



Bees and agriculture



A small association of beekeepers organised a meeting to discuss the decreasing bee population. The president of the association reported some alarming facts: “Currently the world is facing a crisis, in the form of the mass extinction of bees. Every year, one-third of bee families in the U.S. are lost, and over 20 percent die each year in Europe. According to world bee protection organisations, the main causes of the population decline include nutritional disturbance (the forced pollination of single crops), pesticides, pathogenic microorganisms, immunodeficiency, mites, fungi, the use of antibiotics in beekeeping, and electromagnetic radiation from cellular connections. Among the biggest threats is the use of agricultural chemicals. Scientists estimate that 75 percent of the world’s food crops depend on the state of beekeeping, while 84 percent of plants grown in Europe depend on pollination.”

At the end of his presentation, the president quoted Albert Einstein: “If the bee disappeared off the surface of the globe, then man would have only four years of life left.”

Participants at the meeting, discussed the possible solutions.

Conflicting interests

- The transportation of apiaries to large areas of blossoming agricultural nectar-bearing plants ensures that beekeepers have a big honey harvest and can make a profit. However, beekeepers risk losing the apiary if toxic chemicals are used in these fields during the blossoming season. In addition, the honey and the pollen harvested by the bees will be hazardous to consumers.
- Even beehives located at a distance of 3 to 5 kilometres from a field where toxic chemicals are applied will be affected (as this distance is the radius of a bee’s flight).
- Farmers have an interest in the pollination of agricultural crops by bees, as it increases harvests by 30 to 100 percent. However, the modern approach of growing single crops on a large area demands the wide-scale use of chemicals to tackle weeds, parasitic fungi and insects, simplifying crop cultivation and reducing the cost of the final products.

Possible solutions

- Alternative options can be identified for the pollination of plants. (In China, for example, the shortage of pollinating insects has resulted in the emergence of a new profession: the “bee-person” climbs trees in order to pollinate each flower.)
- New strains of plants can be cultivated that are capable of self-pollination (cultures of buckwheat, cucumber and sunflowers, for example, are already available).
- Contracts could be made between beekeepers and farmers, determining the terms and conditions of the placement of apiaries in the field, as well as compensation for damage.
- Laws can be adopted governing procedures for the application of toxic chemicals in agriculture, which would minimise the possibility of damaging bees and contaminating bee products. The law should also cover the development of mechanisms for paying compensation to beekeepers.
- Chemical pesticides can be replaced with alternative biological methods.

Varying viewpoints



Local authorities

Local authorities can help to solve the problem by adopting specific rules for the application of toxic chemicals in residential gardens and agricultural fields, and by monitoring the use of chemical substances.



Farmers

Farmers are interested in achieving big yields and reducing the cost of cultivating agricultural products, including the cost of pest control.



Beekeepers

Beekeepers are interested in more environmentally friendly agricultural technologies, a reduction in the use of toxic chemicals on agricultural land, and the wider distribution of the agricultural crops from which bees produce the most honey. They demand timely and comprehensive information about the date, location and type of toxic chemicals applied so as to be able to protect their bees.



Citizens

Citizens are interested in cheap and varied environmentally pure food products, including healthy honey.