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Safety of Food and Water in the United Kingdom

Submitted by the United Kingdom

Part I. Food Safety

Introduction

1. The UK has had a number of high profile food safety concerns in the last 15 years including salmonella in eggs, patulin in apple juice, dioxins in salmon and probably most significant, BSE. These incidents led the UK Government to adopt a new approach to food safety by creating the Food Standards Agency (FSA) in April 2000. The FSA is a UK wide non-Ministerial Government department which is accountable to the UK Parliament through health Ministers. It has offices in London, Cardiff, Aberdeen and Belfast and is run by an independent Board chaired by Prof John Krebs. It has around 650 staff in total. The FSA is responsible for all policy issues concerning food safety and labelling including the negotiation and implementation of EU regulations and managing a large programme of research and surveys needed to provide the scientific evidence for its policies and advice to Government, consumers and the enforcement authorities. Other EU member states have developed similar organisations although most have responsibility for risk assessment and not for the wider responsibilities of the FSA which include risk management.

2. The FSA set out to develop new values in that its sole purpose was to ensure that all decisions concerning food safety put the consumer first and that these decisions were made in an open and accessible way independent of industry and pressure groups. Adopting this approach, the long term aim was to gain public trust and confidence in the way decisions on food safety are made.

3. The FSA developed new ways of working including widespread consultation at all stages of the decision making process which involved open meetings with all stakeholders to discuss all issues including the scientific evidence and, in particular, addressing uncertainties in the scientific

evidence surrounding an issue. In a parallel move, the UK Department of Health also formed the Health Protection Agency which brought together several previously separate organisations into a single Agency to address microbiological, chemical and radiological threats to the UK population. In particular, the HPA is responsible for the national surveillance of communicable diseases and has a network of specialist and reference laboratories.

Legislation

4. The chemical and microbiological safety of food is underpinned by extensive EU legislation which governs the production, composition, labelling and sale of most foods. Regulations also control the intra and inter community trade on food through operation of Border Inspection Posts and Port Health Authorities. In addition, national legislation exists to implement the EU legislation and also more general requirements as set out in the Food Safety Act 1990 and the new EU Regulation on official feed and food controls. In particular, the EU has set maximum limits for a range of mycotoxins (eg aflatoxin, ochratoxin A), heavy metals and shellfish toxins in food. In addition, new food hygiene regulations establish microbiological standards for several foods. These regulatory limits establish clear guidelines for handling any incident.

Intelligence and Surveillance

5. Threats to the safety of the food chain can arise from many sources and the FSA uses a range of intelligence and surveillance sources to monitor developments. The UK imports considerable quantities of food, much of it air freighted into the UK, which emphasises the need to monitor developments worldwide.

6. The FSA make extensive use of intelligence from a wide range of international organisations such as the World Health Organisation to provide information on outbreaks of diseases and food poisoning incidents. In addition, the EU member states are required to report to the Commission any outbreaks of disease or other results of concern to food safety which are then disseminated to other member states through mechanisms which include the Rapid Alert System for Food and Feed covering both chemical and microbiological findings. The FSA has also built up contacts with equivalent organisations in the US, Canada and elsewhere.

7. The UK has a well developed system for reporting food-borne infections through the Health Protection Agency and also from other sources such as Local Authorities and Port Health Authorities. This data is collated and examined for trends in food poisoning associated with specific foods or an increase in poisonings caused by specific organisms. Such analyses often identify outbreaks which may not be evident at the local level.

8. The FSA and, to a lesser extent Local Authorities, undertakes a number of surveys each year to examine food for specific chemical or microbiological contaminants. The results of these surveys identify any trends in types and concentration of contaminants but generally serve to reassure consumers of the safety of the UK food supply. Surveys undertaken in other countries may also identify potential problems such as a recent survey of dioxins in salmon reported in Science in January 2004.

Handling incidents

9. The FSA has developed a standardised approach to handling incidents which ensures the appropriate involvement of all interested parties. Underpinning these arrangements is the need for early recognition of any problems through surveillance, the constant development of new diagnostic procedures and improving FSA response through exercises and by other means. A key part of this preparation is working with other agencies, local authorities and the food industry to ensure that procedures and other arrangements are well understood. Exercises play an important role in testing procedures and staff to improve the handling of any emergencies.

Briefing the Media and the Public

10. The FSA has made considerable efforts to improve its relationship with the media and public by providing more information in an understandable form. An issue which will be very important is handling the media following any incident. The level of public concern following any chemical or microbiological incident will be particularly high and clearly thought through strategies which are practised during exercises are needed to ensure that government is able to respond appropriately. It will be essential to provide the media with an appropriate balance of authoritative information without causing any unnecessary concerns. The FSA ensures that its advice is based on the best available scientific evidence by consulting independent expert committees supported by an extensive programme of research and surveys. In addition, the FSA has recognised that it is essential to provide information in a form which the media can use and to have experts available for interview as appropriate. It is important to recognise that many other “experts” are only too willing to air their views if governments do not provide adequate amounts of information in the appropriate time-scales.

Part II. Drinking Water Safety

A new regulatory framework for public water supply

11. In 1989, a new statutory regulatory framework was put in place in the UK under which the provision of water to the public for the purposes of drinking, washing, cooking or food production passed from government ownership to privatised water companies. Water companies have a duty to supply water that is ‘wholesome’ at the time of supply, that is when water passes from the water company’s pipe into the consumer’s pipe. ‘Wholesomeness’ is defined according to standards set out in the Water Supply (Water Quality) Regulations 2000 (the Regulations) which are derived mainly from the 1998 EC Drinking Water Directive. It is a criminal offence for a water company to supply water that is unfit for human consumption, unless the company can show that it had no reasonable grounds for suspecting that the water would be used for human consumption, or that it had taken all reasonable steps to ensure that the water leaving its pipes was fit for human consumption, or was not used for such. Compliance with the standards are monitored and enforced by the Drinking Water Inspectorate (DWI). This system of private water companies operates in

England and Wales, but not in Scotland and Northern Ireland, though the same standards for water quality apply.

12. The Regulations set out requirements for monitoring drinking water quality, water treatment, and the provision of information, and govern the use of water treatment chemicals and drinking water construction products. Water companies are responsible for monitoring the quality of their supplies. Laboratories are accredited to UKAS or are inspected by the DWI and must take part in external analytical quality control schemes. This 'self-monitoring' role is subject to checks by the DWI and local authorities. One of the main tasks for the DWI is a rolling programme of continuous technical audit to ensure that water companies are meeting all of their regulatory obligations. Water companies must make all results of regulatory sampling available to the public. They must notify the health authorities, local authorities and the DWI of any event, which by reason of its effect on the quality of drinking water, may pose a significant health risk to consumers. The DWI investigates all such notifications, and in some cases the investigation could result in the water company being prosecuted. In 13 years there have been some 3000 enforcement orders, with only 60 leading to prosecution. Water companies must have plans for emergencies, and be able to provide alternative supplies such as bottled water to the public.

13. There are about 50,000 private water supplies in England and Wales supplying water for domestic and food production purposes. These supplies are regulated by the Private Water Supplies Regulations 1991 which are implemented by local authorities who must check the wholesomeness and sufficiency of such supplies.

14. The DWI manages a research programme covering a variety of topics relating to drinking water quality, treatment and distribution. Issues addressed in recent and current research topics include:

- (a) the enumeration of *Giardia* in drinking water;
- (b) the quality of drinking water in public buildings;
- (c) the incidence of *Mycobacterium avium* Complex and *Helicobacter* organisms in water supplies;
- (d) the relationship between sources of drinking water and Crohn's disease;
- (e) characterisation of waterborne *Aeromonas* species for their virulence potential;
- (f) molecular finger printing of *Cryptosporidium* oocysts isolated during regulatory monitoring;
- (g) effectiveness of UV treatment for *Cryptosporidium* in drinking water.

15. The DWI encourages the present 26 water companies to communicate effectively with local authorities and health authorities. It represents the UK in EU interactions, and also informally shares information with EU members and the European Commission. Under special circumstances, water companies can ask the DWI to facilitate testing by specialist laboratories for more dangerous pathogens, toxins or chemicals.

16. The new Regulatory regime has seen a significant improvement in drinking water standards. In 2002, water companies carried out nearly 3 million tests. Only 3,741 samples failed to meet water quality standards, compared to over 50,000 failures in 1992.

Cryptosporidium

17. Major human outbreaks of cryptosporidiosis in 1995 and 1997 led to new Regulations in England and Wales to ensure that water is treated adequately to remove *Cryptosporidium* oocysts, which are spheres about 5 microns in diameter. The oocysts are resistant to chlorine at the concentrations used in drinking water. The Regulations set a treatment standard of an average of less than one oocyst in 10 litres of water exiting from a treatment works. The standard does not take into account different species of *Cryptosporidium*, nor whether any oocysts are viable and thus potentially infective. It is a criminal offence to contravene the standard, subject to a defence that the company took all reasonable steps and exercised due diligence to avoid committing the offence.

18. The *Cryptosporidium* regulations specify continuous sampling of not less than 40 litres per hour of treated water going into supply at all sites where there is a significant risk of the treatment standard being contravened. The conditions for collection and analysis of samples, and for reporting the results, are also set down in detail, and it is an offence, subject to the same defence as above, if these conditions are not met. The sampling and analysis provisions are sufficiently rigorous to provide a forensically sound chain of evidence. Access to samples is carefully restricted and logged, as are all steps of the stipulated process from the sending out of clean filter assemblies to the final reporting of laboratory results. The DWI carries out unannounced audit inspections of the analytical laboratories.

19. Risk assessment required of the water companies by the end of 1999 identified 332 sites as being of significant risk. Water companies were given the choice of continuous monitoring, or installing and demonstrating a treatment process capable of continuously removing or retaining particles greater than one micron in diameter. A number of sites of significant risk have since been abandoned or their outputs combined with other sources for appropriate level of treatment at another works.

20. The treatment standard and continuous monitoring for *Cryptosporidium* that is in place in England and Wales is believed to be unique. The large amount of data collected over more than three years supports the assertion that well-operated, conventional physical barrier water treatment enables drinking water to meet a safe standard in respect of *Cryptosporidium*.
