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Why the government is wrong to ever allow banned neonics on our fields

Documents revealed by Freedom of Information rules show that when the government gave temporary approval to lift the ban on bee-harming chemicals it went against the recommendation of its own advisors.

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Not a happy new year for the bees

Neonicotinoid pesticides (also known as neonics) are banned in the European Union and the UK for use on all outdoor crops because of the high risk to bees and other pollinators. This ban was based on a thorough scientific assessment of the evidence and was backed by the UK government.

But in January 2021 the government gave temporary approval to use the neonicotinoid pesticide, thiamethoxam, while failing to follow the recommendation of its own expert advisors, according to documents seen by Friends of the Earth.

Not following the science

Official papers, obtained under Freedom of Information rules, show that the Health and Safety Executive (HSE) advised the government not to grant 'emergency authorisation' for sugar beet farmers to use thiamethoxam. The HSE raised several concerns about the proposed temporary use, including the impact on bees visiting flowering crops planted after the treated sugar beet. The HSE concluded that the application "does not demonstrate a safe use in the scientific risk assessment" and that **"On that basis the HSE recommendation is to refuse the use"**.

In 2018 the UK government refused a similar application for emergency authorisation for use of neonicotinoids on sugar beet due to the environmental risk. At that time it followed the expert advice it had been given.

Scientific evidence of harm has grown since then - as the Chief Scientific Advisor and the Expert Committee on Pesticides (ECP) pointed out in advice given to ministers in December 2020. The ECP also indicated that it would not be possible to mitigate for risk from using this product. Yet the government still gave the go ahead for its use, with a series of mitigation measures.

The government consistently says that it follows the science on pesticides but in this case it did not.

Saved by the weather...for now

The 2021 emergency authorisation was subject to a threshold for the level of crop damage predicted from virus yellows infection – which is carried by aphids – and determined by modelling carried out by Rothamsted Research. If the threshold was not met the seeds would not be treated. Luckily for the bees a spell of cold weather has had a significant impact on the overwintering aphid populations and resulted in the virus yellows prediction for the 2021 sugar beet crop being very low.

Unfortunately this may only be a short reprieve - the government has already indicated that it will consider authorising the use of this neonicotinoid on sugar beet for another two years.

Ask the government to cut pesticide use

<https://act.friendsoftheearth.uk/target/demand-ambitious-pesticides-reduction-plan>

Too much secrecy, not enough scrutiny

Friends of the Earth and our allies asked [to see all the evidence](#) behind the decision as soon as it was made. But we only received the information in March - and only after submitting an information request under Freedom of Information rules in January. It took HSE double the normal amount of time to respond to our request. Such secrecy and delays in releasing information make it hard for stakeholders and independent scientists to scrutinise or challenge decisions before it is too late.

There has been some speculation that this decision differed from the 2018 decision because the UK has left the European Union. Actually the same decision could have been made under EU regulations, but now the UK is outside the EU these decisions will have less independent scrutiny, so perhaps such a controversial decision is easier for ministers to make.

Here I explain some of the more worrying aspects of this decision and why we must have earlier access to the evidence when similar applications are submitted in the future.

Banned for a good reason

Three neonicotinoid insecticides were banned in 2013 for a good reason. Independent scientific evidence shows that [these chemicals harm bees and other pollinators](#). Applied as seed treatments, they're taken up by the whole plant so that bees get a dose of neonicotinoids when they feed on flowering crops. The ban was extended to non-flowering crops like wheat and sugar beet in 2018, following a comprehensive [review of the scientific evidence](#). This concluded that these chemicals contaminate the soil, so that crops grown in the same field and wildflowers grown nearby can take up the chemical. Bees can even get a harmful dose by drinking from sap droplets on a plant. Neonicotinoids also contaminate water, and consumption of treated seeds poses a risk to birds.

All of these risks were referred to by the government's expert advisors in their advice at the end of last year on this application for emergency authorisation.

The evidence against these chemicals is clear. They should have no place in our countryside - even for temporary use.



Rows of sugar beet growing in field © **iStock**

Why this decision must not be repeated



Close up of young sugar beet plant in field © iStock

Risks to bees and other wildlife - even from temporary use

In 2018, the application for emergency authorisation for neonicotinoids was rejected on the grounds that the risks to bees and the wider environment were too great, including:

- Risk to bees from residues in soils taken up in subsequent crops and wildflowers.
- Risks to birds and mammals eating seedlings and birds eating treated seeds.
- The potential for concentrations of neonicotinoids in surface waters to be at levels that could harm populations of aquatic insects.



Gray partridge in field © pixabay

The same risks were identified in the 2021 application.

For example in December 2020 the Health and Safety Executive (HSE) advised that **"the risk from following crops has not been shown to be acceptable"** and pointed to risks both in terms of pollen and nectar from flowering crops and guttation (drinking sap) from maize crops.

HSE also warned that surface water could fail PNEC levels (Predicted No-Effect Concentration) and that there was some risk to birds from eating treated seed, although this was an unlikely route of exposure.

Growing evidence of harm

In their advice on the 2021 application the Chief Scientific Advisor (CSA) and Expert Committee on Pesticides (ECP) both pointed to the increasing evidence of harm from these chemicals.

In September 2020 the ECP noted that "the scientific evidence for harmful environmental effects had grown". It repeated its warning in November, advising that published literature indicates potentially significant risks to a range of wildlife that includes, but is not restricted to, pollinators and that **"It was not possible to identify how the key risk associated with the use of this product could be further mitigated"**.

In December 2020 the CSA said that "Environmental damage of neonicotinoid use is clear and the evidence is increasing. **Keeping neonicotinoid use to an absolute minimum will continue to be critical to support population recovery of bees and other species"**.

Despite these warnings from its own advisors, the government decided that the risks would be managed by mitigation measures.

What about wild bees?

Evidence increasingly shows that solitary and bumblebee species are harmed by neonicotinoids but the assessment for this emergency authorisation only considers the potential impact on honey bees.

Any assessment of future applications for emergency authorisation for neonicotinoids must consider the impact on our wild bees and not just managed honey bees.

Why are the mitigation measures flawed?

Destroying flowering weeds

The 2018 ban that was backed by the UK government and the refusal of an emergency application in 2018 both pointed to the risk from neonicotinoids being taken up by wildflowers. In the 2021 authorisation, Defra says "The applicant recognised that risks could be posed to bees from flowering weeds in and around the crop and proposed to address this with the use of industry-recommended herbicide programmes to minimise the number of flowering weeds in treated sugar beet crops".?

It seems perverse that a measure meant to protect bees would involve removing flowers and using more chemicals.

In fact HSE noted that "Whilst we would not usually use weed control as mitigation to protect pollinators from flowering weeds (because the loss of food can cause more harm than the pesticide and because not all farmers successfully control weeds)" but still went on to conclude that "in the case of this emergency application it can be considered that the weed control for sugar beet will reduce the risk to pollinators from exposure via flowering weeds".

It's certainly an indication of just how toxic and persistent these chemicals are that such a measure is deemed necessary by the government to allow their temporary use.

Risk from wildflower margins

However, wildflowers in margins around the edge of the field would not have been subject to this control. Evidence shows that bees can be exposed to harmful levels of neonics via wildflower margins. Whilst it would be even more perverse to wipe out wildflowers planted to help pollinators it is a concern that this route of exposure - clearly indicated as a risk to bees by EFSA in 2018 - was not covered by any mitigation measure.

Avoid planting flowering crops for over 2 years after treated sugar beet

The risk to bees from succeeding flowering crops in soil containing neonicotinoid residues is one of the reasons for the neonic ban being extended to sugar beet (a non-flowering crop), and this specific issue was also flagged in the 2018 emergency authorisation decision for future applications to address.

The Defra statement for 2021 says that, to address this, conditions applied to the authorisation include "no flowering crops are planted as following crops for a period of at least 22 months, with an extended period of exclusion for oilseed rape (of 32 months), to minimise the risk to bees". Again, it's an indication of just how toxic these chemicals are that such a long period of time is needed before a flowering crop can be grown.

However according to the government's advisors even this is not enough - HSE warned that there could be impacts on bees after 22 months or longer.

Even with the 32 month gap imposed for oilseed rape risks to bees cannot be ruled out, the HSE stated in its advice that **"It has not been possible to quantify how long it would take for the levels to drop to below the point where there would be adverse effects on honey bee"**

colonies". Papers seen by Friends of the Earth indicate that the risk of exposure at sub-lethal levels even after this long delay could effect honey bees' ability to find their way back to the hive.

Defra fails to address the risk from maize being grown subsequently to the sugar beet – the risk would be due to bees drinking sap water – and this was specifically raised as a concern by the HSE but not covered by any mitigation measure.

Reducing the rate of application

Defra's statement says that there will be a reduced application rate for the seed treatment but would this be enough to avoid harm to aquatic invertebrates? Neonicotinoids used at normal rates on sugar beet in 2016 caused the River Waveney to be [chronically and acutely polluted with thiamethoxam](#). Yet in the 2021 authorisation Defra states that the risks to aquatic invertebrates are "considered to be acceptable".

HSE warned that there would be impacts from surface water contamination. But no other mitigation measures were imposed to reduce the risk of water pollution.

Bending the rules?

Demonstrating need is a [key requirement for authorisation of emergency use](#), including that there aren't alternative ways to control the pest or disease. The [Defra statement for the 2021 decision](#) states that "This protection cannot be provided by any other reasonable means".

Defra (the Department for Environment, Food and Rural Affairs) states that "The applicant outlined a plan for developing alternative, sustainable approaches to protect crops without the use of neonicotinoid seed treatments. This includes the development of resistant plant varieties, measures to improve seed germination and new practices for growers. The plan is already being delivered".

The use of natural predators can be an effective way to control aphids. In its comments on this application HSE noted that ladybird numbers had been low in 2020 and that there are challenges in encouraging consistent natural predators.

A broader question is whether the industry is putting enough effort into helping growers use non-chemical methods. Farming with nature requires a more holistic approach than reaching for a spray or treated seed. Natural predators need habitat on the farm. Farmers will need the right kind of advice and support to move away from insecticides. The market is highly concentrated, with British Sugar buying all UK sugar, so it has considerable influence over how crops are grown, making its advice to farmers on alternatives crucial.

Applicants must also demonstrate that the use will be controlled. The use of the virus-forecasting model to determine whether treatment is needed was one way in which the applicants sought to control use in this case. Forecasting can be an effective way to reduce the need to apply authorised pesticides - as evidenced by the treatment not going ahead in 2021.

However concerns were raised by HSE that the model was not refined enough to allow for variations in virus threat across the growing area - **"if the entire crop receives this prophylactic seed treatment, it may transpire that for some growers the seed treatment was not required."**

Has this happened because we've left the EU?

The decision to grant emergency authorisation has not necessarily been facilitated by the UK's departure from the EU. Emergency authorisations have been a problem across the EU, so much so that the European Commission has asked for an independent scientific review of those granted so far. The European Food Safety Authority is currently [scrutinising these decisions](#) and expects to report in 2021.

Of course, the UK decision will not be included in this review – raising the question of whether scrutiny of such decisions will be robust outside the EU.

Three years of "emergency" applications?

UK guidance on emergency authorisations states that “It would not generally be expected that there will be requests for emergency authorisations that have been previously granted to be renewed”. Shockingly, in this case it seems that Defra is already anticipating granting further emergency authorisations, Defra states that **“The plan anticipates that applications for emergency authorisations for neonicotinoid seed treatments may be needed for three years (2021 to 2023)”**.

The government’s advisers on the Expert Committee on Pesticides (ECP) [noted in September](#) that “the industry’s strategy to move away from their reliance on emergency authorisations was not clear”. By suggesting that it will consider granting repeated “emergency” uses, the government is sending a perverse signal.

This is no incentive for the industry to move away from these toxic chemicals.

Is there any case for using banned pesticides?

The National Farmers Union (NFU) and British Sugar applied for the emergency authorisation of neonicotinoid-treated seed, claiming that crop yields - in the East of England where most sugar beet is grown - would be threatened if farmers couldn’t use these pesticides in 2021.

[The NFU claims](#) that in 2020 “some farmers” experienced yield reductions of “up to 80%” due to the beet yellows virus being spread by aphids. However, in October the farming press was painting a more positive picture. According to Farmers Weekly: “Early yields from the sugar beet harvest are higher than expected after a tricky growing season hit by a spring drought and aphid-spread virus yellows disease”.

In February 2021 modelling showed that cold weather had slowed the build up of aphids and that the threat to the crop no longer warranted the use of thiamethoxam in 2021.

It’s worth remembering there was a similar warning of crop failure from the NFU over the ban on using neonic-treated seeds for oilseed rape. Oilseed rape yields have fluctuated since the 2013 ban, but there’s no clear trend of decline. In fact, there have been some bumper harvests since the ban as well as some poor ones. Hill Farm, which has worked hard to adopt nature-friendly farming techniques, reducing all insecticide use, [recently reported](#) its best crop for 5 years.

The wrong direction for farming

The decision to allow a harmful pesticide to be used, albeit on a temporary basis, is symptomatic of a wider failure to invest in the support farmers need to reduce reliance on chemicals and pursue nature-friendly farming practices. It's widely recognised that healthy functioning ecosystems are essential to food production and that future food production could be undermined by damage to biodiversity.

The government is currently rewriting its [National Action Plan for the sustainable use of pesticides](#). The draft plan commits to setting targets to reduce the harm from pesticides, but is weak on how it will support farmers to adopt non-chemical farming practices. It's essential that the government sets out ambitious targets that cut the use and impacts of pesticides and help farmers get off the chemical treadmill.

What is Friends of the Earth doing?

We consider the lack of transparency in this process to be unacceptable for a decision that has considerable public interest and high stakes in terms of environmental damage. Sadly we're not surprised. Friends of the Earth has regularly had to use Freedom of Information legislation to force the government to publish information about neonicotinoids that should rightly be in the public domain. The lack of transparency in this process means that stakeholders, including independent scientists and civil society, are unable to scrutinise the decision.

Friends of the Earth along with other civil society organisations supported an amendment to the Environment Bill that would ensure greater transparency in future decisions. Friends of the Earth is also making a formal complaint to the Information Commissioner, owing to the repeated delays in releasing information under Freedom of Information rules by HSE.

We're also campaigning for a strong National Action Plan that includes ambitious targets to reduce the use and impacts of pesticides, a commitment not to bring banned bee-harming chemicals back into use, and much better support to help farmers adopt nature-friendly methods of farming.

Over 158,000 people have already asked Defra to cut pesticide use to help wildlife. Please join with Friends of the Earth and others to keep up the pressure on the government to reduce unnecessary pesticide use.

Ask the government to cut pesticide use

<https://act.friendsoftheearth.uk/target/demand-ambitious-pesticides-reduction-plan>