INTRODUCING A UK PESTICIDE REDUCTION TARGET

October 2018

PESTICIDE ACTION NETWORK UK

The UK's impending departure from the European Union represents a major opportunity to reduce overall pesticide use. In fact, the UK government has already laid out its stated intention to reduce pesticide use in the recent 25 Environment Plan. However, there is currently very little detail on how such a reduction might be achieved.[1]

PAN UK has long called for the introduction of a clear quantitative target to reduce the UK's overall use of pesticides and is heartened to see rising support for the idea among policymakers. A reduction target is also popular with the UK public: in 2018 more than 50,000 people have taken action calling for a pesticide reduction target to be introduced. This PAN UK briefing provides more detail on how to set a target and ways in which it could be used to drive a meaningful and lasting reduction in pesticide use, thereby helping to deliver the 'Green Brexit' promised by government.

Why a pesticide reduction target?

Setting clearly defined targets is recognised as a useful policy tool for establishing aspirations and driving action. National targets have already been laid down in other policy areas to help tackle important environmental issues such as carbon emissions and landfill waste

A national target is particularly appropriate in the field of UK pesticide policy because of the wide variety of actors involved in monitoring and regulating pesticide use across a range of sectors. UK pesticide policy is currently set using a siloed approach which fails to take into account, let alone mitigate, the cumulative impacts of the various pesticides that are being deployed. The introduction of a pesticide target would provide an over-arching framework to co-ordinate the work of multiple stakeholders and ensure that the various measures complement each other and contribute to this common goal. It would help consolidate the wide range of existing government activities on pesticides, ensuring that they deliver outcomes that are more than the sum of their parts.

Crucially, it would also provide UK farmers with clarity as to the government's direction of travel in terms of pesticide use, enabling them to make long-term decisions.

In 2017, DEFRA chief scientific adviser Professor Ian Boyd, noted that the "current assumption underlying pesticide regulation—that chemicals that pass a battery of tests in the laboratory or in field trials are environmentally benign when they are used at industrial scales—is false". His paper goes on to highlight the fact that there is "little information about where, when, and why pesticides have been used, making it very difficult to quantify potential environmental effects". The monitoring required to assess progress on meeting a reduction target would improve our understanding of how pesticides affect the environment at a landscape-scale and enable us to design regulation accordingly.[2]

Given the high levels of current UK pesticide use, significant reductions could be achieved through relatively low cost and simple interventions. A variety of opportunities exist for including a pesticide reduction target into the UK's post-Brexit policy framework, most notably within the Agriculture or Environment Bills and the metrics used to measure progress on the 25 Year Environment Plan.

Which countries already have a pesticide reduction target in place?

This is not a new or novel policy recommendation. In fact, a range of countries (including nine EU Member States) already have reduction targets, introduced in response to widespread public concern over the health and environmental impacts of pesticides. Here are a few examples:

- In 2008, France made a commitment to halve overall pesticide use by 2018. Progress is monitored by evaluating three quantitative indicators: number of unit doses, quantity of active ingredient, and treatment frequency index. This is an ambitious plan and it is not yet clear if France will meet its target. Some early analysis reveals progress is being made in some areas, most notably soft wheat. The introduction of a clear reduction target has enabled a wide range of measures to be implemented and the overall policy framework to align in order to work towards this common goal.[3]
- In 2011, Denmark adopted a target for an overall pesticide use reduction of 40% and research suggests this target has been met. A key factor behind the success appears to be the introduction of a pesticide tax at 34-55% of sale price. As in France, the target has been a driver for innovation and has helped identify effective mechanisms for meeting the country's overarching objective of pesticide use reduction.[4]
- In 2015, China acknowledged that there is a need for an overall reduction in the use of pesticides and set a target of a zero increase in pesticide use by 2020. Its aim is to develop "an efficient, environmentally friendly, and sustainable system to manage pests." Information on the progress made is not currently available.[5]

Would the UK public support a pesticide reduction target?

Given the high levels of current UK pesticide use, significant reductions could be achieved through relatively low cost and simple interventions. A variety of opportunities exist for including a pesticide reduction target into the UK's post-Brexit policy framework, most notably within the Agriculture or Environment Bills and the metrics used to measure progress on the 25 Year Environment Plan. There is widespread public support in the UK for a reduction in pesticide use. In polling carried out for PAN UK in September 2017, 71 per cent of the 1,203 respondents stated that "the use of pesticides in the UK should be reduced" while only 15 per cent said that there was no need to reduce use. In addition, 78 per cent thought that "the government should provide more support to British farmers working hard to reduce their pesticide use".

Respondents included supporters of all political parties and fairly equal numbers of those who voted both for and against Brexit.[6] In addition, over 1.3 million people across Europe – including almost 100,000 UK citizens – have called on the European Commission to introduce mandatory pesticide use reduction targets.[7] In 2018, more than 50,000 people signed petitions calling for a target to be introduced via the Agriculture Bill.[8]

What type of reduction target could the UK adopt?

There are a number of possibilities for implementing a reduction target:

- An overall figure for pesticide reduction by a given year, as in the French example of 50 per cent by 2020.
- An overall target for reduction in the use of active substances deemed most hazardous to human health or the environment.
- A target for a reduction in the treatment frequency of pesticides in general.

What support will farmers need to meet a reduction target?

Regardless of the type of reduction target adopted, British farmers will require government support in order to meet it. Crucially, this must include state-funded research and development into Integrated Pest Management (IPM) and other non-chemical forms of pest control. In addition, farmers will need incentives that reward their efforts in reducing pesticide use, for example through subsidies delivered via the UK's new Environmental Land Management Scheme.

What's wrong with the way the UK currently measures pesticide use?

The key to the ability of any target to drive change is how the reductions are measured. Currently the government reports pesticide use in three ways; kilograms of active substance applied, area of land in hectares to which pesticides are applied, and the number of times a crop is treated.[9] While these metrics give some indication of the scale of pesticide use, they

fail to take into account the toxicity of the pesticides being applied and are therefore unable to provide an accurate picture of the toxic load being born by our natural environment. They are flawed for the following reasons:

- Weight is a meaningless and misleading metric since pesticides are becoming increasingly toxic, meaning that a much smaller amount of a chemical is now required to do the same job.[10] As an example, modern neonicotinoids are 10,000 times more potent than DDT.[11]
- The 'area treated' metric fails to take into account changes in the planted area of crops, and therefore appears to show reductions in pesticide use when, in reality, it's the total planted area that has decreased.
- The 'number of times treated' metric doesn't detail what dose of an active substance has been applied or its toxicity.

In summary, none of the three current methods for reporting pesticide use in the UK would be able to accurately measure progress towards a reduction target.

How should progress towards a UK pesticide reduction target be measured?

In order to effectively measure pesticide usage in the UK, and to assist as an indicator for a pesticide use reduction plan, the UK government should adopt a more sophisticated monitoring system that is able to better assess how overall pesticide use might be impacting human health and the environment.

There are a number of such systems currently in use in other countries which the government should explore in order to see which would be most appropriate to the UK context. The details of these monitoring systems differ but, crucially, each is underpinned by metrics which take into account the toxicity of pesticides being used, rather than solely monitoring by weight of active substance applied.

France, for example, uses the metric of Number of Unit Doses (NODU) which makes it possible to estimate an average number of treatments per hectare and thereby measure how intensely pesticides are being used.[12] Denmark, meanwhile, used Treatment Frequency Index (TFI) for many years which, when combined with actual use data, made it possible to calculate the difference between the applied dose of a pesticide and its recommended dose, allowing a clearer picture of the intensity of pesticide treatment for a given crop area to be measured. Recently however, Denmark has adopted a new metric – the Pesticide Load (PL) – which has replaced TFI as its official 'pesticide risk indicator'. The PL consists of three sub-indicators for human health, ecotoxicology and environmental fate. In addition to being used to monitor trends in pesticide use and load, it is also used for setting quantitative reduction targets.[13]

In order to comply with the requirements of the EU Directive on the Sustainable Use of Pesticides, the European Commission has recently put forward a proposal[14] for monitoring pesticide use across the EU based on a set of 'Harmonised Risk Indicators' that take into account both sales and usage levels of active substances.[15] The proposal also recommends that a 'hazard quotient' be applied to individual active substances. The hazard quotient would divide approved active substances into three categories; those that are deemed low risk, those that are approved and 'normal' risk, and those that are considered Candidates for Substitution (meaning that they are of particular concern due to their negative impacts on heath or environment and therefore a less toxic alternative should be found).

There is also a category for those that are not approved but which might, under certain exceptional circumstances, be used. If implemented, this system would, at least in theory, enable Member States to identify changes in usage levels of different classifications of pesticides and design policies and programmes to support farmers to reduce usage accordingly.

It is likely that this particular system will be adopted by the EU at the end of 2018 before Brexit and thus will apply to the UK. Such a system could easily be maintained by the UK after leaving the EU, potentially providing a useful indicator of pesticide use, including highlighting whether any reduction targets are being met.

Whilst it is not clear without further investigation which system would best suit the UK, it is an area that the government urgently needs to consider. Brexit is an opportunity for the UK to adopt a new monitoring system which is able to assess the toxicity of the pesticides being used and their potential for harm to human health and the environment, including whether they pose a threat to water bodies. Only by being based upon meaningful metrics can a pesticide reduction target drive genuine change which better protects human health and environment from pesticide-related harms.

A national pesticide reduction target is just one of PAN UK's post-Brexit recommendations which, if implemented, would reduce the harms caused by pesticides to human health and the natural environment. The full list can be found on our website: www.pan-uk.org/uk-policy

PAN UK is keen to work closely with the UK government, parliamentarians and other stakeholders to help to formulate a national pesticide reduction target that will deliver the best outcomes for British farmers, citizens and the environment. Contact Head of Policy and Campaigns, Josie Cohen, at josie@pan-uk.org or 07956 250 260 to discuss further.

References

1. DEFRA, A Green Future: Our 25 Year Plan to Improve the Environment, p.40, 11th January 2018.
2. Milner & Boyd, Toward pesticidovigilance: Can lessons from pharmaceutical monitoring help to improve pesticide regulation?, 22nd September 2017.
3. Ministry of Agriculture, Agrifood, and Forestry of France, Ecophyto Plan II, October 2015, https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_sup_nap_france_plan_ecophyto_2_en.pdf.
4. Pesticide Action Network Europe, Danish Pesticide Use Reduction Plan, June 2005, https://www.pan-europe.info/old/Resources/Reports/Danish_Pesticide_Use_Reduction_Programme.pdf.
5. China to phase out more pesticides in push to improve food safety, Reuters, 5th December 2015, https://www.reuters.com/article/china-pesticides/china-to-phase-out-more-pesticides-in-push-to-improve-food-safety-idUSL3N1O51PO.
6. Polling commissioned by PAN UK and SumOfUs and conducted by GQR Research, September 2017, https://gqrr.app.box.com/s/0ddbifc853j9k1t1sbjvuc1crvxw8zbc.
7. European Commission website, European Citizens' Initiative, Ban glyphosate and protect people and the environment from toxic pesticides, http://ec.europa.eu/citizens-initiative/public/initiatives/successful/details/2017/000002.
8. SumOfUs website, Michael Gove set a target to reduce pesticide use, https://actions.sumofus.org/a/michael-gove-set-target-to-reduce-pesticide-use; Friends of the Earth UK website, Shape the future of our countryside, https://act.friendsoftheearth.uk/act/shape-future-our-countryside.
9. Pesticide Usage Survey Statistics (PUS STATS), hosted on the website of Fera Science Ltd (Fera) on behalf of Defra, https://secure.fera.defra.gov.uk/pusstats
10. PAN UK, The Hidden Rise of UK Pesticide Use, March 2018, http://www.pan-uk.org/pesticides-agriculture-uk/
11. An overview of the environmental risks posed by neonicotinoid insecticides, Dave Goulson, Journal of Applied Ecology, 2013, p1, https://www.sussex.ac.uk/webteam/gateway/file.php?name=goulson-2013-jae.pdf&site=41.1
12. Institute for European Environmental Policy, Effective policy options for reducing environmental risks from pesticides in the UK, May 2016, p77, https://ieep.eu/archive_uploads/2211/IEEP_PANUK2016_RSPB_pesticides_report.pdf.
13. Kudsk, Jorgensen & Orum, Pesticide Load – A new Danish pesticide risk indicator with multiple applications, p1, https://www.sciencedirect.com/science/article/pii/S0264837717306002
14. EU Directive on the Sustainable Use of Pesticides, Article 15 Indicators, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009L0128
15. Standing Committee on Plants, Animals, Food and Feed Section Phytopharmaceuticals - Legislation 19 JULY 2018 - 20 JULY 2018, Agenda Item C.14, Exchange of views of the Committee on the Commission Draft Directive (EU) amending Directive 2009/128/EC to establish harmonised risk indicators.

Pesticide Action Network UK

PAN UK is based in Brighton. We are the only UK charity focused on tackling the problems caused by pesticides and promoting safe and sustainable alternatives in agriculture, urban areas, homes and gardens.

We work tirelessly to apply pressure to governments, regulators, policy makers, industry and retailers to reduce the impact of harmful pesticides.

Find out more about our work at: **www.pan-uk.org**

The Green Hub
The Brighthelm Centre
North Road
Brighton BN1 1YD

Telephone: **01273 964230**
Email: **admin@pan-uk.org**

PESTICIDE ACTION NETWORK *UK*