

Agriculture Bill: why pesticide reduction must be part of the UK's new farming policy

Summary

While overall Friends of the Earth remains deeply concerned about the possible impact of Brexit on the UK's environment¹, the need to develop a new farming policy for when we leave the EU provides a unique opportunity to bring about a positive change that will protect and boost our nature, public health and animal welfare whilst also improving the resilience of our food production.

Long term farming productivity relies on healthy soils and a recovery in the services provided by nature such as pollination and natural pest control. Pesticides are one of the main farming inputs used to increase production (in non-organic systems) but the assumption that using more pesticides always leads to more productivity is questionable. Innovative conventional farmers are already showing that using less pesticides - working with nature instead of against it - is economically viable. There is a place for pesticides in conventional farming but over use of pesticides is damaging natural resources, posing a long term threat to the resilience of future food production.

Friends of the Earth has welcomed Michael Gove's proposal that future government intervention in agriculture and land management will be based on the principle of public money for public goods. This broad purpose needs to be confirmed in the Agriculture Bill. There is an urgent need for long term, ambitious, and legally binding targets to restore health to our countryside. The Agriculture Bill is a critical opportunity to take this step. Friends of the Earth is working with NGOs in Wildlife and Countryside Link and Greener UK in calling for these broad ambitions².

In addition Friends of the Earth is specifically focussing on the need for a reduction in pesticides – and a move towards integrated pest management (IPM) where chemical pesticides are used as a last resort to tackle pest and disease instead of a prophylactic treatment. This would be a significant progressive step following the recent UK backing of the ban of three bee-harming neonicotinoid insecticides. Bees and other wildlife are still under threat due to the over-use of pesticides.

Friends of the Earth is calling for:

¹ <https://friendsoftheearth.uk/brexit/brexit-risks-explained>

² <https://www.wcl.org.uk/farming.asp>

- **a commitment to be set in the Agriculture Bill for targets to restore nature including an ambitious target for pesticide reduction**
- **Policy Measures and payments to support low input farming including a significant increase in Integrated Pest Management with minimal pesticide use.**

Reducing pesticide use would contribute to multiple public goods including the provision of clean water, healthy soils, healthy food and thriving nature. But a reduction target won't work unless farmers are supported to get off the chemical treadmill. Organic farmers are already doing a great job of farming without or with minimal pesticides. The new farming policy needs to support them but it also needs to help conventional farmers to cut chemical use. Farmers who've already taken these steps show that conversion to a low input system can be profitable - if the government gets this right it can help farmers and nature at the same time.

Pesticides are driving wildlife decline and environmental damage

The recent decision to ban all outdoor uses of bee-harming neonicotinoid insecticides is very welcome. Where pesticides are shown to be harmful they should be banned but that process can take a long time as was the case with neonicotinoids. Our countryside would be safer for wildlife if all chemical pesticide use was minimized.

Defra's Chief Scientist Professor Ian Boyd, with co-author Alice Miliner recently published a paper questioning the safety of current levels of pesticide use for the environment³: "The effects of dosing whole landscapes with chemicals have been largely ignored by regulatory systems. [...] This can and should be changed." The scientists compared the overuse of pesticides to the situation with antibiotics saying that:

"Both have been manufactured and supplied to market demand with little care taken to consider whether this is sensible". Both are often used prophylactically when sparing use would be more appropriate".

Bees are not the only insects at risk from pesticide use. When the massive **decline in flying insects** in Germany⁴ hit the headlines in 2017 researchers pointed to pesticide use as a potential reason.

"As entire ecosystems are dependent on insects for food and as pollinators, it places the decline of insect eating birds and mammals in a new context," said lead researcher Hans de Kroon. "We need to do less of the things that we know have a negative impact, such as the use of pesticides."

The UK's butterflies are also struggling. New figures published by Defra in June 2018⁵ show that **butterfly populations in England have nose-dived by 27% on farmland and 58% in woodland** since 1990. Many bird species such as skylarks and spotted flycatchers

³ <https://www.theguardian.com/environment/2017/sep/21/assumed-safety-of-widespread-pesticide-use-is-false-says-top-government-scientist>

⁴ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809>

⁵ https://www.gov.uk/government/statistics/butterflies-in-the-wider-countryside-england?utm_source=5c40a843-aafe-4d80-b570-dacdb1ea7268&utm_medium=email&utm_campaign=govuk-notifications&utm_content=immediate

are dependent on a good supply of insects for food. In March 2018 as a new study⁶ revealed bird numbers across France have declined by a third in the past 15 years, and linked the figures to changes in agricultural practices including pesticide use. Our own UK birds are struggling just as much as their French counterparts. **The UK's farmland birds have declined by 54 per cent since 1970**⁷.

"Lots of these farmland birds that are declining, they eat invertebrates and they feed their young on invertebrates, and those are the things that are hit by general pesticides in the countryside," Professor Richard Gregory, head of species monitoring and research at the Royal Society for the Protection of Birds (RSPB)⁸

Lack of insect food has also been suggested as a contributory factor to the significant **hedgehog decline** in rural areas and scientists say this could be linked to the use of pesticides⁹.

Profitable farming with less pesticides

Farmers must protect their crops from pests and diseases. But over-use of pesticides leads to resistance problems making the products less effective against pests as happens with antibiotics. Defra Chief scientist Ian Boyd has warned that better global governance of pesticides and their use is needed to avoid loss of efficacy.

Current levels of pesticide use are unnecessary as well as damaging. A study in France¹⁰ found that the vast majority (94%) of farms would not produce less crops if they cut pesticides. It found that some of these (two-fifths) would actually produce more. The results were most startling for insecticides: lower levels of pesticide use would result in more production on 86% of farms. No farms would produce less.

Helping nature by cutting pesticides will help ensure UK farmers can produce good quality food into the future. The long term productivity of UK farming will be dependent on healthy soils and a recovery in the services provided by nature such as pollination and natural pest control.

For example around three quarters of ground beetle species (carabids) studied are declining. This is of concern to future food production because carabid beetles control insect pests such as aphids, slugs and wireworm¹¹. Scientists attribute the decline to multiple threats including pesticide use and habitat loss.

This relationship between food production and a healthy environment has been recognised by the Food and Agriculture Organisation of the United Nations (FAO): "while the last half-century has witnessed striking increases in global food production through

⁶ <https://www.independent.co.uk/environment/europe-bird-population-countryside-reduced-pesticides-france-wildlife-cnrs-a8267246.html>

⁷ <https://www.rspb.org.uk/our-work/conservation/projects/state-of-nature-reporting>

⁸ <https://www.independent.co.uk/environment/europe-bird-population-countryside-reduced-pesticides-france-wildlife-cnrs-a8267246.html>

⁹ <https://www.independent.co.uk/environment/mammals-uk-extinction-hedgehogs-water-voles-squirrels-nature-farming-pesticides-a8395581.html>

¹⁰ <http://www.nature.com/articles/nplants20178>

¹¹ <http://www.coleoptera.org.uk/carabidae/home>

intensive use of inputs, such practices may deplete natural resources and impair the ability of agro-ecosystems to sustain production into the future.”¹²

High inputs incur high cost and some innovative farmers are already moving away from a high input high yield approach to farming to an equally profitable low input approach.

As Lincolnshire farmer Peter Lundgren puts it “Over the past decades, whilst pesticide inputs have been increasing and the cost of pesticides has been increasing, the average yield has remained stubbornly stagnant and farmgate prices for outputs have fallen significantly in real terms to a point where gross margins are negative and the future economic viability of farming and food production is being questioned”.

Peter stopped using neonicotinoids on all his crops ahead of the ban with no loss of yield Peter regards natural predators such as spiders and beetles as a key element of pest control on his farm with careful use of alternative pesticides only when needed.

Hertfordshire farmer John Cherry is also enthusiastic about the role that nature can play in managing crop pests. He hasn't used any insecticides on his farm for 3 years. He says he has no regrets, and is saving money that he would have spent on pesticides: “The crops look better than ever and the key is having enough natural predators, as we are trying to work with nature rather than against it.”¹³. John is part of a growing group of farmers who practise Conservation Agriculture - a set of soil management practices that minimize the disruption of the soil's structure, composition and natural biodiversity.

Supporting farmers to meet the target

Friends of the Earth has been working with Lincolnshire arable farmer Peter Lundgren to identify the best ways to support farmers to reduce pesticide use¹⁴. Some key recommendations are emerging from this work:

- **Independent Advice is needed.** The relationship between the farmer and their agronomist is fundamental to how pest management is carried out on the farm but many agronomists are linked to companies selling pesticides. The provision of agronomy services that are independent of pesticide merchants and manufacturers is seen as a vital step in helping farmers to be confident in using less pesticides and embracing non-chemical approaches as the primary method of control. This will require changes to the training of agronomists and a new system of knowledge transfer to farmers.
- **Farmers need the right kind of R&D** – There is a need to refocus agricultural research and development so that it takes a systems approach to finding economically viable low input production. There is a place for research into new technology such as robots that can, for example, deliver a much more precise dose to target weeds than current sprayers. But innovation is not just about technology - research into cultural solutions must be given equal footing including measures

¹² <http://www.fao.org/agriculture/crops/thematic-sitemap/theme/biodiversity/ecological-intensification/en/>

¹³ <https://www.fwi.co.uk/arable/crops-look-better-after-hertfordshire-farm-bans-insecticides>

¹⁴ Farmer Peter Lundgren, working with Friends of the Earth has held consultations with farmers, agronomists and farming groups to identify some key recommendations for supporting farmers to cut pesticide use.

such as optimising rotations to prevent build-up of pests and diseases, companion cropping and habitat creation to maximise natural predators.

- **Future farm payments should reward low input farming-** . Cutting pesticide use would deliver on multiple public goods such as clean water, healthier soils and thriving wildlife. The Agriculture Bill and the development of associated policy and legislation provides a unique opportunity to support farmers to adopt an approach based on integrated pest management (IPM) and agro-ecological techniques This could either be delivered by a systems based payment (based on a clear definition of IPM) or outcome based payments e.g. for increased wildlife. More investigation is needed into the best approach.

Pesticide reduction target needed to drive change

An ambitious target for pesticide reduction is needed to signal the scale of change that is needed and to allow monitoring of progress. A simple target to reduce weight of product used will not be effective. To have a positive impact for the environment and health the target must take into account toxicity and frequency of use. This approach has been successfully used in Denmark¹⁵

Although the National Farmers Union claims that pesticide use has gone down in the UK this claim is based on weight of product only. Analysis by Pesticides Action Network UK found that the number of times crops are treated with pesticides has risen since 1990, for example in 2016 55% of cereals were treated more than four times compared to only 30% in 1990. Over this time the area of land treated with pesticides has also increased and the pesticides used have also become more toxic¹⁶.

Meeting the commitments in the 25 Year Environment Plan

An ambitious target to reduce pesticides and measures to increase take up of IPM are needed to deliver on commitments in the Government's 25 Year Environment Plan. The 25 year plan includes commitments to "reducing the use of pesticides in the round" and "Putting IPM at the heart of a holistic approach" to crop protection. The review of the UK's **National Action Plan on Pesticides** in 2018 is another opportunity to ensure that there are effective measures in place to cut pesticide use. The review of the NAP in 2018 will meet an EU requirement under the Sustainable Use Directive but is also a commitment in the 25 Year Environment Plan.

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¹⁵ Danish National Actionplan on Pesticides 2017 - 2021

¹⁶ http://issuu.com/pan-uk/docs/the_hidden_rise_of_uk_pesticide_use?e=28041656/59634015