



**Dietary Herbal Supplements Survey
for Irradiated Ingredients
2008**

October 2008

SUMMARY

The FSAI has recently carried out a targeted survey of dietary herbal supplements, many of which had previously been shown to be either “irradiated” or contain an “irradiated component”, and which were on the EU market without authorisation or the necessary labelling. A total of 50 products were purchased in a number of retail outlets in Dublin and forwarded to the Public Analyst Laboratory in Cork for analysis. Using the photostimulated luminescence (PSL) screening method, seven products were identified as possibly having been irradiated. These samples were forwarded to a commercial laboratory for more definitive testing using the thermoluminescence (TL) method, but none were found to have been irradiated.

BACKGROUND

Food irradiation is a process in which food is exposed to defined levels of ionising radiation from electronic or radioactive sources. The process can be safely used to reduce the number of spoilage or pathogenic microorganisms, inactivate pests and delay or prevent natural processes such ripening, sprouting or germination that may affect the quality of a food.

Previous surveys carried out by the FSAI, and authorities in other EU Member States, detected a significant proportion of dietary herbal supplements that had been irradiated but were not labelled as required by EU legislation. The issue was brought to the attention of the industry which has subsequently put considerable effort into identifying and rectifying the source of the problem. This survey was intended to gauge the effectiveness of industry efforts to tackle this problem.

Previous Surveys

As a result of a Commission request for information in 2002, four Member States including Ireland, the United Kingdom, Germany and the Netherlands discovered that a combined average of approximately 25% of the dietary herbal supplements tested were irradiated but not appropriately labelled within their jurisdictions. Three out of 17 samples tested in Germany (18%), 31 out of 124 (25%) in the Netherlands, six out of 25 (24%) in the UK and 10 out of 24 (42%) in Ireland had been irradiated or contained an irradiated component.

In 2003, the FSAI tested a further 26 dietary herbal supplements to find that 13 (50%) were irradiated or contained irradiated ingredients and not labelled. Other Member States including Denmark (15 out of 106 – 14%), Germany (8 out of 86 – 9%) and the UK (29 out of 64 – 45%) identified dietary herbal supplements that were “irradiated” or contained an “irradiated component”.

In 2005, the FSAI tested 20 samples of dietary herbal supplements, some of which had previously been found to be irradiated or contain irradiated ingredients. Though not labelled, 18 out of the 20 samples (90%) were still found to have been irradiated.

EU LEGISLATION GOVERNING FOOD IRRADIATION

Food or food ingredients may be irradiated in the EU only if the following criteria are met; (a) there is a reasonable technological need, (b) it does not present a health hazard, (c) it is of benefit to consumers and (d) it is not used as a substitute for hygiene or health practices or for good manufacturing or agricultural practice.

Two Directives govern the irradiation of foods and their sale within the EU: the Framework Directive (1999/2/EC) and the Implementing Directive (1999/3/EC). These were transposed into Irish law by Statutory Instrument number 297 of 2000.

The Framework Directive covers general and technical aspects for carrying out the irradiation process, conditions for authorising food irradiation, exemptions, and labelling requirements of irradiated foods. Facilities that irradiate food destined for the EU market must be recognised by the European Commission and must comply with conditions set out in the Framework Directive.

The Implementing Directive establishes a list of foods and food ingredients that are authorised within the EU for treatment with ionising radiation. Currently, only dried aromatic herbs, spices and vegetable seasonings are listed, with a maximum overall average absorbed dose of 10 kGy permitted. Until the EU list is finalised, Member States may continue to irradiate those foods with national authorisations and may also maintain any existing national restrictions or bans on irradiated foods. To date, irradiated dietary supplements, individually or as a food category, are not included in any national authorisation list and therefore are not authorised for marketing within the EU.

SAMPLING AND ANALYSIS

A total of 50 dietary herbal supplements were purchased “off the shelf” in Dublin during July of 2008, including as many as possible of those products found to be irradiated in previous surveys. Samples were sent to the Public Analyst Laboratory in Cork for analysis using the photostimulated luminescence (PSL) screening method (EN 13751:2002). Of the 50 samples tested, seven were identified as potentially positive and were forwarded to a commercial facility for analysis by the more definitive thermoluminescence (TL) method (EN 1788:2001).

RESULTS

While PSL analysis identified seven products as potentially having been irradiated, subsequent TL analysis confirmed that none of the samples were irradiated. The list of products and brand names sampled are provided in Table 1.

Table 1.

Brand	Product	Product Description
Be Healthy	Propolis	High potency lozenges
Good 'n Natural	Milk thistle	Natural Silymarin capsules
Good 'n Natural	Saw Palmetto	Capsules
Good 'n Natural	Dong Quai	Capsules
Good 'n Natural	Echinacea	Capsules
Solgar	Ginger root	Zingiber officinale Capsules
Solgar	Devil's claw root extract	Capsules
Herbal Classics	Echinacea	Cold relief chewable tablets
Holland & Barrett	Unique garlic - Higher strength	Enteric coated tablets
Holland & Barrett	Chondroitin/Glucosamine	High strength tablets
Solgar	Feverfew leaf extract	Capsules
Solgar	Valerian root extract	Capsules
Quest	Kyolic Garlic 1000	Odourless tablets
Solgar	Butchers broom & rosemary oil	Capsules
Red Kooga	Korean ginseng	Tablets
Good 'n Natural	Raspberry leaves	Capsules
Cynara	Artichoke	Capsules
Cynara	Turmeric	Tablets
MedicHerb	Flexiherb - Devils claw	Tablets
Healthcrafts	Echinacea extract	Citrus flavoured tablets
Aloe pura	Aloe vera	Super strength tablets
FSC	Siberian ginseng	Capsules
Beeline	Echinacea + zinc	Citrus flavoured tablets
Tesco	Pomegranate	Tablets
Greenline	Amazonian Guarana	Capsules
Seven Seas	Korean ginseng	Capsules
Greenline	Glucosamine with organic marine mineral	Tablets
Sona	Black cohosh	Capsules
New Nordic	Frutin - natural minerals, micronized fruit fibres and peppermint oil	Chewable tablets
Holland & Barrett	Bee propolis	High strength capsules
Sona	Green Tea - organically grown	Capsules
MedicHerb UK	Pelargonium	Tablets
Good 'n Natural	Green tea extract	Capsules
Potters	Boldex	Tablets
Holland & Barrett	Manchurian ginseng	Capsules
Floressance	Green coffee	Capsules
Jan de Vris	Concentration Essence	Tincture
Bional	Butchers broom, horse chestnut, vine leaf	Capsules
Vertese	Evening primrose oil	High strength capsules
Soha	Super evening primrose oil	Capsule
A.vogel	Echinacea junior	Chewable tincture tablets
A.vogel	Aesculus horse chestnut	Fresh herb tincture tablets
Herbal Laboratories	Feverfew tanacet	Tablets
A.vogel	Agnus castus, chaste tree	Herbal tincture
Boots	Concentrated garlic	Tablets
Patrick Holford	Immune - VitC, black elderberry, bilberry, ginger & zinc	Tablets
Nourish	Spirulina	Tablets
Viridian	Green tea	Capsules
Micro Organics	Hawaiian Pacifica Spirulina	Tablets
Synergy Natural	Organic spirulina	Tablets

CONCLUSIONS

Each year a small percentage of the food products checked in Ireland are found to be irradiated but not labelled appropriately. While there was no immediate danger to public health as a result of the presence on the Irish market of unlabelled, irradiated dietary herbal supplements, the scale of the problem in Ireland and other EU Member States was a concern and justified the concerted action taken. The relevant section of the food industry was cooperative at all times and the results of this survey indicate that their efforts were eventually successful. It is now imperative that the industry remains vigilant when purchasing food ingredients from third country sources so that this type and scale of problem is avoided in the future.

Reports of previous FSAI surveys on dietary herbal supplements, along with an information document on food irradiation can be found on the FSAI website:
http://www.fsai.ie/surveillance/food_safety/irradiated/index.asp

FURTHER INFORMATION

Further information on this survey can be obtained from:

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