

DIRTY

DOZEN

The UK government tests roughly 3,000kg of food for pesticide residues each year. Once the results are published, PAN UK analyses this data and makes it accessible to the general public by producing the annual 'Dirty Dozen'. The Dirty Dozen lists the fruit and vegetables most likely to contain residues of two or more pesticides (known as 'pesticide cocktails') to help inform people's shopping decisions.

What are pesticides?

Pesticides are poisons designed to kill living organisms. 'Pesticides' is the umbrella term for thousands of different active substances including herbicides (commonly referred to as weed killers), insecticides and fungicides. Crops are often treated with pesticides many times during a growing season – as many as 20 different chemicals can be applied to wheat for example.

Certain groups of people are more susceptible to the effects of pesticides, especially young children and expectant parents. Exposure to certain pesticides at critical stages in development can interfere with particular organs and their functions. Of particular concern are endocrine disrupting chemicals which affect hormone systems and have been associated with learning disabilities, attention deficit disorder and brain development problems.

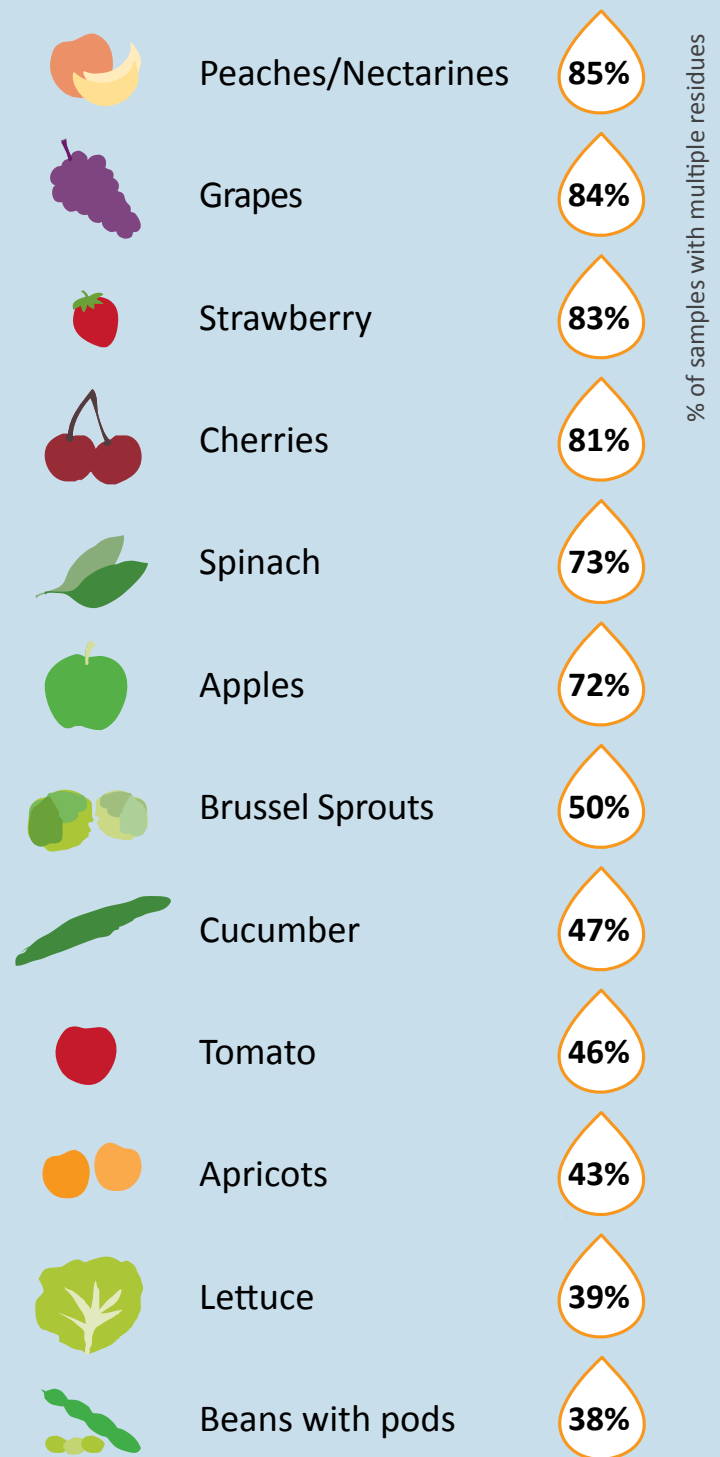
The cocktail effect

PAN UK's Dirty Dozen focuses on produce with multiple pesticide residues. This is because the government sets safety limits for just one pesticide at a time, ignoring the growing body of evidence that chemicals can become more harmful when combined (a phenomenon known as the 'cocktail effect'). This not only ignores the potential risks to human health associated with pesticide mixtures found on one item (an apple, for example) but also those found in one dish (such as a fruit salad) let alone an entire day's worth of food.

Why does PAN not provide a list of 'safe' produce?

PAN UK does not produce a so-called 'Clean 15' list of produce with the least residues. This is because the government testing programme is so limited that we would not want to give the impression that certain produce is guaranteed to be free from pesticide cocktails. It is also possible to grow food using hazardous pesticides without the chemicals in question appearing as residues in food. As a result, an absence of residues should not be taken as assurance that there have been no pesticide-related harms to human health or the environment where the food was grown.

Residue Results 2022



The results of the government's residue testing programme are only available for the preceding year. The results above are, therefore, based on the most recent data available.

The problem with UK government testing

Unfortunately, the government tends to select a different list of produce for testing each year. As a result, produce found to be high in multiple pesticide residues one year will often not be tested in subsequent years. This inconsistent approach means that it is impossible to establish long-term trends in terms of which produce is the most problematic. In order to provide shoppers with a clearer overview of problem produce, PAN UK has compiled a list looking at the worst culprits over the past five years. →

Spotlight on grapes

Grapes have often ranked near the top of the Dirty Dozen lists over the years. Testing in 2022 – the most recent year for which results are available – examined grapes from thirteen countries, including South Africa, Brazil, India and Spain.

In total, 94 of the 112 1kg samples tested were found to contain multiple residues. Forty-seven different pesticide active substances were detected across all samples, including thirty-one fungicides, fourteen insecticides and one herbicide. Nine of these pesticides are not approved for use in the UK due to concerns about impacts on human health or the environment. Eighteen of the pesticides found are classified as Highly Hazardous Pesticides (HHPs), meaning that they pose an unacceptable risk to human health or the environment. Eleven carcinogenic pesticides and eight endocrine disrupting chemicals were detected.

The use of toxic pesticides on grapes poses a threat to the environment, growers and consumers. The good news is that European grape growers appear to be switching away from pesticides, with Spain, France and Italy accounting for approximately 75% of global organic grape production. Other countries, like Mexico, are also increasing the areas of land allocated to organic grape production.

Found in grapes



8 Endocrine Disrupting Chemicals



47 different active substances



84% with multiple residues



3 reproductive or developmental toxins



9 actives not approved for use in the UK



31 fungicides
14 insecticides
1 herbicide



11 carcinogens



18 Highly Hazardous Pesticides

Residue Results 2018-2022



Grapefruit

100%



Soft citrus

96%



Oranges

87%



Strawberries

86%



Grapes

84%



Dried fruit (grapes)

82%



Cherries

81%



Herbs

81%



Pre-packed salad

81%



Peaches/Nectarines

76%



Lemons

75%



Spices

74%

% of samples with multiple residues

What is PAN UK doing?

PAN UK campaigns for a major reduction in pesticide-related harms to both human health and the environment. This includes making sure that UK farmers have the support they need to reduce their pesticide use and working with supermarkets to tackle pesticide harms linked to their global supply chains.



Sign up to follow our work at: www.pan-uk.org