. A project homepage (www.varroaresistenz2033.eu), social media appearances, and presentations at conferences serve to reach out to the entire beekeeping community. The structures of the beekeeper associations and local clubs serve to disseminate the motivation and the specialized information prepared in the working groups to the beekeeping community in various ways and on a broad front. Some pioneer beekeeping operations that have successfully been managing their colonies medication-free for years serve as important flagships. The reduced varroa and virus load during the rearing of winter bees, achieved by biotechnical methods involving brood interruption, leads to an improved overwintering success and reduces or eliminates the need for a chemical winter treatment. As a result, differences in mite susceptibility between colonies become more visible, allowing the selection of resistant colonies and contributing to integrate selection decisions into the general beekeeping practice.