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**Contributors**

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*Government* F O O D  
S U R V E I L L A N C E



**surveillance** (*say sir-vay-l'nce*) *noun*  
a close watch or guard.  
[French]

**urvey** (*say sir-vay-l'nce*) *noun*

  
**MAFF**  
**FOOD SCIENCE**



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# Government FOOD SURVEILLANCE

Everything we eat and drink is a mixture of chemicals - just as we are ourselves.

There is a wide range of chemicals in the enormous variety of foodstuffs available today.

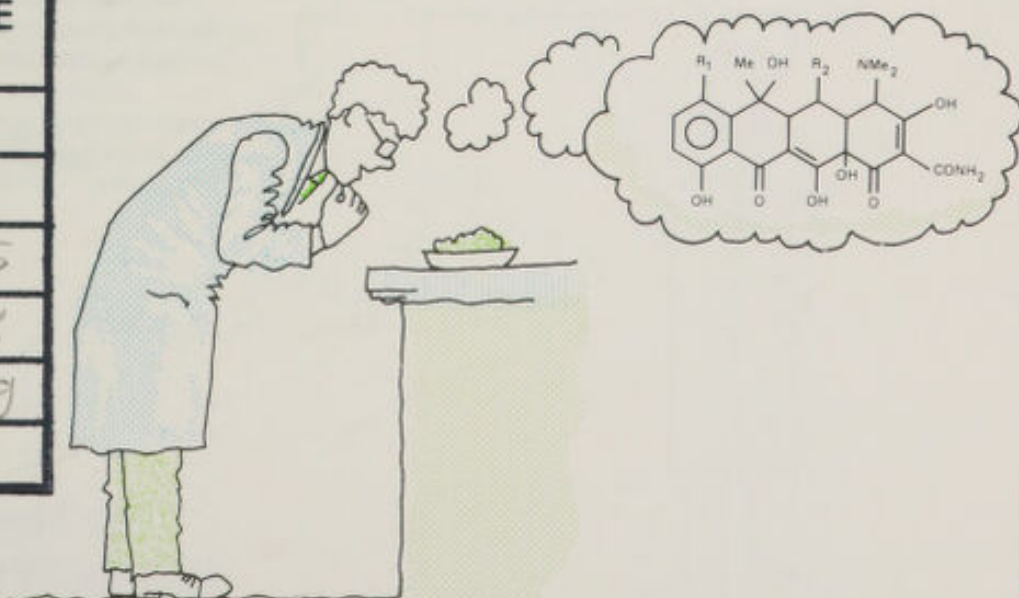
The Government's food surveillance system ensures that scientists are constantly monitoring our food and drink, analysing and evaluating the types and quantities of the chemicals present.

If, for example, toxins, pesticides or metals are found, their concentrations are measured and their effects on our health carefully assessed.

Any cause for concern is acted upon. Government is advised and the appropriate remedial action is taken.

In this booklet, you will learn how Food Surveillance works and acts. You will realise the extent of the intense scientific activity on which food surveillance work is founded. You will see how 10 Working Parties report back to a senior Government committee. And you will see how you have full access to information through the publication of Food Surveillance Papers.

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# Government **F O O D**

## **S U R V E I L L A N C E**

### *Who is testing what?*

Surveillance of our food and drink has been carried out for many years. The work is co-ordinated by a senior Government committee, the Steering Group on Food Surveillance.

Under this senior committee, expert Working Parties make sure there are no adverse changes, for any reason, to the composition of our food or drink, by monitoring the 10 broad areas shown here.

#### **FOOD WRAPPING COMPONENTS**

With the rapid and continuing increase in the use of plastic in food wrapping materials in recent years there are continuous studies on the possible transfer of chemicals from wrappings into foodstuffs.

#### **METALS**

This working party originally surveyed levels of mercury in tuna fish in 1971, and is currently completing investigations into the incidences in our diet of other metals, such as cadmium and lead, their effects and their sources.

#### **VETERINARY DRUG RESIDUES**

Constant checks are made for undesirable residues of drugs used in food producing animals. This working party liaises closely with the MAFF State Veterinary Service, as well as carrying out its own programmes of surveillance and related research.



### **ADDITIVES**

Satisfying the need for authoritative information on our intake of food additives, initially from *per capita* estimates and working towards more detailed studies.

### **PESTICIDES**

It is estimated that without pesticides, some 30% of world crops would be lost before harvest.

Surveillance constantly monitors pesticide residues in home-produced and imported foodstuffs, and in human tissues.

### **NITRATE, NITRITE, NITROSAMINES**

Nitrate in the diet comes from natural life processes, from nitrogenous fertilisers and from its use as a food preservative.

Dietary intake is being monitored and studies undertaken into what happens to these substances after consumption. Current usages and practices are being investigated.

### **NUTRIENTS**

Surveillance plays a vital part in defining nutrient levels as new farming, food processing and storage methods develop, and as new foods come onto the UK market.

Improved analytical methods provide more accurate measurements of the nutritional value of the national diet.

### **NATURAL TOXINS**

Assessing the incidences and levels of naturally occurring toxins in food is as relevant and as important as work on man-made chemicals in the diet. Certain bacteria, plants and fungi can have toxic effects.

### **INDUSTRIAL ORGANIC CONTAMINANTS IN THE ENVIRONMENT**

With increasing public interest in the possibility of contamination in the food chain from, for example, chemical works, this working party was established in 1986 to investigate this and related topics.

### **RADIONUCLIDES**

The Ministry has been monitoring radionuclides in foodstuffs, and in agricultural and marine materials, since the 1950s. There is extensive monitoring of produce from around nuclear sites and, currently, of the after-effects of Chernobyl.

## **STEERING GROUP ON FOOD SURVEILLANCE**



## How is food tested?

Surveillance is looking for problems *before* they develop.

This is the most effective way of protecting the consumer and plays a vital role in support of our legislation.

Samples may be bought specially, obtained from production lines, or at any stage in the growing or rearing processes.

Surveillance information is constantly being produced and assessed. Thousands of samples are analysed each year. Surveillance has developed some exceptionally sophisticated techniques, able to detect concentrations of some chemicals to as low as *one part in one million million*.

*Its like looking for one particular speck of dust in four double-decker buses!*



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## *What happens to the findings?*

There are regular reports from the Steering Group on Food Surveillance and from each Working Party. They are published and available in *Food Surveillance Papers* from HMSO.

If a problem seems to be indicated, then remedial action is proposed to the appropriate Government Department.

Findings can form the basis for policy and, ultimately, legislation. They can bring about revisions in manufacturing or growing methods; support home products; prevent environmental contamination; and protect us from foodstuffs imported from areas where regulations are less stringent.



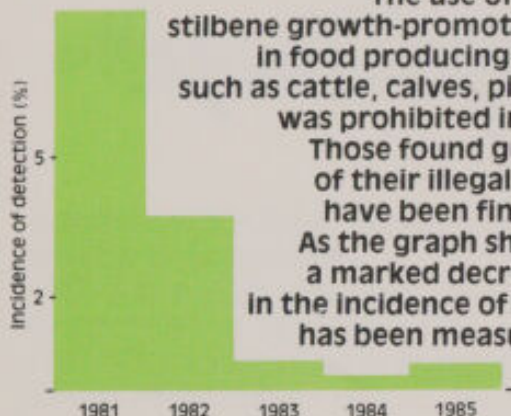


# Government FOOD SURVEILLANCE

## STILBENE RESIDUES

The use of stilbene growth-promoting hormones in food producing animals such as cattle, calves, pigs and sheep, was prohibited in 1982.

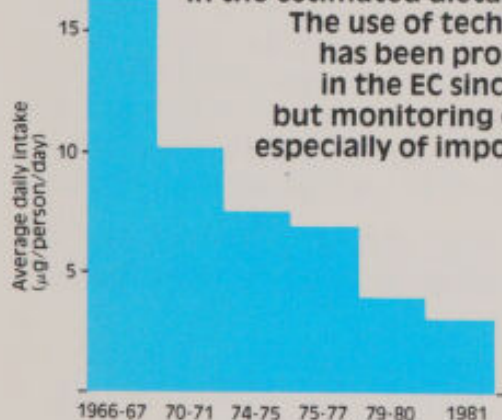
Those found guilty of their illegal use have been fined. As the graph shows, a marked decrease in the incidence of residues has been measured.



## HCH INTAKE

This chart shows that the general move towards less persistent pesticides in agriculture has led to a substantial decrease in the estimated dietary intake of HCH.

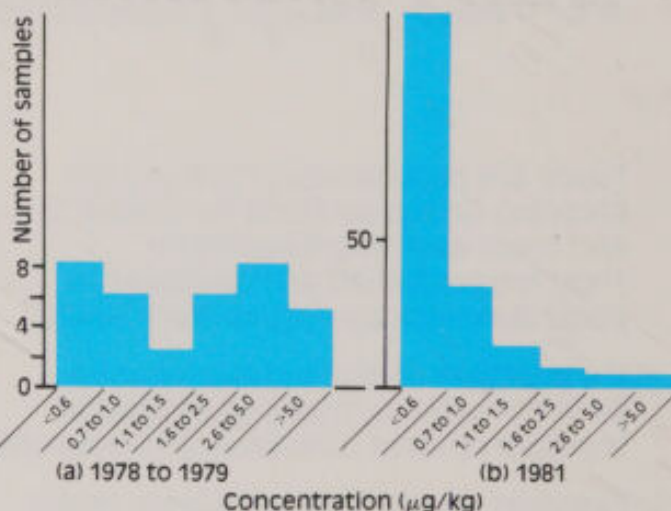
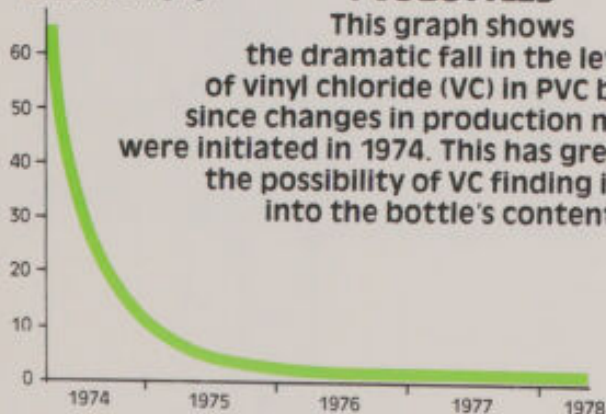
The use of technical HCH has been prohibited in the EC since 1981, but monitoring continues, especially of imported foods.



Residual VC (mg/kg)

## PVC BOTTLES

This graph shows the dramatic fall in the levels of vinyl chloride (VC) in PVC bottles since changes in production methods were initiated in 1974. This has greatly reduced the possibility of VC finding its way into the bottle's contents.



## NDMA IN BEER

The potentially harmful nitrosamine N-nitrosodimethylamine (NDMA) was found at low levels in beers in 1978. This was traced to the use of natural gas with e.g. its higher temperatures and lower sulphur content. Recommended changes in production methods resulted in significant reductions in NDMA levels by 1981.



# Any questions?

MAFF provides answers to questions on Food Surveillance in the form of reports from the Working Parties. There are also regular progress reports from the Steering Group on Food Surveillance, which give an overview of work and results, commentaries on work in progress and observations on future activity.

All Food Surveillance Papers can be purchased from HMSO.  
(Telephone orders on 01-622 3316).

The full list of Food Surveillance Papers is given on the next page.





# Government **F O O D**

## **S U R V E I L L A N C E**

### *Papers*

<b>Food Surveillance Paper No.</b>	<b>Title</b>	<b>Date</b>
1	The surveillance of food contamination in the United Kingdom	1978
2	Survey of vinyl chloride content of polyvinyl chloride for food contact and of foods	1978
3	Survey of vinylidene chloride levels in food contact materials and in foods	1980
4	Survey of mycotoxins in the United Kingdom	1980
5	Survey of copper and zinc in food	1981
6	Survey of acrylonitrile and methacrylonitrile levels in food contact materials and in foods	1982
7	Survey of dieldrin residues in food	1982
8	Survey of arsenic in food	1982
9	Report of the Working Party on Pesticide Residues (1977-1981)	1982
10	Survey of lead in food: second supplementary report	1982
11	Survey of styrene levels in food contact materials and in foods	1983
12	Survey of cadmium in food: first supplementary report	1983
13	Polychlorinated biphenyl (PCB) residues in food and human tissues	1983
14	Steering Group on Food Surveillance progress report 1984	1984
15	Survey of aluminium, antimony, chromium, cobalt, indium, nickel, thallium and tin in food	1985
16	Report of the Working Party on Pesticide Residues (1982 to 1985)	1986
17	Survey of mercury in food: second supplementary report	1987
18	Mycotoxins	1987
19	Survey of colour usage in food	1987
20	Nitrate, nitrite and N-nitroso compounds in food	1987
21	Survey of plasticiser levels in food contact materials and in foods	1987
22	Anabolic, anthelmintic and antimicrobial agents	1987
23	The British diet: finding the facts	1988
24	Food Surveillance 1985 to 1988	1988







