

Bees and the threat from neonicotinoid pesticides

The plight of our bees is of concern to all of us. We need bees to pollinate most of our food crops and wild flowers, and they play a crucial role in supporting wider biodiversity.

But since 1900, the UK has lost 20 species of bee. And a further 35 bee species are considered to be under threat of extinction¹

Across Europe nearly one in ten species of wild bees are threatened with extinction²

Loss of habitat (since World War II the UK has lost 98% of its wildflower meadows), use of pesticides, spread of pests and diseases and, increasingly, climate change all contribute to this danger.

In 2014, the UK Government took a significant step when – following a campaign by Friends of the Earth – it introduced a National Pollinator Strategy (NPS) recognising the problem and pledging to help bees and other pollinators thrive. The NPS is welcome but needs to be strengthened if it is to meet its ambition.

Friends of the Earth is already working to address many of the causes of bee decline – especially habitat loss, climate change and pesticides.

In 2013, following a thorough scientific review by the European Food Safety Authority (EFSA) and a vote by Member States, the European Commission restricted the use of three pesticides known as neonicotinoids which posed a “high acute risk” to honey bees.³

Unfortunately the UK Government opposed this move (though it must abide by it) stating that the evidence was inconclusive and more research was needed to understand the impact on other bee species and in real world situations.

Friends of the Earth believes the evidence was more than sufficient to justify the restrictions then and since they came into place in 2013 a substantial body **evidence** from **independent**, peer reviewed science and authoritative studies **clearly** show the negative impacts of neonicotinoids on a range of bee species – including bumblebees and solitary bees in both controlled laboratory and large scale real world field trials. These include:

1. Neonicotinoid treated seeds in **real field conditions** have been shown to have ‘negative effects on wild bees.’ **Swedish Field Trial, published in Nature in 2015.**
2. ‘Our research demonstrates **beyond doubt** that the level of neonicotinoids generally accepted as the average level present in the wild causes brain dysfunction and colonies to perform poorly when consumed by bumblebees.’ **Dr Chris Connolly, University of Dundee.**
3. Some argue that harm from pesticides can be avoided/ reduced by planting other sources of nectar or pollen nearby. **Newcastle University** showed clear evidence that undermines this presumption, bees prefer foods containing neonicotinoids, even though this caused them to eat a less varied diet overall.
4. Neonicotinoids are ‘a key factor in the decline of bees’ says the **Global Task Force on Systemic Pesticides**, the most comprehensive global study of neonicotinoids ever undertaken. It found that they are ‘causing significant damage





to a wide range of beneficial invertebrate species.’

5. In a thorough review of evidence respected science academies concluded that there is “clear scientific evidence” for sub-lethal effects on bees and other pollinators exposed to very low levels of neonicotinoids. **European Academies Science Advisory Council**
6. Research by the Food and Environment Research Agency (Fera) showed a correlation between honey bee colony losses and use of the neonicotinoid imidacloprid in England and Wales over an 11 year period.
7. In August 2016 a government sanctioned study by the **Centre for Ecology and Hydrology** linked use of neonicotinoids on oilseed rape over 18 years to declines of different wild bee species. Wild bees exposed to neonics were “on average three times more negatively affected”.
8. Neonicotinoids can still be used on wheat as it is not pollinated by bees. But there is evidence that, because neonicotinoids enter the soil and don’t break down quickly, residues turn up in wildflowers⁴.

Farming without neonicotinoids

The impacts of neonics on wild bees (rather than just focusing on honeybees) are a significant concern for future food production as they pollinate most of our crops.⁵ Increasing evidence also suggests that neonicotinoids may be detrimental to earthworms, crucial to soil quality, and to other beneficial insects which feed on pests, so **farmers could lose a vital natural crop protection service.**

Some apocalyptic claims have been made about the impact of the EU neonicotinoid restrictions on crop yields⁶. These have turned out to be unfounded. The 2015 oilseed rape harvest – the first without neonics – saw that average crop yields were above the long-term average. A new world record for oilseed rape yield was even set on one farm in Lincolnshire. Although the 2016 harvest was below average this was due to a range of reasons including the weather, weeds, and slugs, with pests normally targeted with neonicotinoids being only one factor.

Even where crop loss to pests has occurred, it can’t be assumed these losses would not have happened had neonicotinoids been available. At the same time the assumed benefits

of neonicotinoids on crop yields are increasingly being questioned with evidence emerging that their use does not necessarily aid yields. A FERA study did not find any consistent benefit to yields over time.

It’s also been claimed that farming without neonics means turning to ever greater use of other older pesticides known as pyrethroids. There is no need for this to happen (though some farmers have done so) and it should be noted that pyrethroid use has risen over time even with neonics available. Oilseed rape can resist significant pest damage and with careful monitoring before spraying, best agricultural practice and use of alternatives to pesticides such as attracting beneficial pest-hunting insects, farmers can minimise pesticide use. Only a minority appear to be adopting these approaches and much more must be done by the Government and NFU to support their introduction.

Friends of the Earth is calling on the UK Government to recognise the growing evidence of harm from neonicotinoids, to support a permanent ban on the three neonicotinoids – and extend it to all crops and all neonicotinoids. Over 80% of the British public want the UK to keep the ban when it leaves the EU⁷.

For more information visit www.foe.co.uk/bees
or email: beeinfo@foe.co.uk

¹ Annex 1, paragraph 6, Written evidence to the Environmental Audit Committee’s insects and insecticides inquiry, December 2012

² Nearly 1 in 10 wild bee species face extinction in Europe...’ last modified 19th March 2015, <http://www.iucn.org/?19073/Nearly-one-in-ten-wild-bee-species-face-extinction-in-Europe-while-the-status-of-more-than-half-remains-unknown---IUCN-report>

³ <http://www.efsa.europa.eu/en/press/news/130116>

⁴ David, A. et al. (2016). Widespread contamination of wildflower and bee-collected pollen with complex mixtures of neonicotinoids and fungicides commonly applied to crops. *Environmental international*. 88. pp. 169-178. ISSN 0160-4120. www.sciencedirect.com/science/article/pii/S0160412015301161

⁵ Garibaldi et al (2013) <http://www.sciencemag.org/content/339/6127/1608.abstract>

⁶ <http://www.nfuonline.com/news/latest-news/neonicotinoid-ban-continues-to-devastate-osr-crop/>

⁷ YouGov poll August 2016, https://www.foe.co.uk/resource/press_releases/uk-public-overwhelmingly-back-eu-rules-protect-bees-nature-yougov-survey