



## LOOKING AT THE FULL PICTURE: THE NEONICOTINOID DEBATE

Given the millions of pounds invested by agrochemical companies in neonicotinoids products – matched against **Britain's love for our bees** – it is not surprising that the debate over neonicotinoids has been so fierce. One issue has been that conflicting messages are being given, and often, the complete picture is not given. This is problematic if you want to make your own opinion by weighing up the risk and benefits. We have therefore tried to base our position on the full facts.

### The impacts on our pollinators

In terms of the impacts on pollinators, representatives of the pesticide industry have said that on real life farms (as opposed to lab tests) there is little or no evidence that neonicotinoids harm bees. This isn't the case.

A recent statement on all the available scientific evidence<sup>1</sup> was requested by the government and undertaken by independent scientists – this concluded that there is enough evidence to establish that neonicotinoid levels in farms are bad for bees. But that isn't to say uncertainty doesn't remain. The report said that scientists have not done research which would show whether or not these impacts are so big they actually reduce populations of bees – something which is extremely hard to study. One field trial in Sweden<sup>2</sup> which did attempt this however, suggests neonicotinoids do cause population declines – but for scientists to say they are sure, more studies (replication) would be needed.

### Let's not forget our wild bees

Importantly, the evidence suggested that neonicotinoids do have a negative impact on populations of wild bees and bumblebees, and that the evidence is not so clear for honeybees (although colony declines have nonetheless been correlated with neonicotinoid use<sup>3</sup>). Those in favour of neonicotinoids appear to only want to discuss honeybees, however our other pollinators are crucial to our farmland ecology and food, and 1 in 10 currently faces extinction in Europe<sup>4</sup>. Research has concluded that wild pollinators like bumblebees and butterflies are now responsible for between around 70-90% of UK pollination<sup>5</sup>.

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<sup>1</sup> Godfray et al (2015) 'A restatement of recent advances in the natural science evidence base concerning neonicotinoid insecticides and insect pollinators'

<http://rspb.royalsocietypublishing.org/content/282/1818/20151821>

<sup>2</sup> Rundlöf M et al (2015) 'Seed coating with a neonicotinoid insecticide negatively affects wild bees' [doi:10.1038/nature14420](https://doi.org/10.1038/nature14420)

<sup>3</sup> Budge et al (2015) 'Evidence for pollinator cost and farming benefits of neonicotinoid seed coatings on oilseed rape' <http://www.nature.com/articles/srep12574>

<sup>4</sup> <http://www.bbc.co.uk/news/science-environment-31963056>

<sup>5</sup> <http://planetearth.nerc.ac.uk/news/story.aspx?id=996>

What about how useful neonicotinoids are to farmers?

Surprisingly, a lack of independent studies means we don't really know how well they actually work. We can look at how oilseed rape farmers have fared without neonicotinoids during the ban. Examples of farmers who have lost some or their entire yield have been highlighted in the media – but these are the exceptions and we don't know if the cause was indeed the lack of neonicotinoids. Overall government data suggests that oil seed rape yields in the UK have actually been above the 10 year average<sup>6</sup> – suggesting that these insecticides are not vital for farmers to grow oil seed rape as a crop.

But is this because farmers have resorted to alternatives that are worse for wildlife?

Pesticide companies argue neonicotinoid seed treatments are highly targeted and therefore less damaging to wildlife than alternative, broad-spectrum pesticide spraying. Scientists have however found that neonicotinoids, which move from the seed into every part of the plant, are highly contaminating to our countryside. Only 5% of neonicotinoid seed treatments remain in the crop, 1% is lost as dust, 94% goes into soils and streams<sup>7</sup>. Any growing plant can take these chemicals up into their leaves, stems, flowers and fruits and scientists have now found neonicotinoids at high doses inside the pollen of wildflowers, such as poppies and hedgerow blossom<sup>8</sup>. As seed treatments, neonicotinoids are used prophylactically, *in case* of a pest outbreak. This is bad farming practice – it's a bit like taking a paracetamol every day in case you get a headache. You take more than you need, and over time you stop it working so well when you need it to.

But are farmers using alternative pesticides in place of neonicotinoids? One recent study suggests neonicotinoids reduce the use of other pesticides in autumn, but not during flowering when bees and other pollinators could be exposed to them<sup>9</sup>. Furthermore, these broad-spectrum pesticide sprays have been used too often and pests have become resistant to them. Instead the main alternatives to neonicotinoids are not pesticides but agroecological techniques that are used as part of Integrated Pest Management – a way in which farmers can produce food, whilst drastically reducing pesticide use and ensuring that they can keep farming into the future. One innovative farmer has been trialling the use of mixed companion crops to help promote the natural predators that kill oil seed rape pests<sup>10</sup>. Other methods include growing a greater variety of crops to break up the cycle of pests that have developed.

Our position on neonicotinoids

The Soil Association's position is that a permanent ban on neonicotinoids is necessary; there is enough evidence to show that neonicotinoids are harming our pollinators and little evidence to show that farmers need neonicotinoids, with support for agroecological farming practices being the

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<sup>6</sup> <http://cereals.ahdb.org.uk/markets/market-news/2015/september/10/adas-harvest-report-7-week-9.aspx>

<sup>7</sup> Goulson (2015) 'The Environmental Fate of Neonicotinoids'  
[http://www.nature.com/nature/journal/v511/n7509/fig\\_tab/nature13642\\_F1.html](http://www.nature.com/nature/journal/v511/n7509/fig_tab/nature13642_F1.html)

<sup>8</sup> Botias et al (2015) 'Neonicotinoid Residues in Wildflowers, a Potential Route of Chronic Exposure for Bees'  
<http://pubs.acs.org/doi/abs/10.1021/acs.est.5b03459>

<sup>9</sup> Budge et al (2015) 'Evidence for pollinator cost and farming benefits of neonicotinoid seed coatings on oilseed rape' <http://www.nature.com/articles/srep12574>

<sup>10</sup> Jake Freestone 'Oilseed Rape with Companion Cropping'  
<https://www.youtube.com/watch?v=c2M5MMKBCek>

way forward. Whilst we don't know just how much neonicotinoids harm pollinator populations, we think it is sensible to put the bees first, and accept that these chemicals may weaken already vulnerable populations, acting as the last straw. Bees have suffered greatly from intensive farming practices, leaving them with drastically fewer flowers to feed on, new diseases to cope with and exposing them to not only neonicotinoids, but a whole cocktail of chemicals applied to crops. We are therefore campaigning to improve farming practices as a whole, so that we can help promote healthy populations of bees that are more resilient to what life throws at them.

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