

# Pollinator Protection Vital to Crop Production



[Pollinators](#) are vital for a thriving agricultural sector. One-third of the crops we consume depend to some extent on [insect pollination](#) for reproduction, including [almonds](#), apples, berries, cucumbers, melons and many more. In fact, the total economic value of insect pollination worldwide is estimated to be [more than \\$200 billion](#) and accounts for around 10 percent of agricultural production.

Bees, butterflies, beetles and other insects are natural pollinators that play a role in agriculture but it is the honey bee that is among the most important. Keeping these hard-working bees healthy is essential not only to grow crops but also to ensure farmers can turn a profit and ultimately, help feed the world.

Reports of honey bee losses across the northern hemisphere, especially in parts of [Europe](#) and [North America](#), have therefore been met with concern among all agricultural stakeholders. The crop protection industry recognizes the vital role that pollinators play in global food production and has committed significant resources to investigating the cause of honey bee decline and helping farmers reduce their potential impact on all pollinators through good stewardship practices.

## Cause for Concern

Scientists have not attributed honey bee decline to any one cause. Numerous factors affect honey bee health, including pests and diseases, management practices, weather, environmental conditions, agricultural practices and availability and quality of food sources.

But it is the neonicotinoid class of crop protection products, which are widely used as seed treatment, but also for foliar application, that are the reason most popularly cited in the media for honey bee loss. [Introduced 20 years ago](#), [neonicotinoids](#) are a family of insecticides chemically similar to [nicotine](#) that are used as spray treatment as well as in seed treatments to protect emerging plants from various pests. They are now the world's most used insecticide class. Campaigners argue that exposure to the seed treatment is killing bees and this has led the European Union to [restrict the use of certain neonicotinoids](#). However, others

recognize that while it is important to reduce the exposure of bees to seed treatment dust, these insecticide-treated seeds are a key part of agricultural production and provide significant benefits.

Neonicotinoid seed treatment has reduced the amount of crop protection product spraying required for healthy crops by treating seeds prior to planting. All neonicotinoids have been extensively tested to ensure that, when used properly, only target pests are impacted. Numerous field studies and real

life examples show that bee health is not related to the use of seed treatment. For example, in Switzerland the rate of honey bee loss is the same at altitudes above 1000 meters – where no crops are grown and no neonicotinoids are used – to the lowlands where neonicotinoids are used on intensive cropping. Meanwhile, in Australia, where neonicotinoids are used widely, the honey bee population has remained stable.

Still, the crop protection industry remains committed to reducing the potential risk posed to bees and other pol- ↓

“  
Pollination is not just a free service but one that requires investment and stewardship to protect and sustain it.  
”



linators arising from the dust created during planting of neonicotinoid-coated seeds. As such, it continues to improve seed applications and planting technology to reduce the potential for such exposure and it promotes good stewardship among farmers.

### Sweet on Stewardship

“Pollination is not just a free service but one that requires investment and stewardship to protect and sustain it,” noted the United Nations Environment Programme in its [2010 report on pollinators](#).

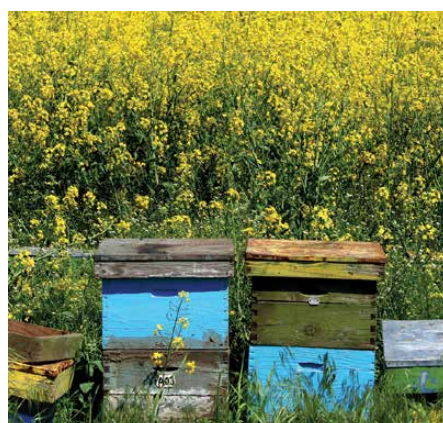


While very stringent [regulatory safeguards](#) are in place to ensure that crop protection products do not pose unacceptable risks to wildlife, good stewardship practices by the crop protection industry, farmers and beekeepers are necessary to help protect the health of pollinators. The industry is committed to educating farmers on best practices to minimize any risks to these beneficial insects. Farmers can improve and protect pollinator habitats in a variety of ways. And beekeepers should regularly monitor colonies for mites and diseases.

For decades, the crop protection industry, government agencies, universities and beekeeper organizations have promoted [good stewardship practices](#) among farmers to protect pollinators. Such practices include following instructions on crop protection product labels, only using genuine products, avoiding use of certain products during the activity of pollinators in the crop or under windy conditions, varying the timing of applications and plant-

ing flowers at field borders. Moreover, the use of modern applicators, such as nozzles that create spray droplets less affected by wind, help keep crop protection products only where intended. With treated seed, farmers can minimize the distribution of dust by carefully pouring seed out of bags, using properly calibrated and specialized seeding machinery, avoiding seed spillage, properly disposing of unused seed and bags, and regularly cleaning seed equipment. These and other practices can minimize or eliminate any risks to pollinators posed by crop protection products.

Another important way to protect pollinators is for farmers and beekeepers to communicate. Farmers can inform beekeepers when they are going to apply crop protection products to their fields so hives can be moved. Similarly, communication among all parties involved in protecting pollinators is critical. The [crop protection industry](#) is actively coordinating with organizations such as the [Honey Bee Health Coalition](#) and [Project Apism](#). These organizations aim to improve honey bee health through outreach education and research.



### Bite the Varroa Mite

The parasitic mite [Varroa destructor](#) has emerged as one of the most important reasons for further research. *Varroa* infestation weakens bee colonies, spreads among them and makes bees susceptible to bacterial and viral infections. The [U.S. Environmental Protection Agency](#) identified the *Varroa* mite as “the major factor underlying colony loss in the US and other countries.” Others agree: “This [*Varroa*] is

## Protecting Pollinators: Stewardship in Action



### South Africa Sets Up Pollinator Forum

The South African Pollinator Forum was established in May 2014 during a workshop organized by the Department of Agriculture, Forestry and Fisheries (DAFF). The Forum is made up of stakeholders including regulators, the bee industry, academia, farmers and the crop protection industry. Its primary purpose is to establish:

- Whether the use of insecticides in South Africa is presenting a high risk to the health of pollinators
- If the current Act 36 of 1947 data requirements for the testing of insecticides is adequate to address scientific concerns about subtle effects on pollinators
- Whether South Africa's regulatory framework needs to be revised in order to better protect pollinators

The Pollinator Forum is steering efforts to protect pollinators under the leadership of the office of the registrar of pesticides in collaboration with representatives from the South African Bee Industry Organization (SABIO), Agricultural Research Council (ARC), University of Pretoria, Grain South Africa and Department of Environmental Affairs and Industry. The Forum is providing a number of resources for best management practices to promote pollinator health including education for growers and farmers; identification of research gaps on pollinator health and; the establishment of an adequate regulatory framework that ensures protection of pollinator health.





the most dangerous threat that we have of bees around the world,” said Dr. Denis Anderson, bee pathologist.

The crop protection industry has committed significant resources to researching *Varroa* mites and developing new crop protection products to help beekeepers protect their hives from them.



### Honey Bees Abuzz

In spite of the threats to honey bee health, and notwithstanding recent overwintering losses of honey bees in Europe and North America, population figures for 2013-14 have suggested an upturn in honey bee fortunes.

The honey bee research network [COLOSS](#) looked at nearly 400,000 bee

colonies from 21 countries in Europe and the Mediterranean and found 2013-14 colony losses to be [9 percent](#) – the lowest level since COLOSS started collecting data in 2007.

In Canada and the U.S., overwintering honey bee losses have also declined this year, despite both experiencing a long, cold winter. Excluding Ontario, whose losses were higher than normal, overwintering losses [in Canada](#) were down to [19.6 percent](#) compared to an average of up to 40 percent. [In the U.S.](#), overall mortality dropped to an average of [23 percent](#) compared to 30.5 percent for the 2012-13 winter.

While these latest global figures cannot be described as a genuine trend – that would require consistent declines over many years – they at least demonstrate the difficulty to draw simple conclusions of cause and effect on pollinator health.

It is also important to note that whatever the latest figures say on pollinator health, the crop protection industry is clear: it will continue to do all it can to ensure these busy pollinators can maintain their vital service to agriculture. 💧



### Farmers Increasing Pollinator Habitats Around the World

An industry-led program called [Operation Pollinator](#) is helping farmers in Europe, North America and Asia Pacific boost the number of pollinators on their farms by creating habitats tailored to native insects.

The initiative originated in the U.K. in 2001 where over 700 farmers were trained in habitat management and 1,200 hectares of special flowering plant seed mix attractive to pollinators were sown in field margins and on pockets of land where crops cannot easily be farmed. Today, Operation Pollinator works with more than 3,000 farmers across 16 European countries, North America and Asia Pacific.

Establishing these habitats helps significantly increase pollinating insect populations. Independent monitoring has shown bumblebee numbers increase by up to 600 percent, butterfly numbers up 12-fold and other insects more than 10-fold within three years. The habitats can also improve crop yields due to better pollination, create habitats for small mammals and birds, simplify field management and help protect soil and water.

Initiated by the [crop protection industry](#), Operation Pollinator is supported by many partners, including universities, farmer groups, non-governmental organizations, beekeeper associations, government agencies and food producers.

## TOP 10 WAYS FARMERS CAN PROTECT POLLINATORS



- 1. Look at labels.** Follow crop protection product instructions, including using the recommended dose, preventing drift of sprays and dusts (e.g. in cocoa plants), not applying in windy conditions or when there is a danger of drift to non-target areas.
- 2. Get real.** Only use genuine crop protection products. Counterfeit and illegal products have unknown impacts and could potentially harm humans, animals and the environment.
- 3. Spare the spray.** Apply crop protection products within an Integrated Pest Management program, only using them when necessary. For sprays, consider spot-spraying (just applying to infested areas). In places where there are Spray Service Providers, consider using their services.
- 4. Bust dust.** Minimize distribution of dust from treated seed by carefully pouring it out of bags, avoiding seed spillage (cleaning it up otherwise), disposing of seed bags and unused seed properly, and regularly cleaning seed equipment.
- 5. Use a clean machine.** In cases where planting machines are utilized, choose those that eliminate or minimize dust production and ensure they are regularly cleaned.
- 6. Mind the time.** Avoid spraying when bees are foraging and plants are flowering.
- 7. Protect liquid assets.** Avoid contamination from spray liquids by being cautious when mixing and loading, properly disposing waste and other used materials, and cleaning up any spills appropriately.
- 8. Empower with flowers.** Protect pollinator habitats by supplying a constant source of nectar and pollen and creating healthy, diverse gardens that beautify the environment and serve as a food source.
- 9. Communicate at the farm gate.** Communicate and educate farmers on when and how to use crop protection products. Farmers should inform local beekeepers when they are going to apply crop protection products so nearby hives can be moved or otherwise protected.
- 10. "Bee" responsible.** Beekeepers also need to follow good management practices with good hygiene, disease control, proper feeding, access to water, genetic diversity and moving hives out of areas to be sprayed.



### Australia Communicating to Keep Bees Healthy

Australia has one of the healthiest honey bee colonies in the world, and the crop protection industry aims to keep it that way.

Through its [Pollinator Protection Initiative](#) (PPI), CropLife Australia is providing resources to ensure that modern, innovative crop protection products are used responsibly and in a manner that minimizes risk to pollinators.

The latest project launched by the PPI is [BeeConnected](#), a world-first phone app that fosters communication between farmers and beekeepers to better protect pollinators. CropLife Australia launched the app in September 2014 in partnership with the Australian Honey Bee Industry Council.

Another project resulting from the PPI is CropLife Australia's [Seed Treatment Stewardship Strategy](#), which advises farmers and seed treatment manufacturers about best management practices to handle and plant treated seed.



**CropLife Africa Middle East**  
326 Avenue Louise, Box 35  
1050 Brussels, Belgium  
[croplifeafrica.org](http://croplifeafrica.org)

For more information contact  
[les@croplifeafrica.org](mailto:les@croplifeafrica.org)