



## **UK failing to protect human health and environment from pesticide cocktails**

A new report launched today exposes for the first time how mixtures of pesticides commonly found in UK food, water and soil may be harming the health of both humans and wildlife.

Released today by PAN UK and the Soil Association, *“The Cocktail Effect”* reveals around a quarter of all food, and over a third of fruit and vegetables, consumed in the UK contain pesticide cocktails, with some items containing traces of up to 14 different pesticides.(1) It also details evidence of pesticide cocktails in the environment, with mixtures of as many as ten different chemicals found in UK soil and water with the potential to affect wildlife such as birds and bees.(2)

The report warns that post-Brexit trade deals could lead to a rise in the number of pesticides authorised for use in the UK and an increase in the level and variety of pesticides permitted in food. Both outcomes would increase the exposure of the public and environment to potentially dangerous pesticide cocktails.

Josie Cohen from PAN UK said, “Because of the overuse of pesticides in UK agriculture, we are constantly exposed to a wide array of different chemicals which can interact to become more toxic creating a ‘cocktail effect’. Yet the Government continues to assess the safety of just one pesticide at a time. The truth is we simply have no idea of the human health and environmental impacts of long-term exposure to hundreds of different pesticides.”

The report’s key findings make for sobering reading and confirm that the cocktail effect is a significant enough problem to warrant further attention. In 2017, 87% of pears, 64% of apples and a quarter of bread contained pesticide cocktails. The Government’s testing data for 2018 shows residues of 157 different pesticides, including 63 known, possible or probable carcinogens, and 41 suspected endocrine disruptors.(3)

The environmental evidence is equally concerning. The report reveals that 67% of the soil tested contained pesticide cocktails, as did two-thirds of samples taken from seven river catchments. Another study found that 43% of pollinators had detectable levels of two or more pesticides.

The report also brings together a range of scientific studies showing that pesticides cocktails can be harmful even when each individual chemical appears at levels at or below its “no-observed-effect-concentration”. Health effects revealed include obesity and impaired liver function, the creation of cancer cells and disruption of the endocrine system. Studies looking at insects, fish and birds echo these results. In just one example, a certain insecticide touted as a ‘safe’ replacement for neonicotinoids and a commonly used fungicide were shown to combine to be more toxic to bees than when either chemical appears alone.(4)

Despite being acknowledged as a significant problem almost two decades ago, the UK regulatory system largely fails to even monitor, let alone protect us, from the cocktail effect. While the

Government conducts extremely limited testing for pesticide cocktails in food, it fails to assess or limit the sum total of pesticides to which the environment and wildlife are exposed.

While various efforts are underway by researchers to create a system capable of monitoring the cocktail effect, it is unlikely that any will be sophisticated enough to accurately assess the health and environmental impacts of millions of different pesticide combinations in our food and landscape. The only way to minimise the risk is to hugely decrease our overall pesticide use.

“The UK Government has committed to reducing pesticide use, but the support farmers need to transition away from pesticides simply isn’t in place,” said Rob Percival from the Soil Association. “The Government urgently needs to support farmers to adopt nature-friendly, agroecological approaches that don’t rely on pesticides, including organic, to better protect both human health and the natural world. Brexit poses real threats to food and farming, but it also provides an opportunity to do things differently, if the right policies and legislation are put in place.”

The report makes a number of other recommendations to the UK Government, including calling for the introduction of a pesticide reduction target and a system for monitoring the impacts of pesticide cocktails on human health and the environment. It also urges the Government to ensure that post-Brexit trade deals with non-EU countries don’t disadvantage British farmers and consumers by allowing an influx of poor quality food laden with pesticide cocktails.

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#### **NOTES TO EDITOR:**

- (1) All data on pesticides residues in UK food based on analysis of official Government monitoring data found in 2017 and 2018 annual reports of the UK Government’s Expert Committee on Pesticide Residues in Food (PRiF): [www.gov.uk/government/publications/expert-committee-on-pesticide-residues-in-food-prif-annual-report](http://www.gov.uk/government/publications/expert-committee-on-pesticide-residues-in-food-prif-annual-report)
- (2) The UK Government does not conduct monitoring of pesticide cocktails in the environment so researchers relied on independent academic studies. References for all studies are detailed in the full report which can be found on the websites of PAN UK ([www.pan-uk.org](http://www.pan-uk.org)) and the Soil Association ([www.soilassociation.org](http://www.soilassociation.org)).
- (3) Pesticides listed in 2018 Annual Report of Expert Committee on Pesticide Residues in Food: [assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/824814/expert-committee-pesticide-residues-food-annual-report-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/824814/expert-committee-pesticide-residues-food-annual-report-2018.pdf). Active ingredients then cross-checked with following databases in order to establish associated health issues: University of Hertfordshire, Pesticide Properties DataBase (PPDB), [sitem.herts.ac.uk/aeru/ppdb/en/index.htm](http://sitem.herts.ac.uk/aeru/ppdb/en/index.htm); PAN North America (PANNA), PAN Pesticide Database, [www.pesticideinfo.org/](http://www.pesticideinfo.org/).

- (4) The report includes a literature review of scientific studies which have found pesticide mixtures to have combinatory effects. References for all studies are detailed in the full report which can be found on the websites PAN UK ([www.pan-uk.org](http://www.pan-uk.org)) and the Soil Association ([www.soilassociation.org](http://www.soilassociation.org)).
- (5) **PAN UK** is 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. Part of the global Pesticide Action Network founded in 1982, our work includes campaigning for change in policy and practices at home and overseas, co-ordinating projects in the global south which help smallholder farming communities escape ill-health and poverty caused by pesticides, and contributing our wealth of scientific and technical expertise to the work of other organisations who share our aims. For more information visit PAN UK [www.pan-uk.org](http://www.pan-uk.org)
- (6) **The Soil Association** was founded in 1946 by farmers, scientists, doctors and nutritionists to promote the connection between the health of the soil, food, animals, people and the environment. Today the Soil Association is the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use. Its Chief Executive is Helen Browning, and Chair of Trustees is Gabriel Scally.
- Soil Association Certification** is a wholly owned subsidiary which certifies over 70% of all organic products sold in the UK. Its Chief Executive is Martin Sawyer and its independent board is chaired by Nick Buckland. To find out more visit [www.soilassociation.org](http://www.soilassociation.org)