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AGRICULTURE & INNOVATION

Bee health and sustainable beekeeping

How to ensure the sustainability of beekeeping in the face of challenges linked to pests and diseases, intensification of agriculture and climate change?

Sustainable beekeeping depends on bee-friendly practices that help address the multiple threats to honeybee health: pests, predators, chemicals, inadequate management practices, climate change and other stressors. Therefore addressing bee health issues means going beyond the apiary itself, considering the surrounding environment and all the actors involved. In this context, the 20 experts of the EIP-AGRI Focus Group “Bee health and sustainable beekeeping” explored key aspects for honeybee health and identified a set of priorities to keep bee colonies healthy:

- ▶ Address the availability of knowledge and skills (research and practice)
- ▶ Maintain a sustainable environment around the honeybee colony
- ▶ Determine and evaluate the health status of the honeybees
- ▶ Improve the resilience and well-being of honeybees
- ▶ Improve the collection and interpretation of monitoring data (precision beekeeping)
- ▶ Adapt husbandry management methods to local conditions
- ▶ Support honeybee genetic diversity through local breeding
- ▶ Mitigate sub-lethal effects of chemicals in an environment of multiple stressors

To address such priorities in the light of current knowledge and good practices, the group made recommendations including:

- ▶ Developing a pan-European licence for beekeepers
- ▶ Developing and evaluating technical methods for controlling Varroa
- ▶ Interpreting and sharing data from monitoring of both biotic and abiotic factors
- ▶ Mapping the landscape situation around the apiary for sustainability of farming and beekeeping
- ▶ Managing complexity through collaboration between relevant actors, including farmers

“Sustainability of beekeeping does not depend only on beekeepers and the beekeeping sector, it's necessary to work with other actors especially in agricultural landscapes.”

- Florence Aimon-Marie (France), expert from the EIP-AGRI Focus Group Bee health and sustainable beekeeping -

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Ideas for Operational Groups

Varroa control

- ▶ Testing effects of cutting drone brood and reducing cell size for Varroa control
- ▶ Mitigate Varroa infestation by setting a common treatment calendar at local level

Hive construction and management

- ▶ Design and manage apiaries to better cope with adverse conditions (e.g. drought)
- ▶ Guidance materials for the well-being of bees, advising about supplies (e.g. hive materials) and beekeeping practices adjusted to local conditions

Collaboration for a bee-friendly landscape

- ▶ A platform to support bee-friendly farming, to exchange information between beekeepers and farmers, including information about land use, real time pesticide application, or crops
- ▶ Communication activities for farmers and beekeepers to raise awareness about bee-friendly farming practices suitable at local level
- ▶ Better cooperation amongst actors to increase the availability of food for bees, e.g. by improving the distribution of apiaries or adapting crop and farm practices
- ▶ Local educational programmes for bee breeders

Research needs

- ▶ Create a European platform connecting research and practice and linked to local centres
- ▶ Develop an index synthesising the health status of bees, to help assess risks
- ▶ Develop and evaluate technical methods for sustainable beekeeping and to fight Varroa
- ▶ Assess the exposure to stressors from agriculture in combination with other factors, especially flowering quality and quantity
- ▶ Identify, implement and communicate practices among beekeepers and farmers, fostering cooperation for their mutual benefit
- ▶ Increase genetic diversity through local breeding to improve honeybee resilience and to increase resistance to Varroa

More ideas for Operational Groups and research needs available in the Focus Group report



More information

Focus Group webpage	Operational Groups on beekeeping in the EIP-AGRI database Horizon 2020 projects: PoshBee - B-GOOD
Focus Group report	
EIP-AGRI videos - AGRI challenge: increasing biodiversity in agricultural landscapes - AGRI challenge: Monitoring bee health through beehive sensors	EIP-AGRI Inspirational ideas - Monitoring bee health through beehive sensors (Italy) - French farmers, beekeepers and agricultural students join forces to increase biodiversity in agricultural landscapes (France) - Multifunctional buffer zones (Sweden)

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