



# Pesticides

## What are pesticides?

Pesticides are chemical and biological substances that are used to kill or control pests, such as rodents, insects, fungi and plants, that harm our food, health or environment.

They include insecticides (insect killers), fungicides, herbicides (weed killers), and molluscicides (snail and slug poisons). Pesticides also include plant growth regulators, wood preservatives and treatments to protect food in storage.

Government Ministers must approve all pesticides before they can be marketed or used in the UK. Once approved, pesticide residues in the food chain are monitored through a surveillance programme.

The role of the FSA is to ensure that food safety is given top priority during the approval and monitoring processes.

## Why are pesticides used?

The main use of pesticides is in agriculture to ensure that crops remain healthy and wastage through disease and infestation is prevented.

Pesticides are also used to protect public health by controlling various human pests and disease carriers.

The Food Standards Agency takes the issue of pesticide residues in food very seriously. We are here to protect consumers by ensuring that any pesticide residues are as low as practically possible and within safe limits.

## Why and how are pesticides regulated?

Pesticides are regulated to ensure that they do not present health risks to consumers, to people who apply them, to the environment or to animals.

Any company wanting to get a pesticide approved must submit an application containing information on any potential health risks. This always includes data on the potential of the pesticide to cause cancer and damage human reproduction.

Rigorous safety assessments are undertaken to ensure that any pesticide residues remaining in the crop will not be harmful to consumers.

The company must also supply information on how effective the pesticide is, whether impurities are present, whether it is safe for the people who will be applying it and whether it could impact on the environment or on animals in any way.

Pesticides are also reviewed regularly and if a review highlights any areas of concern then more data may be sought or the approval may be modified or withdrawn completely.

The European Union (EU) has a large ongoing programme to review all pesticides. This programme will standardise food safety throughout the EU.

#### What are pesticide residues?

Pesticide residues are the very small amounts of pesticides that can remain behind in the crop after harvesting or storage and make their way into the food chain.

Not all foods contains pesticide residues, and where they do occur they are typically at very low levels (parts per million).

Pesticide residues also include any breakdown products from the pesticide.

Pesticide residues can remain even when pesticides are applied in the right amount and at the right time. Sometimes they need to remain on the crop to do their job. For example, they may need to be on the surface of the fruit or the vegetable to protect it from pests during storage. Some pesticides are applied after harvest for this purpose.

#### Are pesticide residues in food safe?

People eating small amounts of pesticide residues in their diet are not at risk, provided that intakes are below the safety limits that are set by expert committees when the pesticide is approved.

Many scientific studies are done to set the safety limits and it is standard practice to include a large safety factor.

On the best science available, no harm will come to people who consume an amount of pesticide that is below the safety limits for that pesticide.

The risk to health from eliminating fruit and vegetables from the diet would far outweigh the risks posed by possible exposure to pesticide residues.

### How are babies and children protected?

The safety limits set take account of any risk to babies and children. Manufacturers also take stringent precautions to ensure that pesticide residues in baby food are kept to a minimum.

To further protect babies and children, new laws are being introduced that prohibit the manufacture and sale of processed baby foods and infant formula that contain individual pesticide residues greater than 0.01 mg/kg. These laws will take effect from 1 July 2002.

### How is food checked for pesticide residues?

A pesticide surveillance programme monitors pesticide residues in the UK food and drink supply to ensure that no unexpected residues are occurring and to provide an extra check that pesticide residues are not posing a risk to people's health.

This is overseen by the independent Pesticide Residues Committee (PRC), which advises the Government.

The surveillance is conducted quarterly and food samples are taken from shops and suppliers around the country. During 2001, over 4000 food samples were taken and each sample was analysed for many different pesticide residues.

The surveillance targets all the major food groups, including foodstuffs for babies and children, and is specifically aimed at areas where there might be a problem or where there is information relating to possible pesticide misuse.

### What does the surveillance programme show?

The surveillance programme shows that about 30% of the food we eat contains pesticide residues (2000 figure).

But this does not mean that consumers are at risk from the residues that are found. It is only when the legal limit (called a Maximum Residue Level – MRL) is exceeded or a residue of a non-approved pesticide is found that a potential problem is highlighted.

The legal limit represents the maximum amount of residue that will be left on a food when a pesticide is applied according to the instructions on the label. Legal limits are not safety limits and are usually set at levels well below the safety limits.

The vast majority (98%) of samples tested since 1998 do not contain residues above legal limits and do not contain non-approved pesticide residues.

In almost all cases where a legal limit was exceeded or a non-approved use was found, these did not present a health risk.

#### What are the health risks of exceeding the pesticide residue safety limits?

In general, occasionally exceeding the safety limits does not pose a health risk to babies, children or adults. Very rarely are the residues found in the surveillance programme associated with safety concerns and, where this is the case, action is taken by the Government to reduce exposure.

#### Will I get rid of pesticide residues by washing and peeling?

Washing and peeling may help remove residues of certain pesticides. But some pesticides are systemic, which means that they are found within the fruit or vegetable.

This means that washing and peeling will not remove all of that particular pesticide.

Washing fruit and vegetables before consumption is always a sensible precaution to ensure that they are clean. The FSA recommends as basic food hygiene advice that all fruit and vegetables are washed. Peeling is a matter of choice. In the UK, washing and/or peeling is not required as a protection against pesticide residues.

#### Does cooking reduce the residues?

Processing, including cooking, generally reduces the level of pesticides present. This is because processing can break down the pesticides.

#### Why do some foods contain pesticide residues when others don't?

About 70% of the food we eat contains no detectable residues (2000 figure). One reason for this is that the processes used to manufacture foods, such as drying and cooking, can destroy pesticides. Another reason is that some pesticides are applied to crops a long time before the crop is harvested.

The FSA wishes to see pesticide use kept to the minimum that is appropriate for effective use, even if higher levels would not be harmful.

#### Should I worry more about imported food than food grown in the UK?

Wherever there is a UK or EU legal limit (Maximum Residue Level - MRL), imported food sold in the UK must comply with it. In the absence of UK or EU legal limits international standards are used.

The surveillance programme looks at both UK and imported produce. Surveillance data show that despite the occasional problem, the UK does not generally import foods which contain pesticide residues in excess of legal limits.

### Should I worry about a 'cocktail effect' from multiple residues of pesticides?

More than one pesticide can be used on a crop and because of this some commonly consumed foods contain multiple pesticide residues.

Independent experts have considered this issue in the past and concluded that there is no reason to suppose that this would cause any problems. But the FSA recognises that this is an issue that causes concern so it has raised it with the independent Committee on the Toxicity of Chemicals in Food, Consumer Products and the Environment (COT).

The COT has established a Working Group which is looking at what is known about interactions between pesticides and the implications that has for risk assessment. Their conclusions have just been published in draft for public discussion. Once their report is finalised the Government will consider whether changes need to be made to the current regulatory system.

### How can I find out more?

The Pesticide Safety Directorate oversees the approval and surveillance for pesticides in the UK. Their website (<http://www.pesticides.gov.uk>) contains more information and links to other useful sites including:

The Pesticides Residues Committee

<http://www.pesticides.gov.uk/committees/PRC/prc.htm>

The Advisory Committee on Pesticides

<http://www.pesticides.gov.uk/committees/acp/acp.htm>

Information about the work on the 'cocktail effect' can be found at:

**<http://www.food.gov.uk/science/ouradvisors/toxicity/wigramp/>**

**[www.food.gov.uk](http://www.food.gov.uk)**