TOXIC TRADE

How joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) threatens to weaken UK pesticide standards

A report by PAN UK, Sustain and Dr Emily Lydgate **June 2021**

PESTICIDE ACTION NETWORK UK

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the alliance for better food and farming

KEY ACRONYMS

APVMA	Australian Pesticides and Veterinary Medicines Authority
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
DEFRA	Department for Environment, Food and Rural Affairs
ECP	Expert Committee on Pesticides
EDC	Endocrine disrupting chemical
FAO	Food and Agriculture Organization of the United Nations
FBSC	Future British Standards Coalition
FSA	Food Standards Agency
FTA	Free Trade Agreement
HHP	Highly Hazardous Pesticides
HSNO	Hazardous Substances and New Organisms Act
IPM	Integrated Pest Management
MRL	Maximum Residue Level
OP	Organophosphates
PPE	Personal Protective Equipment
RCEP	Regional Comprehensive Economic Partnership
SPS	Sanitary and Phytosanitary
TAC	Trade and Agriculture Commission
TTIP	Transatlantic Trade and Investment Partnership
WHO	World Health Organization of the United Nations
WTO	World Trade Organization

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Cover photo: Combine harvester, South Australia. Credit: Kirsty Hulme/shutterstock.com

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EXECUTIVE SUMMARY*

Heralded by the UK Government as a key part of the post-Brexit trade programme, the UK formally applied to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in February 2021. The CPTPP is one of the world's largest Free Trade Agreements (FTAs). It has eleven member countries spanning Latin America (Chile, Mexico and Peru), Asia (Brunei Darussalam, Japan, Malaysia and Vietnam), Australasia (Australia and New Zealand) and North America (Canada), a list which includes a number of major agricultural exporters.

Like most trade deals, CPTPP encourages regulatory alignment between member countries on a wide range of issues including pesticides. While far from perfect, UK pesticide standards are some of the strongest in the world in terms of protecting human health and the environment. UK safety limits for the levels of pesticides allowed to appear in food tend to be more stringent than in CPTPP member countries and a pesticide is more likely to be banned in the UK due to concerns over the harms it causes. As a result, joining CPTPP could present a risk to the health of UK citizens and the environment as member countries attempting to secure access to the UK market for their food exports pressure the UK Government to weaken domestic pesticide standards.

In contrast to bilateral trade deals which the UK negotiates with partners, the CPTPP's Agreement is already finalised. While the USA is not a CPTPP member country, it was the original architect of the Agreement which remains a typical US trade deal, including the weak approach it takes to pesticide standards.

* References all provided in body of report

CPTPP countries

What are the risks of joining CPTPP?

Human health

Membership of CPTPP has the potential to lead to a significant rise in the amount of pesticides in food imported into the UK and, in turn, increase pesticide-related health risks for UK consumers. For example:

- Grapes from CPTPP member countries New Zealand, Chile and Peru are allowed to contain 1,000 times the amount of the fungicide Iprodione than their UK equivalent. For Australian grapes the safety limit for Iprodione is 6,000 times the UK limit. Iprodione is a carcinogen and suspected endocrine disruptor which means that it is capable of causing cancer and interfering with hormone systems which can lead to birth defects, developmental disorders and reproductive problems.
- Wheat from Canada can contain 100 times the amount of the herbicide diuron than UK wheat, while for Australian wheat it's ten times. Diuron is classified as a carcinogen, suspected endocrine disruptor and a 'developmental or reproductive toxin' which means that it can negatively impact sexual function and fertility.
- Asparagus from both Chile and Peru can contain up to 1,500 times the amount of the insecticide carbaryl. Carbaryl is a carcinogen, suspected endocrine disruptor and 'developmental or reproductive toxin'. Carbaryl is also classified as a cholinesterase inhibitor and has the potential to impair the respiratory system and cause confusion, headaches and weakness.

As well as finding themselves exposed to higher levels of pesticides in their diets, UK citizens could soon have no choice but to consume imported food containing pesticides that are currently banned from appearing in food produced in the UK due to their potential to cause harm. For example, the fungicide triadimefon is banned for use in the UK but allowed to appear in food produced in CPTPP member countries Australia, Chile and Peru. Triadimefon is a suspected endocrine disruptor and a developmental or reproductive toxin which has also been shown to have links to cancer. Meanwhile, unlike the UK, these countries also continue to allow food to contain residues of the insecticide chlorpyrifos which has been shown to negatively affect the cognitive development of foetuses and young children.

Environment

Any weakening of UK pesticide standards via trade deals poses risks not just to human health but also to the environment. The UK currently takes a far more precautionary approach to which pesticides it decides to approve for use than any of the CPTPP member countries. As a result, the UK could come under pressure to weaken its own domestic standards both during and after the CPTPP accession process.

In fact, there are 119 pesticides allowed for use in one or more CPTPP member country that have been banned in the UK for health or environmental reasons (see Annex 1 for full list). Of the total 119, 67 (56%) are what are known as Highly Hazardous Pesticides (a concept which originated from the UN's Food and Agriculture Organization and World Health Organization).

The list of Highly Hazardous Pesticides (HHPs) banned for use in the UK but permitted in the majority of CPTPP member countries includes neonicotinoids which are notorious for driving massive declines in bee populations. It also includes pesticides known to contaminate water such as the herbicide simazine which is harmful to aquatic ecosystems and the insecticide propargite which is toxic to aquatic organisms. If the UK Government is serious about its ambitions to protect and restore nature then it must resist efforts by CPTPP member countries to push the UK to authorise, or reverse bans on, pesticides which harm wildlife and contaminate water and soil.

UK agriculture

These risks also pose an economic threat to the future of UK agriculture. If the UK Government decides to weaken domestic standards in order to facilitate imports from trade partners thereby encouraging British farmers to start using currently banned pesticides, then UK exports will struggle to meet EU standards. Given that the EU remains the UK's primary agricultural export destination, accounting for roughly 60%, this could have a devastating impact on the UK farming sector. Equally concerning, British farmers could be undercut by a flood of imported crops grown in CPTPP member countries more cheaply on a larger scale and to lower standards. It's crucial that the Government protects British farming by defending pesticide standards and doesn't allow accession to the CPTPP to enable large agricultural producers such as Canada and Australia to secure a competitive advantage over UK farmers.

Joining CPTPP poses a serious threat to UK pesticide standards which goes beyond the specific risks outlined above because it would be the first time that the UK has agreed to adopt US-style pesticide governance. If the UK sets a precedent by agreeing to weaker pesticide standards under CPTPP, then conceding to similar demands from other trading partners will be more likely.

What do UK citizens want?

Despite there being a relatively low level of awareness regarding CPTPP, new YouGov polling published alongside this report reveals that the public is worried that joining CPTPP could lead to negative impacts for both human health and the environment:

- More than two-thirds of respondents reported being concerned about negative impacts to the environment (67%) resulting from a lowering of UK pesticide standards as a result of joining CPTPP, with almost the same figure worried about human health impacts (68%).
- Just under half of respondents (49%) expressed concern that joining CPTPP would lead to an increase in the amount of pesticides in food they consume.
- 57% of people wanted the UK Government to resist pressure to allow larger amounts of pesticides in food, while 58% felt it was important to withstand attempts by trading partners to overturn existing UK bans on pesticides which harm health or environment. They wanted the UK Government to stand firm on defending pesticide standards even if that meant that the UK is unable to join CPTPP.
- Just 5% of respondents felt that joining the CPTPP should be the priority, even if it meant weakening UK pesticide standards. [1]

The UK Government exited the EU arguing that it no longer wanted to be a 'rule-taker', and continues to present trade sovereignty as one of the key benefits of Brexit. However, as an EU Member State, the UK had a seat at the table to influence trade agreements. Joining CPTPP with almost no opportunity to change the text of the agreement would undeniably reduce the level of control that the UK has over its trade policy. It could also have significant, negative effects on domestic pesticide standards, thereby undermining the UK Government's ongoing promises (including in its 2019 election manifesto[2]) that it will not sign a trade deal which compromises on existing high environmental protection and food standards.

Note:

This briefing is part of the Toxic Trade series which looks at the potential impact of post-Brexit trade deals on UK pesticide standards. "Toxic Trade: How trade deals threaten to weaken UK pesticide standards" (June 2020) looks specifically at future UK trade deals with the USA, Australia and India. For further information on these FTAs, or on pesticides and trade more broadly (including specific language for UK negotiators to include/avoid which is found in the Annex), visit: ***https://www.pan-uk.org/toxic-trade/***

Key recommendations for the UK Government

- Do not allow any weakening of UK pesticide standards via CPTPP, including resisting all pressure during the accession process. This must include:
  - » Ensuring that no currently banned pesticides are allowed for use in the UK
  - » Ensure that food containing detectable residues of currently banned substances cannot be imported into the UK
  - » Ensure that Maximum Residue Levels are maintained or strengthened.
- Prevent UK farmers from being disadvantaged by cheap food imports produced to weaker pesticide standards in CPTPP member countries.
- Make the UK's intention to maintain pesticide protections clear to all CPTPP member countries and seek agreement to use side letters to opt out of any elements of the CPTPP Agreement that reduce the UK's regulatory autonomy over food and environmental standards, including pesticide regulation.
- Publicly acknowledge that CPTPP follows a US approach to pesticides and, as such, would set a precedent as the UK's first departure from its current, more precautionary approach to regulating pesticides.
- Ensure that accession to CPTPP takes place in the open with the opportunity for full parliamentary and public scrutiny. This should include a meaningful role for MPs, Peers and the devolved administrations in the accession process.
- Introduce additional legislative protections to ensure that any change to food safety standards or environmental protections subsumed in trade agreements can only be introduced via primary legislation.

Health issues related to pesticides – an explainer

The report lists the health issues associated to specific pesticide active substances. It is important to note that if a substance is classified as a 'Carcinogen' (for example) it does not mean that exposure to it will definitely result in the development of cancer. The classification simply means that in tests for toxicity the substance can cause a particular effect.

Here is a guide to the specific health issue classifications listed in the report:

- Carcinogens are capable of causing different types of cancer, including Leukaemia and Non-Hodgkin's Lymphoma.
- Endocrine disruptors (EDCs) interfere with hormone systems and can cause birth defects, developmental disorders and reproductive problems such as infertility.
- Developmental or reproductive toxins have adverse effects on sexual function and fertility in both adults and children, and can reduce the number and functionality of sperm and cause miscarriages.
- Cholinesterase Inhibitors reduce the ability of nerve cells to pass information to each other and can impair the respiratory system and cause confusion, headaches and weakness.
- Acute toxicity describes the adverse effects of an active substance that result either from a single exposure or from multiple exposures in a short period of time (usually under 24 hours). Effects of acute poisoning can range from itchy eyes and breathing difficulties to death.

Photo: Unprotected workers spraying rice field near Tarapoto, Peru.
Credit: Laura-Fee Wloka, Development Planning Unit University College London, Flickr. CC BY 2.0

KEY FINDINGS – THE DATA

The research for this briefing compared existing UK pesticide standards with those of the current member countries of the CPTPP.

We have not included all CPTPP member countries in the research. Rather we looked at those countries from which the UK currently imports produce. The particular food items have been selected because they are either already key UK imports or there is a likelihood that imports could increase under CPTPP.

The research identified risks to current UK pesticide standards in three key areas:

Risk 1: Amount of pesticides in food imported into UK could increase

For approved pesticides, the UK (like almost all other countries) sets what's known as Maximum Residue Levels (MRLs) crop-by-crop. The following section provides a comparison of MRLs set by CPTPP member countries for specific pesticides that pose a high risk to human health, operator health or the environment (and are therefore designated as 'Highly Hazardous Pesticides')[3].

Since the core CPTPP Agreement requires that Parties rely upon international standards (which in the case of pesticides come from the Codex Alimentarius[4], a set of food standards under the UN's Food and Agriculture Organization and World Health Organization), these figures have also been included. MRLs set by Codex tend to be weaker than their UK equivalents. As a result, the UK often comes under pressure from trade partners to revert to Codex MRLs.

It should be noted that there are some cases where UK MRLs are higher than those of other countries or international standards. However, in general, the UK does currently take a more precautionary approach and the MRLs it sets therefore tend to be lower than other non-EU countries.

By comparing MRLs we are able to see where potential threats to consumer protection and human health are likely to emerge in the UK.

Apples

Whilst the UK is a producer of apples, domestic supply is currently insufficient to meet demand resulting in the UK being a net importer. In 2019 the UK imported 336,210 tonnes of apples, the majority of which came from EU Member States. New Zealand is already a major exporter of apples to the UK and helps to make up the deficit in UK apple supply. Chile and Peru are also both large apple producers and therefore potential sources for increased apple imports should trade relations with the EU mean increased import costs. At present the UK does not import apples from Australia. However, Australia is a significant apple producer and joining CPTPP makes it more likely that the UK will start importing Australian apples to fill the seasonal gap.

Table 1: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on apples

Pesticide (active substance)	UK	Australia		Chile		New Zealand		Peru		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Buprofezin (Insect Growth Regulator)	**0.01**	3	X 300	4	X 400	0.1	X 10	3	X 300	3	X 300	• Carcinogen
Ethephon (Plant growth regulator)	**0.8**	1	X 1.25	5	X 6.25	N/A	N/A	5	X 6.25	0.8	Equal	• Cholinesterase inhibitor
Fenitrothion (Insecticide)	**0.01**	1	X 100	N/A	N/A	N/A	N/A	N/A	N/A	0.5	X 50	• Suspected Endocrine Disruptor • Cholinesterase inhibitor
Malathion (Insecticide)	**0.02**	2	X 100	0.5	X 25	0.5	X 25	N/A	N/A	0.5	X 25	• Carcinogen Suspected • Endocrine Disruptor • Cholinesterase inhibitor
Methidathion (Insecticide)	**0.03**	0.2	X 6.6	0.5	X 16.6	N/A	N/A	0.5	X 16.6	0.5	X 16.6	• Carcinogen • Cholinesterase inhibitor
Methomyl (Insecticide)	**0.01**	1	X 100	1	X 100	1	X 100	N/A	N/A	0.3	X 30	• Suspected Endocrine Disruptor • Cholinesterase inhibitor
Propargite (Insecticide)	**0.01**	3	X 300	3	X 300	3	X 300	3	X 300	3	X 300	• Carcinogen • Developmental or Reproductive Toxin • Acutely toxic
Triadimefon (Fungicide)	**0.01**	1	X 100	0.3	X 30	N/A	N/A	0.3	X 30	0.3	X 30	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin

* Codex

See Annex 2 for references to the data in this table

Grapes

At present, the UK imports most of its grapes in season from EU Member States and out of season from South Africa and a small selection of other locations. However, Peru, Chile, Australia and New Zealand are all grape producing countries. Membership of the CPTPP could make these producers more attractive to the UK market if tariffs are reduced or removed.

Table 2: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on grapes

Pesticide (active substance)	UK	Australia		Chile		New Zealand		Peru		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Carbendazim (Fungicide)	**0.3**	0.3	Equal	3	X 10	5	X 16.6	0.3	Equal	3	X 10	Carcinogen Suspected Endocrine Disruptor
Chlorpyrifos (Insecticide)	**0.01**	1	X 100	0.5	X 50	1	X 100	0.5	X 50	0.5	X 50	Suspected Endocrine Disruptor Cholinesterase inhibitor
Iprodione (Fungicide)	**0.01**	60	X 6000	10	X 1000	10	X 1000	10	X 1000	10	X 1000	Carcinogen Suspected Endocrine Disruptor
Malathion (Insecticide)	**0.02**	N/A	N/A	5	X 250	5	X250	N/A	N/A	5	X 250	Carcinogen Suspected Endocrine Disruptor Cholinesterase inhibitor
Methidathion (Insecticide)	**0.02**	N/A	N/A	1	X 50	N/A	N/A	N/A	N/A	1	X 50	Carcinogen Cholinesterase inhibitor
Methomyl (Insecticide)	**0.01**	2	X 200	0.3	X 30	0.5	X 50	0.3	X 30	0.3	X 30	Suspected Endocrine Disruptor Cholinesterase inhibitor Acutely toxic
Permethrin (Insecticide)	**0.05**	0.05	Equal	2	X 40	0.5	X 10	N/A	N/A	2	X 40	Carcinogen Suspected Endocrine Disruptor
Propargite (Insecticide)	**0.01**	N/A	N/A	7	X 700	3	X 300	7	X 700	7	X 700	Carcinogen Developmental or Reproductive Toxin Acutely toxic

* Codex

See Annex 2 for references to the data in this table

Wheat

While the majority of UK wheat imports come from the EU, the UK also gets a substantial amount from Canada. At present there is little trade in wheat from Australia, despite it being a major wheat producer. However, if changes in tariffs with the EU cause the cost of European wheat exports to rise, then Canadian exports are likely to increase significantly and new trade with Australia could develop.[5]

The use of glyphosate in Canadian wheat production, and the resulting issue of residues, has caused problems for Canadian wheat exporters. Due to public concern about the potential harmful effects of glyphosate, Italian imports of Canadian durum wheat (used to make pasta) slumped dramatically in 2018.[6] Whilst Canadian wheat exports to Italy have since recovered it is indicative of just how susceptible exports can be to issues associated with pesticide use in the exporting country.

Table 3: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on wheat

Pesticide (active substance)	UK	Australia		Canada		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Carbaryl (Insecticide)	**0.5**	5	x 10	2	x 4	2	x 4	Carcinogen Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase inhibitor
Diclofop-methyl (Herbicide)	**0.05**	0.1	x 2	0.1	x 2	N/A	N/A	Carcinogen Developmental or Reproductive Toxin
Diuron (Herbicide)	**0.01**	0.1	X 10	1	X 100	N/A	N/A	Carcinogen Suspected Endocrine Disruptor Developmental or Reproductive Toxin
Hydrogen cyanide (Plant growth regulator)	**15**	N/A	N/A	25	X 1.6	N/A	N/A	Carcinogen
Phosphine/Phosphane (Fumigant)	**0.05**	0.1	X 2	0.1	X 2	N/A	N/A	Acutely toxic

* Codex

See Annex 2 for references to the data in this table

Asparagus

The UK is the fourth largest importer of asparagus in the world.[7] Peru has plans to hugely increase its fruit and vegetable production capacity in the coming years with an eye on lucrative export markets. The UK market for asparagus is seen as a key target to help offset the drop in trade Peru has experienced with the USA in which Mexico is starting to dominate the asparagus market.[8] Chile is also a producer of asparagus but with a smaller market share then Peru. However, joining CPTPP could mean that both Peruvian and Chilean asparagus becomes more attractive to UK importers.

Table 4: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on asparagus

Pesticide (active substance)	UK	Chile		Peru		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Carbaryl (Insecticide)	**0.01**	15	X 1500	15	X 1500	15	X 1500	Carcinogen Suspected Endocrine Disruptor Developmental or Reproductive Toxin Reproductive Cholinesterase inhibitor
Cypermethrin (Insecticide)	**0.1**	0.1	Equal	0.4	X 4	0.4	X 4	Carcinogen Suspected Endocrine Disruptor
Methomyl (Insecticide)	**0.01**	2	X 200	2	X 200	2	X 200	Suspected Endocrine Disruptor Cholinesterase inhibitor Acutely toxic
Permethrin (Insecticide)	**0.05**	1	X20	1	X 20	1	X 20	Carcinogen Suspected Endocrine Disruptor
Quizalofop (Herbicide)	**0.01**	N/A	N/A	0.4	X 40	N/A	N/A	Carcinogen
Triademenol (Fungicide)	**0.01**	0.1	X 10	0.1	X 10	N/A	N/A	Carcinogen Suspected Endocrine Disruptor

* Codex

See Annex 2 for references to the data in this table

Avocados

Peru and Chile are two of the UK's three largest sources for avocado imports.[9] The growth in popularity of avocadoes with the British public, coupled with their rising purchase price, makes it likely that the UK's accession to CPTPP will lead to increased avocado imports from both countries.[10]

Table 5: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on avocados

Pesticide (active substance)	UK	Chile		Peru		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Dodine (Fungicide)	**0.01**	0.2	X 20	N/A	N/A	N/A	N/A	Acutely toxic
Endosulfan (Insecticide)	**0.05**	0.5	X 10	N/A	N/A	0.5	X 10	Acutely toxic Suspected Endocrine Disruptor
Fenpropathrin (Insecticide)	**0.01**	N/A	N/A	1	X 100	N/A	N/A	Acutely toxic
Malathion (Insecticide)	**0.02**	8	X 400	N/A	N/A	N/A	N/A	Carcinogen Suspected Endocrine Disruptor Cholinesterase inhibitor
Methomyl (Insecticide)	**0.01**	2	X 200	2	X 200	N/A	N/A	Suspected Endocrine Disruptor Cholinesterase inhibitor Acutely toxic
Pirimicarb (Insecticide)	**0.01**	1	X 100	N/A	N/A	N/A	N/A	Carcinogen, Cholinesterase inhibitor
Pyridaben (Insecticide)	**0.01**	N/A	N/A	0.5	X 50	N/A	N/A	Carcinogen, Cholinesterase inhibitor

* Codex

See Annex 2 for references to the data in this table

Blueberries

Both Chile and Peru currently export blueberries to the UK. At present, Chile is the larger exporter but Peru has stated that the UK is one of its key targets for increasing exports. UK accession to the CPTPP could help facilitate increased blueberry exports to the UK from both countries.[11]

Table 6: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on blueberries

Pesticide (active substance)	UK	Chile		Peru		International standard *		Health issues (see guide on page 8)
	mg/kg	mg/kg	vs. UK	mg/kg	vs. UK	mg/kg	vs. UK	
Azinphos-methyl (Insecticide)	**0.05**	5	X 100	N/A	N/A	N/A	N/A	Acutely toxic Suspected Endocrine Disruptor Cholinesterase inhibitor
Carbaryl (Insecticide)	**0.01**	3	X 300	N/A	N/A	N/A	N/A	Carcinogen Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase inhibitor
Chlorothalonil (Fungicide)	**0.01**	1	X 100	1	X 100	N/A	N/A	Acutely toxic Carcinogen
Ethofenprox (Insecticide)	**0.01**	1	X 100	N/A	N/A	N/A	N/A	Carcinogen Suspected Endocrine Disruptor
Iprodione (Fungicide)	**0.01**	15	X 1500	N/A	N/A	N/A	N/A	Carcinogen Suspected Endocrine Disruptor
Malathion (Insecticide)	**0.02**	10	X 500	N/A	N/A	10	X 500	Carcinogen Suspected Endocrine Disruptor Cholinesterase inhibitor
Methomyl (Insecticide)	**0.01**	6	X 600	N/A	N/A	N/A	N/A	Suspected Endocrine Disruptor Cholinesterase inhibitor Acutely toxic

* Codex

See Annex 2 for references to the data in this table

CPTPP COUNTRY CASE STUDY

Rice production in Vietnam

While Vietnam is the world's fifth largest producer of rice and the UK the ninth largest importer, rice exports between the two countries remain relatively low. In 2019, the most recent year for which data is available, the UK imported 671,000 tonnes of rice from Vietnam, which constitutes just 0.2% of total UK rice imports.[1]

Vietnam is therefore keen to increase rice exports to the UK. In fact, the UK is not Vietnam's only target. The Vietnamese rice sector has been hit both by competition from other rice growing areas and a drop in exports to China. It has been reported that it is also actively seeking to increase rice exports to its fellow ten member countries of the CPTPP.[2]

Just three days before EU exit, on 29th December 2020, the UK Vietnam free trade agreement was signed, a rollover from the EU-Vietnam trade deal. In addition to getting this deal in place, Vietnam has also pledged to support the UK's joining of CPTPP, seeing it as a win-win in terms of establishing closer trading links to agree both bilateral and multilateral trade agreements[3].

The human health and environmental effects of pesticides used for growing rice in Vietnam are considerable, particularly in the Mekong region where the highest proportion of rice is produced and the majority of exports originate.[4] It has been estimated that the amount of pesticides used per hectare in Vietnamese agriculture has tripled in the last 25-years.[5] In 2017, a World Bank report stated that 50-60% of Vietnamese rice producers used more than the recommended amount of pesticides with a further 20% using illegal, banned or fake pesticide products.[6]

Inevitably this increased use of pesticides has led to environmental problems. There are reports that some rice producing areas have become effective dead zones with pesticides having destroyed aquatic ecosystems and entirely eliminated frog, snail, fish and wild mammal populations. There has also been a significant impact on human health as drinking water supplies have been contaminated with pesticides which has led to high levels of pesticide poisoning in rural communities.[7,8]

Much of this overuse of pesticides has been aimed at facilitating a growth in exports. However, it has in many cases had the opposite effect. Rice exports grown in Vietnam have, in some cases, contained such high levels of pesticide residues that some countries have refused particular shipments or even threatened to ban Vietnamese rice imports altogether.[9] [10]A 2019 report on pesticide residues in food published by the European Union highlighted Vietnam as one of the ten countries whose produce had the highest numbers of MRL exceedances.[11]

Driven by this loss in trade and the demands of export markets, Vietnam has now started to make efforts to tackle its overuse of pesticides.

A number of sustainability labels have been implemented in Vietnam along with VietGAP (similar to the UK Red Tractor scheme).[12] In particular, since 2018, the Better Rice Initiative Asia has been training Vietnamese farmers in methods of production that meet the Sustainable Rice Platform Standard, which promotes practices that will reduce the negative human health and environmental impacts of rice growing.[13]

There have also been concerted efforts to try and wean the Vietnamese rice sector off the use of pesticides by developing Integrated Pest Management (IPM) training initiatives in key rice growing areas. Establishment of farmer field schools and test plots have shown some promising results in terms of reducing the use of insecticides and fungicides in particular.[14]

In terms of banning problematic pesticides, Vietnam is more proactive than other CPTPP member countries. According to the most recent figures, Vietnam has banned 41 pesticides that are currently approved elsewhere[15], which is low in comparison to the 175 banned by the UK but ahead of other CPTPP members. While data is unavailable on whether these various initiatives in Vietnam have led to a significant reduction in pesticide use, both encouraging the uptake of IPM and banning particularly harmful pesticides are proven methods for reducing pesticide-related harms.

As the UK pushes to join CPTPP, there are some key questions to be asked regarding the impact of the Agreement on both the quality of rice imports for the UK consumer and the health and environmental impacts of rice production in Vietnam. Could membership of the CPTPP result in the UK having to accept rice exports that cannot be sold to the EU market (for example) because of pesticide

contamination? Or will the UK stand firm and ensure that MRLs remain as stringent as their EU equivalents?

What we can infer from the case of Vietnam is that strong MRLs and restricting the import of produce that contains residues of banned pesticides is not only good for the end consumer in the importing country but also has the potential to drive positive action in the exporting country. By adopting stringent MRLs, the EU market has encouraged the Vietnamese Government and other domestic stakeholders to implement pesticide reduction strategies which, while aimed at facilitating trade, are likely to have the knock-on effect of benefitting the health of both people and the environment within Vietnam itself. This sits in stark contrast to claims made by Trade Secretary Liz Truss that high UK food standards negatively impact developing countries.[16]

It is therefore vital that the UK strengthens, or at the very least maintains, its MRL requirements and resists all pressure to weaken pesticide standards when acceding to the CPTPP.

Photo: Rice paddy, Hoi An, Vietnam. Credit: Capture ItOnce, Flickr. CC BY 2.0

Risk 2: Type of pesticides in food imported into UK could become more toxic

Under the current UK system, imported produce should not contain detectable residue levels of any active substance that is not approved for use in the UK. As a result, when the UK bans an active substance due to its health or environmental impacts it can have a hugely positive impact in producer countries (for example, see Vietnam case study on page 16). Farmers and traders across the world wishing to continue exporting to the UK must adapt to ensure that no residues of that specific active substance appear in their produce.

The following section provides examples of pesticides that are currently prohibited from appearing in UK food imports but are permitted by CPTPP member countries. If the UK agrees to weaken its pesticide standards to join CPTPP, then UK consumers could soon find these pesticides in their food.

Table 7: Examples of Highly Hazardous Pesticides currently not permitted to appear as residues in food imported into the UK

Pesticide (active substance)	Crop	UK status	Australia mg/kg	Canada mg/kg	Chile mg/kg	New Zealand mg/kg	Peru mg/kg	International Standard * mg/kg	Health issues (see guide on page 8)
Carbaryl (Insecticide)	Wheat	Banned	5	2	N/A	N/A	N/A	2	• Carcinogen • Developmental or Reproductive Toxin • Suspected Endocrine Disruptor • Cholinesterase inhibitor
Chlorpyrifos (Insecticide)	Grapes	Banned	1	N/A	0.5	1	0.5	0.5	• Developmental or Reproductive Toxin • Suspected Endocrine Disruptor • Cholinesterase inhibitor
Endosulfan (Insecticide)	Avocadoes	Banned	N/A	N/A	0.5	N/A	N/A	0.5	• Acutely toxic • Suspected Endocrine Disruptor
Fenitrothion (Insecticide)	Apples	Banned	1	N/A	N/A	N/A	N/A	0.5	• Suspected Endocrine Disruptor • Cholinesterase inhibitor
Methomyl (Insecticide)	Avocadoes	Banned	N/A	N/A	2	N/A	2	N/A	• Acutely toxic • Suspected Endocrine Disruptor • Cholinesterase inhibitor
Permethrin (Insecticide)	Asparagus	Banned	N/A	N/A	N/A	N/A	1	1	• Carcinogen • Suspected Endocrine Disruptor
Propargite (Insecticide)	Grapes	Banned	N/A	N/A	7	3	7	7	• Developmental or • Reproductive Toxin • Carcinogen • Acutely toxic
Triadimefon (Fungicide)	Apples	Banned	1	N/A	0.3	N/A	0.3	0.3	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin

*** Codex**

See Annex 2 for references to the data in this table

Risk 3: More toxic pesticides could be approved for use in UK

The UK currently takes a far more precautionary approach to which active substances it decides to approve for use than any of the CPTPP member countries. However, this approach can come under attack from trade partners who potentially have much to gain from driving down UK pesticide standards so that their companies can export food currently excluded from the UK market.

The following section highlights some of the potential dangers of moving away from the UK's current approach by comparing the pesticide active substances that are currently permitted for use in the UK with those of CPTPP member countries.

Pesticide approvals – headline figure

There are 119 pesticides that are banned in the UK but still permitted for use in one or more CPTPP member country. All 119 have been banned in the UK due to concerns over their impact on human health or the environment. See Annex 1 for a full list of the pesticides and the reason they are not permitted for use in the UK.

It should be noted that these figures are likely to be an under-estimation since they do not include Singapore or Brunei. These countries have been omitted because they do not export sufficiently significant amounts of agricultural produce to the UK, and are unlikely to do so in the future.

Highly Hazardous Pesticides

Of the 119 pesticides authorised for use in one or more CPTPP member country but banned in the UK, 67 (56%) of them are classified as Highly Hazardous Pesticides (HHPs) due to the high threat of harm they pose to human health or the environment. See Annexes 1 and 2 for more detail.

The concept of HHPs originated from the UN's Food and Agriculture Organization (FAO) and World Health Organization (WHO) which were motivated by continuing problems of poisoning incidents and pesticide-related ill-health and environmental harm.[12] PAN International's List of Highly Hazardous Pesticides includes pesticides classified by internationally recognised authorities under four types of hazard:

- Acutely toxic to humans via swallowing, skin contact or inhalation.
- Long-term human health hazards related to cancer, birth defects and reproductive harm, disruption of hormone systems or damage to genetic material.
- Environmental hazards (persistent in soil or water; ability to accumulate in the food chain; highly toxic to bees; toxic to aquatic organisms).
- Recognised as causing serious or irreversible harm under actual conditions of use in a particular country.[13]

Table 8: Examples of Highly Hazardous Pesticides currently not permitted to appear as residues in food imported into the UK

	UK	Australia	Canada	Chile	New Zealand	Peru
Number of approved Highly Hazardous Pesticides (HHPs)	73	144	106	27	99	131
Percentage of total approved active substances classified as HHPs	16%	30%	15%	22%	20%	46%

See Annex 2 for references to the data in this table

Active substances of particular concern

As a result of the UK's precautionary approach to approvals, many active substances that remain in use in CPTPP countries are not authorised in the UK due to the threat they pose to environment and human health. For the purposes of this report, they can be broadly grouped into three categories – toxic to bees and pollinators, water contaminants and presenting a threat to human health.

i) Toxic to bees and pollinators

Table 9: Approval status of active substances that are highly toxic to bees and other pollinators

Pesticide (active substance)	UK	Australia	Canada	Chile	New Zealand	Peru
Clothianidin (neonicotinoid)	×	✓	✓	✓	✓	✓
Dinotefuron (neonicotinoid)	×	✓	✓	✓	×	✓
Fipronil	×	✓	×	✓	✓	✓
Imidacloprid (neonicotinoid)	×	✓	✓	✓	✓	✓
Nitenpyram (neonicotinoid)	×	✓	×	×	✓	×
Thiacloprid (neonicotinoid)	×	✓	✓	✓	✓	✓
Thiamethoxam (neonicotinoid)	×	✓	✓	✓	✓	✓

KEY: × = not approved; ✓= approved *See Annex 2 for references to the data in this table*

ii) Water contaminants

Table 10: Approval status of active substances that contaminate water and/or impact on aquatic life

Pesticide (active substance)	UK	Australia	Canada	Chile	New Zealand	Peru	Impacts (for health issues listed below see guide on page 8)	
							Environmental	Human health
Cadusafos (Insecticide)	×	✓	×	✓	×	✓	Toxic to aquatic organisms Persistent in water Bee toxic	Acutely toxic Cholinesterase inhibitor
Diuron (Herbicide)	×	✓	✓	×	✓	✓	Persistent in water Toxic to aquatic organisms	
Fenbutatin oxide (Insecticide)	×	✓	✓	×	×	✓	Persistent in water Toxic to aquatic organisms Acutely toxic	Suspected Endocrine Disruptor Developmental or Reproductive Toxin
Propargite (Insecticide)	×	✓	×	✓	✓	✓	Toxic to aquatic organisms Persistent in water	Acutely toxic Carcinogen Developmental or Reproductive Toxin
Simazine (Herbicide)	×	✓	×	×	✓	×	Persistent in water Harmful to aquatic ecosystems	Carcinogen Suspected Endocrine Disruptor

KEY: × = not approved; ✓= approved *See Annex 2 for references to the data in this table*

iii) Hazardous to human health

Table 11: Approval status of active substances that have high potential to harm human health

Pesticide (active substance)	UK	Australia	Canada	Chile	New Zealand	Peru	Health issues (see guide on page 8)
Acephate (Insecticide)	×	✓	✓	✓	✓	✓	Carcinogen Cholinesterase Inhibitor Suspected Endocrine Disruptor
Chlorpyrifos (Insecticide)	×	✓	✓	✓	✓	✓	Cholinesterase Inhibitor Developmental or Reproductive Toxin Suspected Endocrine Disruptor
Dimethoate (Insecticide)	×	✓	✓	✓	✓	✓	Carcinogen Cholinesterase Inhibitor Developmental or Reproductive Toxin Suspected Endocrine Disruptor
Methiocarb (Insecticide)	×	✓	×	×	✓	×	Cholinesterase Inhibitor
Methyl Bromide (Fumigant, insecticide)	×	✓	✓	×	✓	×	Developmental or Reproductive Toxin Suspected Endocrine Disruptor
Paraquat	×	✓	✓	×	✓	✓	Acutely Toxic Suspected Endocrine Disruptor
Permethrin (Insecticide)	×	✓	✓	✓	✓	✓	Carcinogen Suspected Endocrine Disruptor
Profenofos (Insecticide)	×	✓	×	✓	×	✓	Cholinesterase Inhibitor

KEY: × = not approved; ✓= approved *See Annex 2 for references to the data in this table*

CPTPP COUNTRY CASE STUDY

Australia's weaker approach to regulating pesticides

Pesticides in Australia are regulated and approved by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Any agricultural product, including pesticides, that is imported, sold or used in Australia must have APVMA approval. Approximately 8000 pesticide products are registered for use in Australia, 75% of which are for use in agriculture.[1] This compares to 2,900 authorised products in the UK.

Like all other CPTPP member countries, the Australian system uses a 'risk-based approach' to approving active substances which makes the assumption that even when a particular substance has intrinsically hazardous properties (for example is found to be carcinogenic) the associated risks can be effectively managed by stipulating how and where it can be used. The Australian system also has no set time period for reviewing the approval of either active substances or pesticide products, meaning that they can remain in use indefinitely once authorised. In contrast, the current maximum time period for review in the UK is 15 years.

The outcomes of these different approaches is evident. For example, organophosphate pesticides, some of the most harmful to human health, are still widely used in Australia.[2] There are currently 33 organophosphate pesticide active substances approved for use in Australia compared to just four in the UK.[3]

Evidence shows that pesticide use in Australia continues to drive harms to both human health and the environment.[4] In 2019, testing of the waterways flowing into the Great Barrier Reef revealed a cocktail of 22 different pesticides, posing a risk to insect larvae, crustaceans and plant life such as seagrass and corals. .[5] In terms of pesticide-related human health impacts in Australia there is very little data available. However, there is evidence to suggest that the continued use of organophosphates might be linked to elevated levels of Parkinson's disease in some areas.[6]

The overuse of pesticides has also driven major problems with pest and weed resistance which continue to be a huge challenge for Australian farmers.[7]

Photo: Farm sprayer, South Quairading, Western Australia. Credit: Jean and Fred, Flickr. CC BY 2.0

HOW DOES THE CORE CPTPP AGREEMENT THREATEN TO WEAKEN UK PESTICIDE STANDARDS?

CPTPP introduces requirements to cooperate and reduces its members' scope to regulate in their own individual ways. This aims to make trade easier among countries that join the agreement. But it can also challenge UK efforts to uphold pesticide regulation at current levels of protection for health and environment. Requirements under the CPTPP include:

i) Increased pressure to reduce trade barriers

CPTPP introduces new avenues for member countries to request the removal of UK pesticide regulations which obstruct exports. There are regular meetings where Parties can raise concerns about each other's regulations. These provide a forum for CPTPP countries to challenge UK safety limits for the amount of a specific pesticide permitted to appear in food. CPTPP countries could also object to the current UK ban on residues of pesticides not approved for use in the UK.

Parties are also encouraged to acknowledge that their regulations are equivalent, which means that, even if the regulations themselves differ, they achieve the same level of protection. The problem with such provisions is that, almost by definition, each country considers its own regulation to be safe – even if higher levels of pesticides are permitted – and can pressure the UK Government to conclude the same. On top of this, each country is required, upon request, to explain the objective and rationale of their regulations (Article 7.8(2). The UK will also be obliged to allow other Parties or 'interested persons' a chance to comment on their risk assessment processes (Article 7.9(4). Whilst this sound's innocuous, in reality it exposes UK regulators to direct pressure from foreign lobbyists.

ii) Lessened scope to regulate

In addition, the CPTPP Agreement pushes for all member countries to adopt international standards which originate from the UN FAO's Codex Alimentarius and tend to be weaker than their UK equivalents. If a CPTPP member country wants to go beyond international standards to introduce measures which are more protective to human health or the environment then, according to the CPTPP Agreement, it must be 'based on documented and objective scientific evidence that is rationally related to the measure.' This undermines the precautionary principle which theoretically underpins all current UK decision-making on pesticides. The precautionary principle states that action should be taken to prevent harms to health or environment as long as there are reasonable grounds for concern. It allows regulators to adopt precautionary measures when scientific evidence regarding an environmental or human health hazard is uncertain and the stakes are high.

The rejection of precaution is a key element of the US approach to risk assessment and forms the basis for the US argument that the UK should raise its MRLs for pesticides in food.[15] By undermining the precautionary principle, the CPTPP Agreement therefore reduces the UK's ability to both set stringent MRLs and ban a pesticide which is suspected to be causing harm.

These obligations on international standards and scientific risk assessment are exempted from the binding State-to-State dispute settlement mechanism which applies to CPTPP as a whole. Nonetheless, even without being able to initiate a dispute, this provision gives other CPTPP Parties a clear basis upon which to argue that the UK has agreed to standards that are weaker than its current precautionary approach.

Given that the CPTPP Agreement is already finalised the only way for the UK to avoid signing up to any of its measures – including its approach to pesticides – would be via side letters which have the potential to exempt a particular member from specific rules included in the Agreement. For more detail on side letters see page 25.

Joining CPTPP poses a serious threat to UK pesticide standards which goes far beyond the specific provisions in the Agreement. Having been conceived and designed by the US Government, it is a US trade deal in all but name, very similar to the Trump deal which was vehemently opposed by the UK public in 2020 largely because of its approach to food standards.

Since the UK exited the EU, all of the trade deals it has signed have been 'rollover' agreements which effectively mirror existing agreements the partner countries have with the EU and, as a result, continue to follow the EU approach to regulating pesticides. As such, the CPTPP might be the first departure from the UK's current precautionary approach which offers greater protection for human health and the environment. Generally speaking, existing UK 'rolled over' FTAs recommend the use of international standards and scientific risk assessment, but do not make these binding requirements the way that CPTPP does.

Not only would acceding to CPTPP represent the first time the UK has pivoted towards US-style pesticide governance, it could prove to be an irreversible decision. If the UK sets a precedent by agreeing to weaker pesticide standards under CPTPP, then conceding to similar demands from other trading partners will be more likely. Even if current CPTPP members have no interest in pressuring the UK to lower pesticides standards, which is unlikely given that they include a number of major agricultural exporter countries, this could have a negative impact on the UK's ability to safeguard its pesticide standards in future FTAs.

CPTPP COUNTRY CASE STUDY

Pesticide-related harms in Chile

Since 2009, pesticide use in Chile has increased by an estimated 160%.[1] Despite approving relatively low numbers of HHPs, Chile continues to experience significant pesticide-related harms to both human health and the environment.

For example, a 1998 a study undertaken in the Central Highland Region, which has the highest level of pesticide use in Chile, revealed that there was a 40% greater chance of residents having children born with birth defects than in other areas of the country.[2]

A more recent study, published in 2020, concluded that long-term occupational or environmental exposure to pesticides caused impairment in the neurobehavioral functioning of both rural residents and agricultural workers in Northern Chile. The study looked at exposure to organophosphate and carbamate pesticides and found that the impact on neurobehavioral functioning worsened during the spraying season.[3]

Little has been done to assess the environmental impacts of pesticide use in Chile but several studies have started looking at contamination of Chile's major river basins. The first study looking at the Cachapoal River basin in Central Chile confirmed the presence of numerous pesticides and that their presence is having a negative impact on the aquatic environment.[4],[5]

The endangered Andean Condor has also suffered at the hands of agricultural pesticides. In 2013 it was reported that 20 condors had been poisoned with agricultural pesticides, two of them fatally. It was thought that the birds had either eaten contaminated meat or drunk contaminated water.[6] Sadly this is not an isolated incident and pesticides continue to injure and kill the national bird of Chile.

COULD THE UK OPT OUT OF CPTPP PROVISIONS WHICH UNDERMINE UK PESTICIDE STANDARDS?

The CPTPP provisions relevant to food standards and safety, including pesticides, risk undermining the UK Government's agreement to uphold UK food standards in trade agreements. The Trade and Agriculture Commission (TAC) and Future British Standards Coalition – bodies created to review UK trade policy (see later section on upholding UK domestic pesticide standards) – have also advocated maintaining British standards in FTAs, and there is strong public support for this position. But CPTPP offers a particular challenge as the text has already been negotiated.

Whilst there is no scope to modify the text of the CPTPP Agreement, there is scope for negotiating 'side letters' with individual countries bilaterally. CPTPP Members have used these to agree to maintain certain protections that they would not otherwise have under the Agreement. These have spanned a range of objectives, and some have been signed by all CPTPP Parties, making them effectively agreement-wide exceptions. For example, Canada made clear that it is allowed to restrict access to foreign audio-visual content. Vietnam opted out of binding dispute settlement for certain provisions for five years.[16] Other side letters are agreed bilaterally between a subset of CPTPP Members for whom the issue at stake is most important. For example, Japan set country-specific trade quotas for rice,[17] and Mexico secured its exclusive ability to manufacture Tequila.[18]

The wide range of issues and interests represented suggests that there is scope for the UK to pursue side letters either to safeguard its domestic pesticides standards specifically or food standards more broadly. Because side letters are bilateral, achieving a 'modification' to the CPTPP agreement would require a successful negotiation with each CPTPP country individually. Alternatively, the UK could limit its side letter negotiation to those countries who currently pose the greatest threat of undermining UK standards. This should include all member countries with significant agricultural exports to the UK, namely Australia, Canada, New Zealand, Chile and Peru. The side letters would also need to be reviewed regularly to ensure that it doesn't miss other CPTPP countries which begin exporting food to the UK.

In either case, one way to do this would be for the UK to reference in a side letter, the CPTPP provision which most clearly goes against the precautionary approach, SPS Article 7.9(2):

> *Each Party shall ensure that its sanitary and phytosanitary measures either conform to the relevant international standards, guidelines or recommendations or, if its sanitary and phytosanitary measures do not conform to international standards, guidelines or recommendations, that they are based on documented and objective scientific evidence that is rationally related to the measures….*[19]

In the letter, the UK can affirm that, in conformity with UK law, it will incorporate the precautionary principle into its regulatory processes, including the assessment of authorisation for new active substances for pesticides and Maximum Residue Levels. It can also affirm its ability to maintain MRLs that go above those set out in Codex Alimentarius.

In clearly affirming the UK's right to regulate pesticides on a precautionary basis, the UK Government will also bolster its ability to resist pressure to lower its standards through the various cooperative mechanisms that we outlined above. It's therefore crucial that the UK Government conducts an urgent and thorough scoping exercise exploring the options for securing a CPTPP side letter which protects UK pesticide standards from being undermined during the accession process and beyond.

CPTPP COUNTRY CASE STUDY

New Zealand's weaker approach to regulating pesticides

Pesticides in New Zealand are regulated under the Hazardous Substances and New Organisms Act (HSNO) 1996.[1] Although the HSNO does make reference to the precautionary principle, New Zealand follows a risk-based system for pesticide approvals which is underpinned by a belief that almost every risk can be mitigated. This sits in contrast to the UK's hazard-based approach under which pesticides found to have intrinsically hazardous properties should be removed from use. In addition, New Zealand includes an economic cost-benefit analysis in the decision-making process around pesticide approvals. The UK's equivalent process focusses solely on impacts to human health and environment.

New Zealand also bases decisions regarding which pesticides to approve upon various risk assessment systems that have been taken from the US and Australian regimes, both of which offer significantly weaker protections than the UK system. It also accepts, to some degree, the notion of mutual recognition of approvals with Australia. This means that if a pesticide has been approved by the Australian authorities then only a minimal risk assessment will be conducted before it can be used in New Zealand.[2]

There have been issues with the use of pesticides in New Zealand and their impact on both people and the environment. A 2019 paper published in the Journal of Environmental Pollution[3] surveyed pesticide pollution in 36 agricultural streams and concluded that pesticide contamination was a frequent occurrence with three or more pesticides detected at 69% of the sites sampled. The most frequent contaminant was chlorpyrifos, an insecticide banned in the UK because it has been shown to negatively affect the cognitive development of foetuses and young children.

Recently there have also been concerns raised about the contamination of New Zealand honey with glyphosate.[4] According to a report published in 2020,[5] 20% of New Zealand's Manuka honey is contaminated by glyphosate residues. Aside from any health concerns this might present, it has resulted in trade complications. Japan has raised concerns about glyphosate contamination of honey and, in 2021, refused entry to four shipments from New Zealand as a result.[6] This is not the first time that pesticide use has threatened to harm lucrative trade between New Zealand and others. In both 2005 and 2008, the misuse of the insecticide endosulfan (which at the time was authorised in both countries) resulted in South Korea banning imports of beef from New Zealand.[7]

Photo: Honey bees in Mangawhai, New Zealand. Credit:Jason Milich, Flickr. CC BY-ND 2.0

USA VS. CHINA –

THE GEOPOLITICS BEHIND THE CPTPP AND WHERE THE UK FITS IN

A US-style deal

The CPTPP evolved out of the Trans-Pacific Partnership (TPP), a multilateral trade deal conceived and designed by the US. TPP was a key part of President Obama's strategic pivot towards Asia which sought to undermine China's rising economic and political influence in the region and re-establish the US as a dominant force. However, in January 2017, before the TPP could be ratified, the newly-elected Trump administration withdrew from the agreement. In response to the US' sudden departure, the remaining countries negotiated the CPTPP which entered into force at the end of 2018.

Much of the original TPP text was simply copy and pasted across into the CPTPP Agreement, including the chapter on Sanitary and Phytosanitary Standards (SPS chapter) which covers pesticides.[20] Thus, even though the Trump Administration pulled out of the agreement, CPTPP obligations on food regulation, which apply to pesticides, reflect US objectives: what has been described as a 'blueprint for future SPS governance' which the US wishes to export globally.[21] This is feasible as the CPTPP, a so-called mega-regional, is one of the largest trade agreements outside the WTO.[22] Its economic size and geographic scope mean that it plays a role in shaping global regulation.[23]

Any change under Biden?

Despite this, the Biden administration has indicated that it may be reluctant to join CPTPP, in particular raising concerns over its approach to labour rights.[24] In February 2021, when questioned on whether the US would join CPTPP, Katharine Tai – Biden's Trade Representative – stated that *"a lot has changed in the world in the past five or six years. And a lot has changed in terms of our own awareness about some of the pitfalls of the trade policies that we've pursued."*[25] Whether Biden will change the US' previously aggressive approach to weakening trade partners' pesticide standards remains to be seen. The Office of the US Trade Representative has characterised the EU/UK's precautionary approach to pesticide regulation as a 'trade barrier' as recently as 2020.[26] It is in fact the US Congress which formulates US trade negotiating objectives, including in the SPS area that impacts upon pesticides, and these have remained stable through recent Democratic and Republican administrations.[27] While Tai has promised a revamp of the US' approach to environmental issues in trade agreements,[28]nothing in her statement clearly signals a break from the past in terms of their approach to pesticides.

While the US' stance on trade appears to undergone some changes since TPP was conceived, China's position has also shifted. Shut out of TPP originally by the US, in November 2020, China signed the Regional Comprehensive Economic Partnership (RCEP) alongside fourteen other countries including seven members of CPTPP. Together, the RCEP countries account for roughly a third of the world's population and 29% of global GDP, leading many to label it as the biggest trade deal in history. China is also now signalling that it is keen to join CPTPP as part of its efforts to drive further trade integration.

Heralding the UK's new global agenda

The UK is the first country without a Pacific coast to make a serious attempt at joining CPTPP. Keen to undermine the commonly held view that Brexit signified a broader policy shift towards anti-trade protectionism, the UK Government has touted CPTPP *"as a key part of our trade negotiations programme"*[29]. The Government's stated reasons for joining include securing increased trade and investment and opening up new export opportunities, diversifying the UK's trading links and supply chains in order to strengthen economic security, and helping to secure the UK's future place in the world and advance its longer-term interests.[30]

However, critics of the plan to join CPTPP point to the fact that the economic gains for the UK are likely to be very small. The UK either already has bilateral trade agreements in place, or will do soon, with almost all CPTPP member countries. This includes a UK-Australia deal which, according to the UK Government, should be agreed as soon as summer 2021.[31] As a result, improved market access for UK goods via tariff reductions from joining the CPTPP is unlikely to have a significant positive economic impact.[32]

CPTPP COUNTRY CASE STUDY

Pesticide-related harms in Peru

Peru has been plagued by human health problems associated with pesticide use. In the ten years between 2007 and 2017, Peru increased the use of agricultural pesticides by 69%.[1]

In 1998, it was estimated that as many as 100,000 Peruvians were poisoned by pesticides each year.[2] Much of this is thought be as a result of the use of illegal pesticides that have remained stockpiled in many parts of the country. However, there are still many highly toxic pesticides that are legal to use in Peru, including aldicarb and paraquat.[3]

In 1999 the worst fatal pesticide poisoning in Peru's history happened in Tauccamarca. Twenty-four children died after ingesting a milk substitute that had been contaminated with the insecticide methyl-parathion which was banned in the UK in 2003[4]

In 2018, 76 farm workers were poisoned in the Piura region after inhaling the toxic pesticide malathion. At the same time 11 members of the public died in Sara Province after eating meat contaminated by pesticides. A further 40 people were poisoned, one fatally, after drinking alcohol made with contaminated corn in the Ancash region.[5]

In light of these human tragedies, the Peruvian Government has vowed to tackle the use of the most hazardous pesticides.[6] However, it remains to be seen how extensive or effective these promised measures will be.

The use of pesticides has also proven to be potentially harmful to the Peruvian economy. In 2019 the USA banned a number of Peruvian agricultural products from their markets as a result of the use of unauthorized pesticides. The products included asparagus, mangoes and fruit juice.[7]

Photo: Vegetable stall, Mercado de Surquillo, Miraflores district, Lima, Peru. Credit: Tomas Sobek, Flickr. CC BY 2.0

UPHOLDING UK DOMESTIC PESTICIDE STANDARDS –

AN UPDATE

The UK Government has committed to protecting UK food standards from being undermined by trade agreements.[33] Acceding to CPTPP's SPS chapter threatens this commitment. The UK may be particularly vulnerable to weakening its pesticide regulation due to a range of factors including political pressure to recoup lost EU market access and 'make a success' of Brexit, pressure from some UK lobby groups, and the fact that the UK regulatory system is already in flux and subject to fewer checks and balances than the EU provided. For example, UK ministers can currently amend, revoke and make regulations on how active ingredients in pesticides are authorised, and amend the Maximum Residue Levels permitted in food 'as Ministers consider appropriate', without having to debate this in parliament.[34] This makes it easier for the UK to change its pesticide regulation to accommodate trade partners.

What's happened on trade and pesticides since summer 2020?

During parliamentary debates on the post-Brexit Agriculture Bill, the public put the Government under intense pressure to guarantee in primary legislation that the UK's food standards (including on pesticides) would be upheld. More than 1 million people signed a petition set up by the National Farmers Union.[35] At this time we issued the first *Toxic Trade* report[36] arguing that UK pesticide standards were at risk from future trade deals. Alongside the report sat public polling showing almost three quarters (71%) of the British public wanted the UK Government to resist attempts from foreign trade partners to overturn bans on pesticides.[37]

In July 2020, rather than including guarantees on maintaining standards in the Agriculture Act, the Government opted to establish a Trade and Agriculture Commission (TAC). Designed to last six months, the Commission was given the enormous task of advising the Secretary of State for International Trade on how to secure opportunities for UK farmers and economy, while not undermining standards and taking account of the interests of developing nations and consumers.[38] In response to public pressure, the TAC has since been given more longevity and placed on a statutory footing.[39] The TAC report was released in March 2021, though Government is not bound to follow its recommendations.

What's in the Trade and Agriculture Commission report?

The report is extensive and encompasses many recommendations, but one key message is the need to maintain UK standards. In the foreword to the report, the chair, Tim Smith, was clear that there could be "no race to the bottom, no backsliding or turning back the clock on [UK] standards."[40] The report also acknowledged the concerns of consumers about food standards (which includes pesticide residues[41]) and rejected the idea that household food insecurity in the UK could be resolved by cheap, low standard food imports. It called for impact assessments that examine environmental implications of FTAs and more effective stakeholder consultation.

The report recommended that the UK eliminate tariffs and quotas only where partners could demonstrate 'equivalence' to the standards required for UK producers. This echoes the independent National Food Strategy [42] (published July 2020). However, without an understanding of what these core standards might look like and how they might work in relation to pesticides, especially those which are currently banned in the UK, it is unclear how this might work in practice.

Six months prior to the TAC report being published, in September 2020, stakeholders established the Future British Standards Coalition (FBSC). Comprising farming groups, trade experts, public health practitioners, caterers and food and animal welfare experts (including the authors of this report), the coalition formed a new panel to scrutinise the UK's approach to food standards.[43] It raised concerns about the 'potential weakening of food import standards', and reiterated the

call for them to be enshrined in UK law, arguing that pesticide regulation is too important to be relegated to secondary legislation or tariff schedules where it can be easily changed without scrutiny or guaranteed debate. Primary legislation is still needed in order to protect pesticide standards.

What's the new statutory TAC's role in scrutinising CPTPP?

A new longer term, statutory Trade and Agriculture Commission, appointed by the Secretary of State for International Trade following continued public and parliamentary pressure, will now be responsible for producing a report that explains whether the CPTPP, and other future trade deals, are consistent with the maintenance of UK levels of statutory protection in relation to animal or plant life or health, animal welfare and the environment.[44]

The report will be passed to the Secretary of State for International Trade who will lay it before Parliament alongside the text of the proposed free trade agreement. This will be followed by a 21-day scrutiny period under the terms of the Constitutional Reform and Governance Act 2010.[45] Although parliamentarians still do not have the right to vote down a trade agreement, the Government has pledged to abide by what is now known as the 'Grimstone rule'[46] . Trade Minister Lord Grimstone assured fellow peers in Trade Bill debates[47] that in the future UK trade deals would not be ratified without a debate if parliament called for one.

As noted above, a key difference is that with the CPTPP the UK is applying to join a pre-existing agreement, rather than negotiate a new deal, so there will be no scope for integrating TAC recommendations on the substance of the FTA.

What's the role of other UK statutory bodies in protecting UK pesticide standards from trade?

We note from the terms of reference for the TAC[48] that it has no remit to discuss food and feed safety regulation and policy across the whole food chain since these areas are regulated by the Food Standards Agency, Food Standards Scotland and the Department of Health and Social Care. So, not only are many of the TAC recommendations potentially incompatible with the CPTPP SPS chapter, it is unclear if the TAC has any role in scrutinising the impact of trade on pesticide regulations relating to food, begging the question who will take on this important scrutiny role.

UK Trade Ministers also specifically ruled human health out of scope for the new statutory TAC.[49] When questioned later about this in parliament the response from ministers was that health advice would come from "other sources". Ministers have yet to lay out who these other sources would be or whether the Government's commitment to maintaining standards of 'food safety' would cover potentially toxic pesticide residues, for example, or be limited to the control of pathogens.

The most obvious body from which the Department for International Trade should seek health advice is the Food Standards Agency (FSA). It was established in 2000 following several high-profile outbreaks of foodborne illness. It is a non-ministerial government department, raising questions about whether its independence is equivalent to the independent, statutory Trade and Agriculture Commission.

The Food Standards Agency's chief concern is protecting people and the economy in England, Wales and Northern Ireland from the 'burden of foodborne illness'.[50] Its chief executive however has stated publicly that when considering whether to licence new imports for sale in the UK, the FSA considerations will extend beyond food safety into other consumer interests, such as food production standards and environmental concern.[51]

The NFU has queried whether the Food Standards Agency will be able to take a view on these areas that are considered beyond current WTO sanitary and phytosanitary rules on safety and make assessments based on the method of production. The competency and capacity of the FSA to cover environmental risk assessment is also unclear.

In the view of the authors, questions remain about how safety will be assessed. Finding answers to these questions is particularly important given the significant discrepancies between current UK pesticides standards and those of potential trading partners. For example, currently Australian apples are allowed to contain 300 times the amount of the insecticide propargite than UK apples. Propargite has been linked to cancer and been shown to have adverse effects on sexual function and fertility, including causing miscarriages.[52]

The Food Standards Agency is in charge of keeping out products that might cause foodborne illness and works with Port Health Authorities to monitor for levels of pesticide residues. If a recurring problem is found with a specific product or supplying country, then enhanced controls can be set. However, what remains unclear is how the FSA will handle imports from countries with much higher tolerance of pesticide residues than we allow.

As this briefing shows, CPTPP could lead to higher levels of more toxic pesticides appearing in UK food. These pesticides have been linked to a range of chronic health impacts, which are unlikely to be considered as 'foodborne illness'. In addition, the FSA has suffered major budget and staff cuts in recent years. The paragraph of text on the FSA website which deals with 'Pesticides and Food Imports' has not been updated since January 2018 and still links to EU legislation.[53]

Questions also remain as to how the system will work in practice with regards to Scotland, which has its own food standards agency. Under the Internal Market Act, each nation of the UK is required to accept food produced in any of the other four nations. While the Internal Market access provisions do contain an exception which allows each of the four nations to make its own decisions on which pesticides to approve for use, there is no such exemption for Maximum Residue Levels (MRL). In fact, the Government has stated that its intention is for the mutual recognition principle to apply to rules on MRLs[54] meaning that all four nations are required to view each other's safety limits as 'equivalent', thereby potentially undermining attempts by the devolved administrations to set more stringent MRLs which are more protective to human health.

In addition, because other devolved nations' MRLs have to be 'mutually recognised', if approved pesticides diverge, Scotland and Wales won't be able to exert control over the types of pesticides that UK negotiators agree to permit in food imported into the UK from other countries.[55] Northern Ireland is covered by EU pesticide regulations due to the Northern Ireland Protocol.

It should be noted that the issues covered in this section are almost entirely related to human health. It appears highly unlikely that environmental harms related to pesticides would be adequately covered by the FSA. As a result, it would be reasonable to insist that the Department for Environment, Food and Rural Affairs (Defra), and the associated Expert Committee on Pesticides (ECP), would be responsible for advising UK trade negotiators on environmental pesticide issues.

FULL RECOMMENDATIONS TO THE UK GOVERNMENT:

CPTPP-specific:

- Do not allow any weakening of UK pesticide standards via CPTPP, including resisting all pressure during the accession process. This must include:
  - » Ensuring that no currently banned pesticides are allowed for use in the UK
  - » Ensure that food containing detectable residues of currently banned substances cannot be imported into the UK
  - » Ensure that Maximum Residue Levels are maintained or strengthened.
- Prevent UK farmers from being disadvantaged by cheap food imports produced to weaker pesticide standards in CPTPP member countries.
- Ensure the new statutory TAC provides a detailed impact assessment of the effect of CPTPP on UK pesticide standards to highlight areas of concern and provides options for action such as for negotiating side letters (given the text of the agreement cannot be updated).
- Conduct and publish urgent and thorough assessments to understand the following:
  - » The extent to which CPTPP member countries see UK pesticide regulations as a trade barrier and therefore what pressures UK domestic pesticide standards are likely to come under during the CPTPP accession process.
  - » The risks to UK pesticide standards (and health protections in particular) posed by membership of CPTPP. This assessment should include a focus on food imports from all 11 current CPTPP member countries.
  - » The potential to secure unanimous agreement from all CPTPP member countries for side letters exempting the UK from all requirements related to pesticides, particularly those which create additional obligations to justify taking a more stringent approach to protecting human health and the environment.
- Make the UK's intention to maintain pesticide protections clear to all CPTPP member countries and (depending on the outcome of the assessment described above) seek agreement to use side letters to opt out of any elements of the CPTPP Agreement that reduce the UK's regulatory autonomy over food and environmental standards, including pesticide regulation.
- Publicly acknowledge that CPTPP follows a US approach to pesticides and, as such, would set a precedent as the UK's first departure from its current, more precautionary approach to regulating pesticides.
- Ensure that accession to CPTPP takes place in the open with the opportunity for full parliamentary and public scrutiny. This should include a meaningful role for MPs, Peers and the devolved administrations in the accession process.
- Ensure that membership of CPTPP does not hamper the ability of the devolved nations to introduce stricter measures to protect human health and the environment from pesticides.
- Resist all attempts by CPTPP member countries to push the UK to revert to weak Codex Alimentarius standards on pesticide residues.

Broader UK policy related to trade and pesticides:

- Maintain the Precautionary Principle as the basis upon which all pesticide-related decisions are made and strengthen its implementation. This includes maintaining the so called 'hazard-based' approach to pesticide authorisations.
- Introduce additional legislative protections to ensure that any change to food safety standards or environmental protections subsumed in trade agreements can only be introduced via primary legislation.
- Take a global lead by strengthening the UK's new standalone pesticide regime to be more effective than the EU system in terms of protecting human health and the environment.
- Preserve the power for the UK to exercise its right to go above and beyond the status quo and applicable international standards to continually strive for higher levels of consumer and environmental protection.
- Pass primary legislation on pesticides that gives Parliament greater oversight and reduces the scope for Ministers to change Maximum Residue Levels and approve new active substances.
- Fill the regulatory and governance gaps created by EU exit to ensure the UK pesticide regime is fit-for-purpose in terms of protecting human health and the environment and better able to resist efforts from trade partners to drive down UK standards.
- Support developing country efforts to reduce pesticide-related harms by strengthening, or at least maintaining, existing UK Maximum Residue Levels (MRLs) and restrictions on imports of produce containing residues of pesticides banned for use in the UK.
- Take a leading role on pesticide issues within the World Trade Organization SPS Committee and push for it to prioritise protecting human health and the environment from pesticide-related harms.

ANNEX 1

There are 119 pesticides that have been banned by the UK/EU that are still permitted for use in at least one or more CPTPP member county. Of those 119, 67 (56%) are classified by PAN International as Highly Hazardous Pesticides (HHPs).[56]

	Pesticide (active substance)	Group	HHP?	Impacts (for health issues listed below see guide on page 8)
1	1,3-Dichloropropene	Fumigant	✓	Carcinogen, Suspected Endocrine Disruptor
2	Acetochlor	Herbicide	✓	Carcinogen, Suspected Endocrine Disruptor
3	Aciflurofen	Herbicide	✓	Carcinogen
4	Ametryn	Herbicide		
5	Amitraz	Insecticide		Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
6	Amitrole	Herbicide	✓	Carcinogen, Suspected Endocrine Disruptor
7	Asulam	Herbicide		Carcinogen
8	Atrazine	Herbicide		Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin, Water Contaminant
9	Azinphos-ethyl	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor, Bee toxic
10	Azocyclotin	Insecticide	✓	Acutely toxic, Suspected Endocrine Disruptor, Toxic to aquatic organisms, Persistent in water
11	Benfuracarb	Insecticide	✓	Cholinesterase inhibitor, Bee toxic
12	Bensultap	Insecticide		
13	Bitertanol	Fungicide		Suspected Endocrine Disruptor
14	Butralin	Herbicide		
15	Cadusafos	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor, Bee toxic, Toxic to aquatic organisms
16	Carbaryl	Insecticide	✓	Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin, Cholinesterase inhibitor, Bee toxic
17	Carbendazim	Fungicide	✓	Carcinogen, Suspected Endocrine Disruptor
18	Cartap	Insecticide		
19	Chinomethionate / Oxythioquinox / Quinomethionate	Fungicide		Toxic to aquatic organisms
20	Magnesium Chlorate	Dessicant		
21	Potassium Chlorate	Dessicant		
22	Chlorfenapyr	Insecticide	✓	Carcinogen, Bee toxic
23	Chlorfenvinphos	Insecticide	✓	Acutely toxic, Suspected Endocrine Disruptor, Cholinesterase inhibitor, Bee toxic
24	Chlormephos	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor
25	Chlorothalonil	Fungicide	✓	Acutely toxic, Carcinogen
26	Chlorpropham	Herbicide	✓	
27	Chlorpyrifos-methyl	Insecticide	✓	Cholinesterase inhibitor, Bee toxic
28	Chlorthal-dimethyl	Herbicide		

	Pesticide (active substance)	Group	HHP?	Impacts (for health issues listed below see guide on page 8)
29	Chlozolinate	Fungicide		
30	Cinidon-ethyl	Herbicide		
31	Clothianidin	Insecticide	✓	Bee toxic
32	Cyanamide	Plant growth regulator	✓	
33	Cyanazine	Herbicide	✓	Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
34	Cyclanilide	Plant growth regulator		
35	Cyfluthrin	Insecticide	✓	Bee toxic
36	Cyhalothrin	Insecticide	✓	Suspected Endocrine Disruptor, Bee toxic
37	Cypermethrin, Beta	Insecticide	✓	Carcinogen, Suspected Endocrine Disruptor, Bee toxic
38	Desmedipham	Herbicide		
39	Diazinon	Insecticide	✓	Carcinogen, Suspected Endocrine Disruptor, Cholinesterase inhibitor, Bee toxic
40	Dichlobenil	Herbicide	✓	Carcinogen
41	Dichlorvos / DDVP	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor, Bee toxic
42	Dicloran	Fungicide		
43	Dimethenamid	Herbicide		Carcinogen
44	Dimethoate	Insecticide	✓	Acutely toxic, Carcinogen, Suspected Endocrine Disruptor, Cholinesterase inhibitor, Developmental or Reproductive Toxin, Bee toxic
45	Diniconazole-M	Fungicide		
46	Dinobuton	Fungicide		
47	Dinoterb	Herbicide	✓	Acutely toxic
48	Diphenylamine	Fungicide		
49	Diquat bromide	Herbicide	✓	Acutely toxic
50	Diquat dichloride	Herbicide	✓	Acutely toxic
51	Ethalfluralin	Herbicide		Carcinogen
52	Ethoxyquin	Fungicide		
53	Ethoxysulfuron	Herbicide		
54	Fenamidone	Fungicide		
55	Fenarimol	Fungicide		Suspected Endocrine Disruptor
56	Fenbutatin oxide	Insecticide	✓	Acutely toxic, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin, Toxic to aquatic organisms
57	Fenitrothion	Insecticide	✓	Suspected Endocrine Disruptor, Cholinesterase inhibitor, Bee toxic
58	Fenpropathrin	Insecticide	✓	Acutely toxic, Bee toxic
59	Fenthion	Insecticide	✓	Suspected Endocrine Disruptor, Cholinesterase inhibitor, Bee toxic
60	Fentin Acetate / Triphenyltin Acetate	Fungicide	✓	
61	Fentin Hydroxide / Triphenyltin Hydroxide	Fungicide	✓	Acutely toxic, Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
62	Fenvalerate	Insecticide	✓	Suspected Endocrine Disruptor, Bee toxic

	Pesticide (active substance)	Group	HHP?	Impacts (for health issues listed below see guide on page 8)
63	Flufenoxuron	Insecticide	✓	Toxic to aquatic organisms
64	Flupyrsulfuron-Methyl / DPX KE 459 (Also 150315-10-9)	Herbicide		
65	Flurenol	Herbicide		
66	Flurprimidol	Plant growth regulator		
67	Flurtamone	Herbicide		
68	Furathiocarb	Insecticide		Acutely toxic, Cholinesterase inhibitor
69	Glufosinate (inc. Ammonium)	Herbicide	✓	Suspected Endocrine Disruptor
70	Guazatine	Fungicide		
71	Hexazinone	Herbicide		Acutely toxic
72	Iminoctadine	Fungicide		
73	Indolyacetic Acid	Plant growth regulator		
74	Iprodione	Fungicide	✓	Carcinogen, Suspected Endocrine Disruptor
75	Isoproturon	Herbicide		
76	Isoxathion	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor, Bee toxic
77	Linuron	Herbicide	☒	Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
78	Mercuric Chloride / Calomel / Mercurous Chloride	Fungicide	✓	Acutely toxic, Carcinogen, Developmental or Reproductive Toxin
79	Mercuric Oxide	Fungicide	✓	Acutely toxic, Carcinogen, Developmental or Reproductive Toxin
80	Methidathion	Insecticide	✓	Acutely toxic, Carcinogen, Cholinesterase inhibitor, Bee toxic
81	Methyl Bromide	Fumigant	✓	Acutely toxic, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
82	Monolinuron	Herbicide		
83	Naled	Insecticide	✓	Cholinesterase inhibitor, Developmental or Reproductive Toxin, Bee toxic
84	Nicotine	Insecticide	✓	Acutely toxic, Developmental or Reproductive Toxin
85	Orthosulfamuron	Herbicide		Carcinogen
86	Oxadiargyl	Herbicide		
87	Oxasulfuron	Herbicide		
88	Oxydemeton-Methyl	Insecticide	✓	Acutely toxic, Suspected Endocrine Disruptor, Cholinesterase Inhibitor, Developmental or Reproductive Toxin, Bee toxic
89	Pebulate	Herbicide		Cholinesterase inhibitor
90	Permethrin	Insecticide	✓	Carcinogen, Suspected Endocrine Disruptor, Bee toxic
91	Phosalone	Insecticide		Cholinesterase inhibitor
92	Picoxystrobin	Fungicide		Carcinogen
93	Procymidone	Fungicide	✓	Carcinogen, Suspected Endocrine Disruptor
94	Propachlor	Herbicide	✓	Carcinogen, Developmental or Reproductive Toxin
95	Propanil	Herbicide		Carcinogen, Suspected Endocrine Disruptor

	Pesticide (active substance)	Group	HHP?	Impacts (for health issues listed below see guide on page 8)
96	Propargite	Insecticide	✓	Acutely toxic, Carcinogen, Developmental or Reproductive Toxin, Toxic to aquatic organisms
97	Propham	Herbicide		Cholinesterase inhibitor
98	Propiconazole	Fungicide	✓	Carcinogen, Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
99	Propineb	Fungicide	✓	Developmental or Reproductive Toxin
100	Propisochlor	Herbicide		
101	Pymetrozine	Insecticide	✓	Carcinogen
102	Quinoxyfen	Fungicide	✓	Toxic to aquatic organisms
103	Rotenone	Insecticide	✓	Bee toxic
104	Simazine	Herbicide	✓	Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
105	Tecnazene	Fungicide		
106	Tepraloxydim	Herbicide	✓	Suspected Endocrine Disruptor
107	Thiacloprid	Insecticide	✓	Carcinogen, Suspected Endocrine Disruptor, Bee toxic
108	Thiamethoxam	Insecticide	✓	Bee toxic
109	Thiobencarb	Herbicide		Cholinesterase inhibitor
110	Thiocyclam	Insecticide		
111	Thiodicarb	Insecticide	✓	Carcinogen, Cholinesterase inhibitor, Bee toxic
112	Thiram	Fungicide	✓	Suspected Endocrine Disruptor, Developmental or Reproductive Toxin
113	Tolyfluanid	Fungicide	✓	Carcinogen
114	Triasulfuron	Herbicide		
115	Tricyclazole	Fungicide		
116	Tridemorph	Fungicide	✓	
117	Trifluralin	Herbicide	✓	Carcinogen, Suspected Endocrine Disruptor
118	Vamidothion	Insecticide	✓	Acutely toxic, Cholinesterase inhibitor, Bee toxic
119	Zineb	Fungicide		Suspected Endocrine Disruptor, Developmental or Reproductive Toxin

ANNEX 2

DATA SOURCES FOR KEY FINDINGS

The data underpinning the key findings contained in this report have come from a variety of sources which are listed below. The authors have used these data sources as the foundation for conducting additional, in-depth analysis in order to arrive at the report's key findings.

Country-specific data

UK

All data taken from the UK Government's Chemical Regulation Directorate databases:

- Pesticide product approvals - **https://secure.pesticides.gov.uk/pestreg/ProdSearch.asp**
- Pesticide active substances approvals - **https://www.hse.gov.uk/pesticides/pesticides-registration/uk-active-substances-register.htm**
- Maximum Residue Levels - UK - **https://secure.pesticides.gov.uk/MRLs/Main**

Australia

All data taken from Australian Government databases:

- Pesticides active substance and product approvals - **https://apvma.gov.au/node/10831**
- Maximum, Residue Levels (MRLs) - **https://www.legislation.gov.au/Details/F2021C00236**

Canada

All data taken from Canadian Government databases:

- Pesticides active substance and product approvals - **http://oasdmz01.hc-sc.gc.ca/pi-ip/index-eng.php**
- Maximum, Residue Levels (MRLs) - **https://pr-rp.hc-sc.gc.ca/mrl-lrm/index-eng.php**

Chile

All data taken from Chilean Government databases:

- Pesticides active substance and product approvals - **http://www.sag.cl/ambitos-de-accion/plaguicidas-y-fertilizantes/78/registros**
- Pesticides active substance and product approvals - **https://www.sag.gob.cl/content/lista-de-plaguicidas-autorizados-0**
- Maximum, Residue Levels (MRLs) - **https://www.bcn.cl/leychile/navegar?idNorma=1010986&buscar=residuos**

New Zealand

All data taken from New Zealand Government databases:

- Pesticides active substance and product approvals - **https://eatsafe.nzfsa.govt.nz/web/public/acvm-register**
- Maximum, Residue Levels (MRLs) - **https://www.mpi.govt.nz/dmsdocument/19550-Maximum-Residue-Levels-for-Agricultural-Compounds**

Peru

All data taken from Peruvian Government databases:

- Pesticides active substance and product approvals - **http://200.60.104.77/SIGIAWeb/sigia_consulta_producto.html**
- Maximum, Residue Levels (MRLs) - **https://www.senasa.gob.pe/senasa/descargasarchivos/2014/11/RM-1006-2016-MINSA-con-NTS-128-MINSA-2016-DIGESA-LMR-Plaguicidas.pdf**

International standards

- Codex Alimentarius Maximum Residue Levels (MRLs) - **http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/commodities/en/**

Highly Hazardous Pesticides (HHPs)

- PAN International List of Highly hazardous Pesticides (March 2021) - **http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf**
- PAN International Consolidated List of Banned Pesticides (March 2021) - **http://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/**

Human health and environmental issues/classifications

- PesticideInfo database (managed by PAN North America) - **https://www.pesticideinfo.org/search-chemicals-or-products**
- PAN International List of Highly hazardous Pesticides (March 2021) - **http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf**

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TOXIC TRADE

How joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) threatens to weaken UK pesticide standards

A report by PAN UK, Sustain and Dr Emily Lydgate

Pesticide Action Network UK

PAN UK is the only UK charity focused solely on tackling pesticdes 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 impacts of harmful pesticides to both human health and the environment.

Our work includes campaigning for change in policy and practices at home and overseas, co-ordinating projects 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.
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Sustain

Sustain: The alliance for better food and farming, advocates food and agriculture policies and practices that enhance the health and welfare of people and animals, improve the living and working environment, enrich society and culture, and promote equity.

It represents around 100 national public interest organisations working at international, national, regional and local level.
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