

**Les avis sur l'irradiation des
alimentaires en Europe**

**Einstellungen gegenüber
Lebensmittelbestrahlung in Europa**

**Posizioni nei confronti dell'irradiazione
degli alimenti in Europa**



Attitudes to food irradiation in Europe

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Summary

Food irradiation is the treatment of food with high doses of ionising radiation. It is used to delay ripening of fruit, to inhibit the sprouting of vegetables, to kill bacteria that can cause food spoilage or food poisoning, and to kill insects which infest foods. There is growing international pressure from the irradiation industry and from some international organisations to increase the use of irradiation for food, but irradiation has many potential dangers for consumers, workers, animal welfare and the environment. A vote will soon be taken by the European Parliament over which foods should be permitted for irradiation in Europe. The final decision will be taken by the European Union in the coming months. This paper explains why there is so little support for food irradiation among consumers, the food industry and many national governments, and why food irradiation should not be used.

Zusammenfassung

Lebensmittelbestrahlung ist die Behandlung von Lebensmitteln mit hochdosierter ionisierender Strahlung. Sie dient dazu, das Reifen von Obst zu verzögern, die Keimung von Gemüse zu verhindern und Bakterien abzutöten, die Lebensmittel verderben oder vergiften können, sowie Insekten abzutöten, die Lebensmittel befallen können. Seitens der Bestrahlungsindustrie und einiger internationaler Organisationen besteht ein zunehmender internationaler Druck, die Anwendung von Bestrahlung für Lebensmittel zu steigern. Jedoch birgt die Bestrahlung viele potentielle Risiken für Verbraucher und Beschäftigte, wie auch für den Tier- und Umweltschutz. Das Europäische Parlament wird demnächst darüber abstimmen, welche Lebensmittel in Europa für die Bestrahlung zugelassen werden; eine endgültige Entscheidung wird die Europäische Gemeinschaft in den kommenden Monaten treffen. Dieses Papier soll zeigen, warum unter Verbrauchern, innerhalb der Lebensmittelindustrie und bei vielen Regierungen der Mitgliedsstaaten keine Zustimmung für die Bestrahlung von Lebensmitteln vorhanden ist und warum die Lebensmittelbestrahlung nicht zur Anwendung kommen sollte.

**Bien manger ne veut pas
dire manger irradié**

Gute Nahrung braucht keine Bestrahlung

Résumé

L'irradiation de la nourriture est le traitement de nourriture avec des doses élevées d'ionisation. C'est utilisé pour retarder le murissement des fruits, empêcher les légumes de pousser, tuer les bacterium qui peuvent causer la détérioration des denrées ou empoisonnement de la nourriture, et tuer les insectes qui infestent la nourriture. Il y a une pression forte internationale en cours de développement de l'industrie irradiation et de quelques organisations internationales pour augmenter l'utilisation de l'irradiation de la nourriture, mais l'irradiation a plusieurs risques pour les consommateurs, les travailleurs, les droits des animaux et l'environnement. Le Parlement européen va procéder au vote sur quelles produits qui peuvent être autorisé à ce procédé. La décision définitive sera prise au cours des prochains mois. Ce document explique pourquoi il y a si peu de soutien pour l'irradiation des denrées alimentaires parmi les consommateurs, l'industrie de la nourriture et plusieurs gouvernements nationaux, et pourquoi l'irradiation des denrées alimentaires ne devrait pas être utilisée.

Compendio

L'irradiazione degli alimenti consiste nel trattamento dei cibi per mezzo di alte dosi di radiazioni ionizzanti. Essa viene utilizzata al fine di ritardare la maturazione della frutta, di inibire la crescita della verdura, di eliminare i batteri che possono causare il deperimento o l'avvelenamento dei cibi e di uccidere gli insetti che infestano gli alimenti. Crescenti pressioni vengono esercitate a livello internazionale da parte dell'Industria e di alcune corporazioni nel tentativo di incrementare l'utilizzo della tecnica d'irradiazione degli alimenti, sebbene l'irradiazione comporti potenziali pericoli per i consumatori, i lavoratori, il benessere degli animali e l'ambiente. Un voto verrà espresso tra breve da parte del Parlamento Europeo in riferimento all'opportunità di permettere l'irradiazione degli alimenti in Europa. La decisione finale sarà presa dall'Unione Europea nel corso dei prossimi mesi. Questa ricerca spiega i motivi di un così limitato supporto a favore dell'irradiazione degli alimenti da parte dei consumatori, dell'industria alimentare e di molti governi, e le ragioni per le quali l'irradiazione degli alimenti non dovrebbe essere utilizzata.

**Il buon cibo non ha bisogno
delle radiazioni**

**GOOD FOOD DOES NOT
NEED IRRADIATING**



Introduction

2002 is an important year for food in Europe. A major decision will soon be taken over which foods will be allowed to be irradiated in every Member State of the European Union. There is mounting pressure from the irradiation industry and from some international bodies to introduce large scale irradiation of foods across Europe. Yet there seems to be little support for irradiated food among consumers, the food industry or many national governments in Europe. If the European Union legalises irradiation for many more foods, there is likely to be widespread opposition.

Legislation in Europe

For several years all Member States of the European Union have had their own rules over which foods they permit for irradiation, and at what doses, for sale within their borders. Some States have authorised several food categories for irradiation, while others have authorised none at all. In March 1999 the European Commission introduced two Directives on the irradiation of foods.* The Directives aim to harmonise the Member States' national laws governing the treatment of foods and ingredients with ionising radiation, and the conditions of use of ionising radiation. Harmonising the laws will mean that irradiated foods can be freely traded within the EU.

Trade in irradiated foods across the borders of all Member States is permitted, but only for foods on the EC approved Community 'positive' list. Currently the only foods on this list are dried aromatic herbs, spices and vegetable seasonings, and the maximum authorised dose for these is 10 kGy. The EU is considering whether to add more food categories to the EC list. This will be voted on by the European Parliament in late 2002.

At present, most EU Member States do not permit irradiation of any foods other than those on the EU list. Only five - Belgium, France, Italy, the Netherlands and the UK - permit the irradiation of additional foods. Even in these countries only a few of the foods permitted are irradiated in practice, and in most cases the percentage of those foods which are irradiated is small.

A proposal to remove the current 10 kGy food irradiation dose limit is currently being debated by the Codex Alimentarius Commission (the body that sets global food standards). The World Trade Organisation is putting pressure on Europe to relax food irradiation laws in order to facilitate international trade in irradiated foods. If more foods are added to the European positive list, and if the maximum irradiation dose limit is removed by Codex, the result could be far greater use of irradiation to treat all types of foods in Europe and worldwide.

* To view the two food irradiation Directives go to http://europa.eu.int/comm/food/fs/sfp/fi_index_en.html. Each member state was responsible for implementing the legislation in these Directives when they became applicable in September 2000.

European attitudes to irradiation

Why are so few foods irradiated in the EU and around the world? This is largely due to long-standing public opposition. Irradiation is an expensive technology with many potential hazards for consumers, workers and the environment. An EC Consultation conducted by DG SANCO in autumn 2000 (http://europa.eu.int/comm/food/fs/sfp/fi_index_en.html)

showed that European consumer organisations and many sectors of the food industry believe there is no real technological need for irradiation. They are also concerned that dangerous misuse of irradiation as a substitute for good hygiene in food production and processing will increase if the technology becomes more widely used. Consumer organisations believe that the technology does not offer real benefits to consumers, and that it will lead to consumers being misled over the freshness and quality of the food they buy.

In 2000 the European Commission put forward a draft proposal for extension of the Community positive list. The current list contains only one food category - **dried aromatic herbs, spices and vegetable seasonings**. The EC suggested the addition of the following foods to the list, all of which received a favourable opinion from the EU Scientific Committee for Food (SCF): **deep frozen aromatic herbs, dried fruit, flakes and germs of cereals, mechanically recovered chicken meat, offal of chicken, egg white, gum arabic, frog legs and peeled shrimps**. Several other foods that also received a favourable opinion from the SCF were suggested for exclusion from the EC list. These were: **fresh fruits and vegetables, cereals, starchy tubers (potatoes), fish, camembert from raw milk, casein, rice flour, blood products, fresh red meats and poultry meat**.

The EC proposal was opened for discussion via a consultation with consumer organisations, industry and other interested parties. Some of the views expressed in the consultation are presented below. An EC communication issued in August 2001 stated that, due to the diversity of the views expressed and the complexity of the issue, a broader debate is needed. This debate is now in progress, and a vote on completion of the list will be taken by the European Parliament in late 2002.

Views expressed in response to the EC Consultation

Against irradiating ANY MORE foods

- BEUC - European Consumers Organisation
- Consumers in Europe Group (CEG)
- Euro Coop - European Community of Consumer Co-operatives
- Kuluttajat-Konsumenterna ry (The Consumers, Finland)
- Die Verbraucher e. V. (Germany)
- Movimento dei Consumatori (Italy)
- Swedish Consumer Coalition
- The British Medical Association (BMA)
- Fife Health Board, Scotland
- The Soil Association, UK

Against irradiating SPECIFIC foods

- Association of Dried Fruit and Vegetable Industries
- European Confederation of Food and Agriculture Industries
- European Union of the Potato Trade
- European Union of Traders in Livestock and Meat
- Liaison Centre for the Meat Processing Industry in the EU (CLITRAVI)
- Association of German Food Traders
- Dutch Fish Product Board
- French Milk Products Industry (Groupe Lactalis)
- German Milk Industry Association



Support irradiating very HIGH RISK foods

- APC Europe S.A. - producer of protein derivatives from animal blood (Spain)
- Dutch Fish Product Board
- Federation of Veterinarians of Europe (FVE)

Support irradiating MANY foods

- International Consultative Group on Food Irradiation (ICGFI)
- Association Internationale d'Irradiation Industrielle
- Panel on Gamma and Electron Irradiation
- Gammaster Provence SA (Irradiation company)
- Croation Association for Consumer Protection
- Leatherhead Food Research Association
- Institute of Food Research, Norwich, UK
- Societe Civile d'Etudes et de Recherches dans la Domaine des Technologies d'Innovation

Why do consumers oppose irradiation?

Poor hygiene practices - irradiation is not the answer

Food irradiation can cover up poor hygiene practices and so provides no incentive to clean up food processing. The Liaison Centre for the Meat Processing Industry in the EU stated that their 'longstanding position is that the organisation remains against the decontamination of fresh meat, poultry meat and meat products by ionising radiation'. They believe that 'good hygiene practices, taken up in HACCP systems, should get first priority to improve the hygienic conditions along the meat chain'.

The British Medical Association has commented that 'the proposed strategy would encourage food producers to lower food safety standards because any degree of contamination could be compensated by irradiation', and so 'food irradiation should be restricted to dried aromatic herbs, spices and vegetable seasonings.'

The European Consumers Organisation (BEUC) doubt that there is a 'real technological need for products proposed', and commented 'the fact that products could be unavoidably contaminated is not an adequate reason for food irradiation and should rather be considered as a substitute for good hygiene practices'.

The European Community of Consumer Co-operatives (Euro Coop) argued that 'the Commission discusses safety and hygiene at the wrong point of the chain', 'it is possible to raise chicken in a salmonella-free environment' and 'priority should focus on improving production at primary level, storage, manufacturing processes, etc rather than on killing off contamination at the last stage'. They continued 'it may make the problem of food poisoning worse, if food irradiation is being used to legitimate bad hygiene'.

The Brussels-based Association of Dried Fruit and Vegetable Industries stated 'in our sector, effective alternatives to irradiation already exist' and that these are 'sufficient to guarantee consumers irreproachable standards of hygiene'.

According to the Dutch Fish Product Board, irradiation of raw fish and raw, uncooked fishery products should never be done as these products are always cooked, or at least sufficiently heated, by the final consumer or caterer. Cold water shrimps like crangon crangon should also not be included on a positive list.

Health risks of eating irradiated food

Food irradiation can destroy essential vitamins in food. This damage is increased by the longer storage times of irradiated foods, and by cooking. This is not in the interest of consumers, and could be particularly harmful for impoverished nations or sections of society already struggling to obtain adequate nutrition, such as the elderly, the young, the sick and the poor.

Irradiation also creates radiolytic by-products in food, some of which have known or suspected carcinogenic and mutagenic properties. Considerable controversy remains over the health impacts of eating these chemicals, and over the amount and quality of research so far undertaken to study them. In the words of the Italian Consumer Movement, 'there are good grounds for asserting the principle of precaution, until medium and long-term tests on superior mammals are made compulsory, before putting products on the market'.

Food irradiation does not inactivate dangerous toxins which have already been produced by bacteria prior to irradiation. In some cases, such as *C. botulinum*, it is the toxin produced by the bacteria, rather than the bacteria themselves, which cause sickness. In addition, bacterial spores, viruses and the BSE prion survive the doses used to irradiate food, therefore simply destroying the bacteria does not guarantee that the food is safe.

Handling food safely after irradiation

Irradiation of food only kills off the bacteria present at the time of irradiation. It does not prevent recontamination after irradiation. A few bacteria also survive in a food after irradiation. These can reproduce quickly if the food is not handled and stored correctly after treatment. In addition an irradiated food must be handled with extra care to avoid cross-contamination. The near sterile surface of an irradiated food such as meat is ideal for dangerous bacteria from another source to gain a foothold and quickly multiply. Irradiation also kills off those bacteria that give warning smells when a product is going bad, making it harder for consumers to detect when their food is unfit for consumption. In BEUC's view, irradiating mechanically recovered chicken meat, offal and egg white would 'probably give the consumer the impression that the product is safer, so there is a risk that they will fail to take necessary measures to prevent cross-contamination'.

Increased shelf life - a benefit for consumers?

Euro Coop commented 'extended shelf life of food products is not in the interest of the consumer, but always in the producer's interest'. There are similar concerns over the appropriateness of using irradiation to delay sprouting and ripening. The Association of German Food Traders pointed out that 'Sprouting and ripening are natural processes that allow the consumer to judge the age and freshness of products. Through irradiation consumers might be misled'.

Worker and environmental hazards

Use of radioactive materials for irradiating foodstuffs involves serious risks. Workers can suffer accidental exposure, while radioactive spills and leaks from plants and during transportation of radioactive materials put the environment and human populations at risk through contamination of groundwater and food chains. Several such accidents, some involving worker fatalities, have occurred in recent years in the US, Hawaii, Italy, Norway, Mexico, Brazil, El Salvador and Australia.

As well as the direct risks of contamination, food irradiation supports the trend towards centralised mass production and distribution of foods worldwide. Prolonged shelf life allows the transportation of foods over greater distances contributing to increased fuel consumption and air pollution, socio-economic decline among small-scale local farmers, and loss of wildlife habitats to industrial farming and road construction.

Security risks

It has been reported that around 200 losses and thefts of radioactive materials occur each year. Recent events in the US have raised concerns over the potential for terrorists to obtain such materials for use in 'dirty bombs' - conventional bombs containing radioactive materials. Building more plants that hold radioactive materials means more security risks for everyone. Improvements to security are now essential, yet these will increase the maintenance costs of irradiation facilities, meaning higher prices for irradiated foods - not a benefit for consumers.

Illegal Irradiation in Europe

The EC Directives require all foods, or listed ingredients of foods, which have been irradiated, to be labelled with the words 'irradiated' or 'treated with ionising radiation'. Irradiated foods traded within the EU must only have been treated at EC authorised irradiation facilities, and so far no facilities outside the EU have received this EC authorisation. All these measures within the Directives aim to ensure that consumers are protected.

However, at the 2001 Annual Conference of the Association of UK Port Health Authorities, a paper on food irradiation was presented. A straw poll was taken of the audience which consisted of port health officers and others in similar positions. The outcome of the poll demonstrated an overwhelming majority against the further use of the technology, even if controls are in place.

The doubts of the UK Port Health Authorities over whether food irradiation can be effectively controlled were confirmed by the recent findings of the UK Food Standards Agency. In June 2002 a Food Standards Agency survey revealed that illegally irradiated, unlabelled herbal supplements, seafoods and spices were being sold to UK consumers. This showed that, despite the availability of tests for detecting irradiated foods, enforcement of food irradiation regulations

remains difficult. When illegally irradiated foods are sold, consumers are exposed to potential health risks. In addition, consumers are misled and lose their legitimate right to know how their food has been processed.

The survey findings shocked the public, especially because food manufacturers and retailers in the UK claim they do not sell irradiated foods or food ingredients. The major UK supermarkets control approximately 60-70% of the UK grocery market. The Food Commission's surveys of 1993, 1995 and 2002 revealed that none of the major UK supermarkets had any plans to stock irradiated foods, and that this was because consumers do not want to buy them. UK supermarkets have also stated that they are taking steps to avoid unknowingly stocking irradiated foods.

Some of the products identified in the UK survey were soon after found on sale in Denmark, but the Danish Government said they had no plans to conduct an irradiation survey. This demonstrates a serious problem within the existing irradiation regulations. As there is no requirement by the irradiation Directives for Member States to conduct regular irradiation detection surveys, unlabelled, illegally irradiated food could be on sale but undetected in every EU country.

Conclusions

The decision to be taken by the EU over whether to allow more foods to be irradiated has serious implications for hundreds of millions of people. This technology poses many risks and has little support among consumers, the food industry and many national governments. If the EC allows increasing use of food irradiation across Europe, there is likely to be widespread opposition. Those who are concerned about this technology should tell their national representatives and their MEPs, and decision-makers should recognise these legitimate concerns by opposing the addition of any more foods to the list.

Abbreviations:

HACCP: Hazard Analysis Critical Control Point
Gray: irradiation dose unit kGy: kiloGray (1000 Gray)
10 kGy: equivalent to about 330 million chest x-rays

The Food Irradiation Campaign (FIC) works to raise awareness of, and co-ordinate international action in response to, the mounting pressure to make this a commonplace food technology.

To be kept updated on this issue contact Merav Shub, FIC Network Co-ordinator, on +44 (0) 20 7837 9229 or email irradiation@foodcomm.org.uk.

GOOD FOOD DOES NOT NEED IRRADIATING

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