

## Written evidence submitted by Breast Cancer UK

To the Department for Environment, Food and Rural Affairs  
National Action Plan on the Sustainable Use of Pesticides

### Executive Summary

Breast Cancer UK welcomes DEFRA's publication of the draft 'National Action Plan for the Sustainable use of Pesticides' and the opportunity to respond to its policy proposals. We welcome the plans for commitments to "Establish a clear set of targets for reducing the risks associated with pesticide use by 2022" and introduce a new human bio-monitoring scheme.

For many years, we have been concerned about the impact of exposure to environmental pollutants and harmful chemicals on the nation's health and there is strong scientific evidence linking public exposures to pesticides with increased cancer risk. In our view, a healthier environment as well as healthier lifestyles, are essential to reduce breast cancer incidence rates and protect the nation's health. The new National Action Plan represents a unique opportunity to introduce more stringent public health protections.

### Key Recommendations

- **Introduce specific pesticide reduction targets and expedited phase-outs of substances that pose a high risk to human health and the environment alongside an effective human health monitoring and reporting system.**
- **Give the Department of Health and public health bodies direct responsibilities to monitor and recommend restrictions on substances of concern.**
- **Upgrade EDC criteria within the UK Plant Protection Regulations: to identify EDCs that 'may' cause adverse effects to human health and ensure they are not permitted for use as a pesticide or in pesticide formulations.**
- **Ensure pesticide authorisations and restrictions are based on a strict interpretation of the precautionary principle.**
- **Mirror and keep pace with the EU list of approved active substances and Maximum Residue Levels to ensure no future reduction in pesticide standards.**
- **Introduce financial incentives to encourage research into and use of non-toxic alternatives (such as biocontrol agents) to synthetic pesticides**

### About Breast Cancer UK

Breast Cancer UK is dedicated to the prevention of breast cancer by reducing public exposure to carcinogenic, hazardous and endocrine disrupting chemicals which are routinely found in our environment and everyday products. Breast Cancer is the most common cancer globally<sup>1</sup>. In the UK – around 55,000 woman and 390 men are diagnosed every year

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<sup>1</sup> International Agency for Research on Cancer (2021) ['World Cancer Day, Breast Cancer overtakes lungs cancer as leading cause of cancer worldwide'](#)

and countless more are affected by the disease<sup>2</sup>. Breast cancer incidence rates have increased 5% in the past 10 years and are predicted to rise yet further<sup>3</sup>.

There is growing scientific evidence that routine exposure to harmful chemicals, known as Endocrine Disrupting Chemicals (EDCs), found in many pesticide formulations, which mimic, inhibit or interfere with natural hormones, can lead to cellular changes that may increase the risk of developing breast cancer and other health conditions. Breast Cancer UK believes improved environmental and public health policies are urgently needed to encourage a preventative approach to diseases such as breast cancer.

**Question 1: In the context of maintaining high levels of protection for human health and the environment, what can we do to make the regulatory system for pesticides simpler and more efficient?**

Pesticide exposure has been linked to a number of cancers including breast<sup>4</sup>, prostate<sup>5</sup>, non-Hodgkin's lymphoma<sup>6</sup>, bladder<sup>7</sup> and colorectal cancer<sup>8</sup>. Pesticides may play a role in the development of breast cancer in different ways. They may be carcinogenic, for example polychlorinated biphenyls (legacy herbicides) are recognised by The International Agency for Research on Cancer (IARC) as carcinogens of the breast<sup>9</sup>. IARC has classified five pesticides in current use as either 'probably' or possibly' carcinogenic to humans. These include malathion, diazinon, glyphosate, tetrachlorovinphos and parathion<sup>10</sup>.

Numerous pesticides have been identified as being EDCs<sup>11</sup>, that alter the normal functioning of the hormone system. The NGO charity PAN Europe identified more 27 different endocrine disrupting pesticides present in foods consumed in Europe. Environmental

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<sup>2</sup> Cancer Research UK (2021) '[Breast Cancer Statistics](#)'

<sup>3</sup> Smittenarr, R.C., Petersen, A.K., Stewart, K., Moitt, N. (2016) '[Cancer incidence and mortality projections in the UK until 2035](#)', British Journal of Cancer, 115(9): 1147–1155

<sup>4</sup> IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Polychlorinated biphenyls and polybrominated biphenyls volume 107. Lyon, France, 2013.  
<file:///C:/Users/BCUK05/AppData/Local/Temp/mono107.pdf> (accessed February 16, 2021)

<sup>5</sup> Xu et al (2009) '[Association of Serum Concentrations of Organochlorine Pesticides with Breast Cancer and Prostate Cancer in U.S. Adults](#)' Environmental Health Perspectives: 118: 60-66

<sup>6</sup> Smith et al. (2017). 2,4-dichlorophenoxyacetic acid (2,4-D) and risk of non-Hodgkin lymphoma: a meta-analysis accounting for exposure levels. Annuals of Epidemiology 27(4): 281–289.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6336441/pdf/nihms-983446.pdf>

<sup>7</sup> Ling Z et al (2016) '[Pesticide exposure and risk of bladder cancer: a meta-analysis](#)' *Oncotarget*: 41 7:66959-66969

<sup>8</sup> Lee, w, J. et al (2007) '[Pesticide use and colorectal cancer risk in the Agricultural Health Study](#)', International Journal of Cancer, 2 121:339-346

<sup>9</sup> IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Polychlorinated biphenyls and polybrominated biphenyls volume 107. Lyon, France, 2013.  
<file:///C:/Users/BCUK05/AppData/Local/Temp/mono107.pdf> (accessed February 16, 2021)

<sup>10</sup> International Agency for Research on Cancer (2020) '[Agents Classified by the IARC Monographs, Volumes 1-128 - IARC Monographs on the Identification of Carcinogenic Hazards to Humans](#)'

<sup>11</sup> Pesticide Action Network Europe (2017). Endocrine disrupting Pesticides in European Food.  
[https://www.edc-eu-tour.info/sites/edc-eu-tour.info/files/field/document\\_file/report\\_ed\\_pesticides\\_in\\_eu\\_food\\_pan\\_europe.pdf](https://www.edc-eu-tour.info/sites/edc-eu-tour.info/files/field/document_file/report_ed_pesticides_in_eu_food_pan_europe.pdf)

exposures to pesticides such as DDT<sup>12</sup> and dieldrin<sup>13</sup>, have been found to promote breast cancer, and are now banned in the EU<sup>14</sup>. Pesticides such as Glyphosate<sup>15</sup>, Malathion and Chlorpyrifos<sup>16</sup> remain substances of concern given their links to increased breast cancer risk. This highlights the urgent need for stricter regulation of pesticides.

We welcome the central objective of the National Action Plan (NAP) to reduce “the risks and impacts of pesticides on human health and the environment” and its commitment to establish targets for reducing the risks associated with pesticide use by 2022<sup>17</sup>. This will support the government’s commitment to leave the environment in a “better state than they inherited it” as part of the 25-Year Environment Plan<sup>18</sup>. In response to public concern over the public health impacts of pesticides, countries such as France and Denmark committed to reduce pesticide use by 50% and 40% respectively<sup>19,20</sup>. It’s vital the National Action Plan reflects these ambitious approaches to reduce pesticide use and introduce specific targets to phase-out substances of concern that pose a high risk to human health.

Breast Cancer UK has long been concerned that exposure to oestrogenic EDCs in pesticides is increasing our vulnerability to breast cancer. <sup>21</sup>, requires such a high burden of proof that a very small proportion of EDCs contained within pesticides are identified. We call for the criteria for identifying EDCs to be updated from “known” to “may” cause an adverse effect, and for three categories of EDCs (known, suspected, potential) to be introduced specifying that a substance can only be approved if exposure (not risk) is negligible. Pesticides that are known or suspected EDCs should face immediate regulatory consequences or be banned from professional use.

Despite scientific evidence linking exposure to pesticides to increased breast cancer risk and other public health conditions, the UK government has not recognised pesticides and exposure to harmful chemicals as part of the public health agenda. This result is a gap in cancer prevention policy one which significantly weakens our battle to prevent disease. Policy making is fragmented between DEFRA, Health & Safety Executive (HSE) and the Environment Agency with no body with overall responsibility for overseeing the public health effects of pesticides. We call for the NAP to give the Department of Health direct

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<sup>12</sup> Cohn, B. A. et al. (2019). *DDT and Breast Cancer: Prospective Study of Induction Time and Susceptibility Windows*. Journal of the National Cancer Institute 111(8):803-810.  
<https://pubmed.ncbi.nlm.nih.gov/30759253/>

<sup>13</sup> IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Pentachlorophenol and some related compounds volume 117. Lyon, France, 2019. <file:///C:/Users/BCUK05/AppData/Local/Temp/117-book.pdf>

<sup>14</sup> Pesticide Action Network (2008) '[Which Pesticides are banned in Europe?](#)

<sup>15</sup> Breast Cancer UK (2017) '[BCUK Background Briefing: Glyphosate](#)'

<sup>16</sup> Breast Cancer UK (2019) '[Letter to Geroqe Eustice Secretary of State for the Environment Food and Rural Affairs on non-renewal of the toxic pesticide chlorpyrifos](#)' September 2019

<sup>17</sup> DEFRA (2020) '[Consultation on the Revised National Action Plan for the Sustainable Use of Pesticides \(Plant Protection Products\)](#)'

<sup>18</sup> UK Government (2018) '[Policy Paper: 25-Year Environment Plan](#)' P.5

<sup>19</sup> French Eco Phyto (2021) '[2025 Plan](http://www.inra.fr/CherFRC)' available at: <http://www.inra.fr/CherFRC> (Accessed 7th February 2021)

<sup>20</sup> Pesticide Action Network Europe (2005), '[Danish Pesticide Use Reduction Programme](#)', PAN Europe, [https://www.pan-europe.info/old/Resources/Reports/Danish\\_Pesticide\\_Use\\_Reduction\\_Programme.pdf](https://www.pan-europe.info/old/Resources/Reports/Danish_Pesticide_Use_Reduction_Programme.pdf)

<sup>21</sup> Health & Safety Executive (2021) '[Regulating Pesticides in the UK after Brexit](#)'

responsibilities for monitoring the impact of pesticides with the new National Institute for Health Protection<sup>22</sup> having the ability propose restrictions on public health grounds.

As the UK takes direct responsibility for regulating pesticides, it's vital a hazard-based approach is maintained. This means that if an active substance is judged to be intrinsically dangerous e.g., cause cancer/persistent pollution then its use should be banned with no need for further assessment. There is growing pressure from industry and trading partners for the UK to adopt a risk-based approach where risks are assessed, quantified and managed so that carcinogenic substances or EDCs can be permitted if the risk is deemed sufficiently low. This would have severe consequences for UK pesticide protections and undermine government commitments to enhance environmental standards post-Brexit.

### **Question 6: What other suggestions do you have for improvements to the regulatory system for pesticides?**

Central to protecting public health from the harmful impacts of pesticides is the precautionary principle<sup>23</sup>. In terms of pesticide regulation, the principle ensures that policymakers avoid allowing pesticides onto the market, despite scientific uncertainty over risks to public health. Given the toxicity of pesticides and the potential harm they can cause, pesticides must be proven to do no harm before they are placed on the market. The NAP must ensure authorisations are based on a strict interpretation of the precautionary principle and do not grant re-approval for products posing a direct risk to human health.

Following the UK's Government's decision not to align with the EU Pesticides regulations, it has lost access to the resources and expertise of the European Chemicals Agency (ECHA), and European Food Safety Authority (EFSA). Under the EU-UK Trade and Co-Operation Agreement chemicals annex<sup>24</sup>, both parties can share non-confidential information, however as no formal data sharing agreement was reached UK regulators have lost access to crucial toxicological information. We call for the UK to negotiate a close partnership with ECHA and EFSA and for the NAP to commit to keep pace with EU standards to ensure pesticides banned in the EU are not allowed onto the UK market.

Post-Brexit, there remain serious concerns over the UK's capacity to manage its own process for authorising active substances, monitor and update Maximum Residue Levels (MRLs). This leaves the UK with a governance and expertise gap negatively impacting the ability of the new UK system to protect citizens from the harmful effects of pesticides. The NAP must contain provisions to deliver the necessary funding and resources to the HSE, to ensure it is able to effectively regulate pesticides and does not jeopardise the UK's ability to protect citizens and the environment from pesticides.

### **Question 21. What else should we do to ensure that pesticides are used safely and responsibly?**

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<sup>22</sup> Breast Cancer UK (2020) '[Joint Letter to Matt Hancock Secretary of State for Health calling for urgent action on harmful chemicals to protect the nation's health](#)' November 2020

<sup>23</sup> Greener UK (2019) '[Briefing on the Precautionary Principle](#)'

<sup>24</sup> The [EU-UK Trade and Cooperation Agreement](#) (2020) P.504-506

As well as being exposed to mixtures of pesticide residues in food, pesticides may enter our bodies through the skin, by drinking contaminated water or by inhalation. Different pesticides have different properties and toxicological effects including endocrine, dermatological, gastrointestinal, neurological, reproductive or respiratory effects. Vulnerable groups<sup>25</sup> include:

- **Farmers and Farmworkers** – due to their proximity to different types of pesticides used in mainstream agriculture. Numerous studies have shown higher incidence of pesticide related ill health among this group including a variety of cancers<sup>26</sup>.
- **Rural Residents** – can be subjected to repeated long-term exposure to a cocktail of pesticides as a result from spray drift from nearby fields. Pesticide mixtures have been associated with the creation of cancer cells and endocrine disruption<sup>27</sup>.
- **Urban Residents** – People that live in towns and cities are regularly exposed to pesticides sprayed by Councils and land managers. Pesticides used include developmental and reproductive toxins, neurotoxins and possible carcinogens<sup>28</sup>.
- **Children and Pregnant woman** – Breastfeeding and expectant mothers are particularly vulnerable to the impacts of certain pesticides which can affect the health of unborn babies and interfere with early breast development<sup>29</sup>.

The current NAP states the Government will “consider the potential for development of a human biomonitoring programme”. This is welcome; however, the commitment is too loose and if we are to gain a thorough understanding of the impacts of pesticides, we need an effective monitoring system that tracks the long-term health impacts of pesticide exposure and captures acute poisoning incidents. We also need a clear understanding of which pesticides will be chosen for biomonitoring and on what basis. Breast Cancer UK supports the introduction of a robust biomonitoring programme to support vulnerable groups and monitor the public health implications of pesticide exposure.

#### Question 24 – What are the priorities for research on the health impacts of pesticides?

It is important that the Department of Health is working on pesticides, not just Defra. A research group should be set up covering both environment and health interests to ensure all aspects are covered, and a list of all health conditions related to pesticides be drawn up so research can be prioritised. It will be important to regularly revisit this as new evidence emerges. As with the environmental risks, cocktail effects and chronic exposure should be investigated – not just acute and direct.

<sup>25</sup> Pesticide Action Network UK (2020) [‘Human Health Recommendations for the UK ‘Revised National Action Plan for the Sustainable use of Pesticides’](#)

<sup>26</sup> European Parliament Committee on the Environment, Public Health and Food Safety (2008) *‘The benefits of strict cut-off criteria on human health in relation to the proposal for a Regulation concerning Plant Protection Products’*

<sup>27</sup> PAN UK and the Soil Association (2019) [‘The Cocktail Effect’](#)

<sup>28</sup> Amenity Pesticide Use Survey 2016 –Fera –April 2018 – <https://www.gov.uk/government/statistics/pesticideusage-survey-amenity-pesticides-in-the-uk-2016>; Hertfordshire University, Pesticide Properties DataBase (PPDB), <https://sitem.herts.ac.uk/aeru/ppdb/en/>

<sup>29</sup> Cohn, B. A. et al. (2019). *DDT and Breast Cancer: Prospective Study of Induction Time and Susceptibility Windows*. Journal of the National Cancer Institute 111(8):803-810. 810. <https://pubmed.ncbi.nlm.nih.gov/30759253/>

**Question 27. Considering the NAP as a whole what other comments and suggestions would you like to make in addition to those covered by previous questions?**

The regulation of pesticides is impacted by a wide array of policy areas including international trade. With the UK seeking to take advantage of post-Brexit opportunities to negotiate new trade agreements with third countries, it is vital the UK upholds pesticide standards as a core component of its independent trade policy. Non-EU Countries such as the USA, Australia and India have significantly weaker pesticide standards and the UK is likely to come under intense pressure to lower standards by removing non-tariff barriers to allow imports of produce containing residues of banned or unapproved pesticides<sup>30</sup>.

Other threats include weakening laws on the use of suspected carcinogens, toxicity testing of adjuvants used in pesticide formulations, undermining the precautionary principle, reducing requirements for authorising active substances and slowing or stopping efforts to regulate EDCs<sup>31</sup>. The Government must deliver an explicit commitment through the NAP not to undermine pesticide standards and ensure mechanisms for scrutiny are in place to ensure MPs have a meaningful role in the approval of future free trade agreements<sup>32</sup>.

***For more information, please contact Kit Bowerin, Public Affairs Officer, Breast Cancer UK at: [kit.bowerin@breastcancer.org.uk](mailto:kit.bowerin@breastcancer.org.uk) or 077715 39934***

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<sup>30</sup> Environmental Audit Committee (2018) '[Oral Evidence: Chemical Regulation after the UK has left the EU](#)', HC 176'

<sup>31</sup> Cohen, J, Mole, N, Tyrell, K (2018) '[Brexit and Pesticides: UK Food and Agriculture at a crossroads](#)',

<sup>32</sup> Breast Cancer UK (2021) '[Letter to Prime Minister Boris Johnson calling on the Government to give Parliament a clear say on future trading arrangements](#)'