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**Bees or bust**

## Celebrating the first World Bee Day

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# The Current Column

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## Bees or bust – Celebrating the first World Bee Day

Bonn, 22 May 2018. This Sunday, the United Nations celebrated the first ever World Bee Day, making it a back-to-back celebration with today's 25th International Day of Biodiversity. World Bee Day – proposed by Slovenia's UN mission last December – coincides with the 285th birthday of the Carniolan beekeeping pioneer Anton Janša. Since Janša's days, we have come to better understand the amazing service bees provide to ecosystems, especially their crucial role in pollinating important crops. We also know more about the potential impacts of their decline.

In 2016, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) evaluated the available data about pollinators, including bees, but also bumble bees, butterflies, birds, and many more. Their first global thematic assessment showed that large-scale declines in wild pollinators are happening in northern Europe and North America. For other regions, there is insufficient data to allow a general assessment. However, local declines were recorded in South America, Asia, Africa and Oceania. Given the vital role insects and birds play in pollination, this loss is extremely worrying. For example, almost 90 percent of wild flowering plant species depend on pollinators and are critical for providing food and habitats to other species. Farmers' livelihoods have also become increasingly dependent on pollination since the production of pollinator-dependent crops has increased by 300 per cent during the past 50 years. Today, thirty-five per cent of the global crop production, including at least 800 cultivated plants, depend on insects and birds and other pollinators. Without bees, apples, coffee and gummy bears could not be found in supermarkets anymore. Research has shown that in addition to being reliable pollinators, bees also improve the quality of plants. One study demonstrated that bee-pollinated strawberries were "heavier, had less malformations and reached higher commercial grades," compared to self- or wind-pollinated ones.

Unfortunately, declines in both wild and managed bees have been widely reported in the past decade, with strong evidence that pesticides and fertilizers from agricultural intensification is the main cause. Furthermore, with the intensification of agriculture, weeds that provide food for pollinators were eliminated and crop fields were homogenized. These monocultures result in only one crop flowering at one period in time, effectively limiting nectar sources and opportunities for bees and other pollinators. If there are less pollinators, then pollinator-dependent crops will have a problem reproducing.

### **The EU's partial ban on neonicotinoids is a step in the right direction**

The recent extension of the EU's ban on neonicotinoid insecticides is a crucial step towards protecting bees and other insects harmed by pest control chemicals. The ban became politically feasible when a major new assessment from the European Food Safety Authority (EFSA) showed that the world's most widely used insecticides pose a serious danger to both honey bees and wild bees. Another study shows that about 75 per cent of the world's honey is contaminated with neonicotinoids.

The ban is a positive development, but it is still a "band aid" solution. This is partly because the EU, while approving a full outdoor ban of three active substances (imidacloprid, clothianidin, and thiamethoxam), continues to allow their usage in permanent greenhouses. There is still a risk of leakages, where insecticides can contaminate waterways and surrounding soils. In any case, bees and other pollinators are exposed to harmful chemicals because of agricultural systems that are susceptible to pests. What we need is an agricultural industry that is less dependent on chemical inputs. Sustainable, pollinator-friendly farming through promoting an ecological intensification of agriculture and a diversification of farming systems would be a good solution.

### **Bee involved**

We stand to lose a third of our favorite food crops if we do not find means to maintain the diversity of bees and other pollinators. Moreover, extreme measures such as large-scale beehive rental is becoming commonplace in some parts of the world because there are not enough native and local honey bees to sufficiently pollinate farms. Albert Einstein is often quoted to have said, "If the bee disappears from the surface of the earth, man would have no more than four years to live". We now know that Einstein did not actually say these words, but we are still well advised to err on the side of caution, and stop the decline of bees before they completely disappear. In this sense, citizen efforts such as bee hotels or bee-friendly gardening, alongside consumption of organic food, are important initiatives that can make a difference. The World Bee Day is celebrated not only to generate a buzz about the benefits from bees; it is also an invitation to take concrete action in protecting bees and, in the process, protect the future of our food.