

# Good bugs under threat

By Stéphane Kluser\* and Pascal Peduzzi\*\*

When Albert Einstein said "if the bee became extinct, man would only survive a few years beyond it", was he forecasting our current problems? Bee populations are decreasing. French beekeepers say a pesticide has killed about 90bn of their insects over the last 10 years. In 2000 a census by France's Ministry of Agriculture revealed that 46% of the bee exploitations were lost between 1988 and 2000. France has had to start importing honey. Numerous scientific studies confirm the responsibility of agricultural pesticides. Products containing Imidacloprid or Fipronil were introduced in the mid-1990s. They are marketed under various names including Gaucho in some 70 countries worldwide and are mainly used on sunflower and maize, but also barley, wheat and sugar beet. The scientific community suspects that coating seeds with regular or systemic insecticide, which is absorbed by the root and migrates through every part of the plant including pollen and nectar, poses a potential threat for pollinators such as honey bees and other insects. A study by Bonmatin (1) revealed that pesticides, including the ones mentioned above, cause bees to lose their sense of direction. This is the goal for insects harmful to the crops, but should be avoided for "good bugs". But there is more at stake than the missing honey. The honey bee is the most effective pollinator in western Europe and North America. One-third of the United States food supply depends on pollinating activity, and bees take care of 85% of pollination. If bees become extinct, production of such vital crops as maize will be threatened. In addition to the effect on insects, other studies revealed the high toxicity of Imidacloprid and associated inert ingredients

for cats, fish, rats, rabbits, birds and earthworms (2), demonstrating that the insecticide has a much broader impact.

Although chemical pesticides can be an effective way of controlling an occasional pest outbreak, no one should be encouraged to rely on pesticides as a regular application. Pest problems should be carefully identified and communities encouraged to select products that have the least impact on human health and the environment. Some pesticide residues can be washed off the surface of fruit and vegetables, but there is a limit to how much just water can achieve. Systemic varieties enter the flesh of the crop and thus cannot be removed by washing or peeling.

When chemical pesticides, such as DDT, were first introduced in the 1940s, farmers saw them as a miracle solution with the promise of complete control

over pests. But within a couple of decades problems started to emerge. The most important one is the environmental damage done by chemicals that are both toxic and persistent. Twenty-five years after an almost total ban on its use, DDT can still be found in the tissue of animals, even in the most remote areas.

As for pesticide production, people all over the world recently commemorated the 20th anniversary of the Bhopal tragedy. There, a cloud of toxic gas escaped from a chemical plant, killing at least 15,000 people. The inhabitants of Bhopal continue to suffer from the long-term effects of the exposure to the gas. The plant, where the accident happened, produced pesticides.

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(1) Bonmatin, J.M., P.A. Marchand, R. Charvet, M.E. Colin, (1994): *Fate of systemic insecticides in fields (Imidacloprid and Fipronil) and risks for pollinators*, in First European Conference of Apidology, Udine 19-23 September 2004.

(2) Cox, C., (2001), Imidacloprid, Insecticide factsheet, journal of Pesticide Reform, Vol. 21, N°1, <http://www.pesticide.org/imidacloprid.pdf>.