

Evaluation of EU-legislation on food irradiation



Food irradiation

- 3 different techniques
 - **γ Rays** (emitted from radioactive Cobalt isotope) & **X Rays**
 - **Electron beam**
- Principle: waves/particles pass through food, collide with other particles, creating short lived radicals:
 - **Modification of some food constituents**
 - **Generation of new stable chemical products**
 - **Inactivation of microorganisms due to cell damage (often genetic material damage)**

Food irradiation

- Uses of food irradiation:
 - **Prevent germination & sprouting** (potatoes)
 - **Slow down ripening/ageing** (fruit & vegetables)
 - **Extend shelf life** (meat, poultry, seafood)
 - **Destroy micro-organisms, bacteria or insects** (phytosanitary benefit for instance)
- Advantages: low heat generation (food is still “raw”), treatment applicable after packaging
- Not all foods are appropriate for irradiation

EU Legal framework

*Directives **1999/2/EC** & **1999/3/EC***

- **Approval** of facilities, **Labelling** of irradiated food
- **Trade:** MS may restrict or ban irradiated foodstuffs from other MS ; import only from EU-approved facilities
- **Monitoring:** Official controls and annual reports
- Lists of **authorised foodstuffs**
 - **EU-Level:** only 1 foodstuff authorised “Dried aromatic herbs, spices and vegetable seasoning”
 - **MS-Level:** national lists in 6 MS

BE, CZ, FR, IT, NL, PL (+ UK)

List of national authorisations

(latest update: 2009)

CZ **BE** **FR** **NL** **IT** **PL** **UK**

Onions & Garlic

Potatoes

Poultry meat

Cereals

Egg white

Frozen frog legs

Schrimps

Dried vegetables and fruits

Gum Arabic

Deep frozen aromatic herbs

Rice flour

Casein, caseinates

Dehydrated blood & plasma

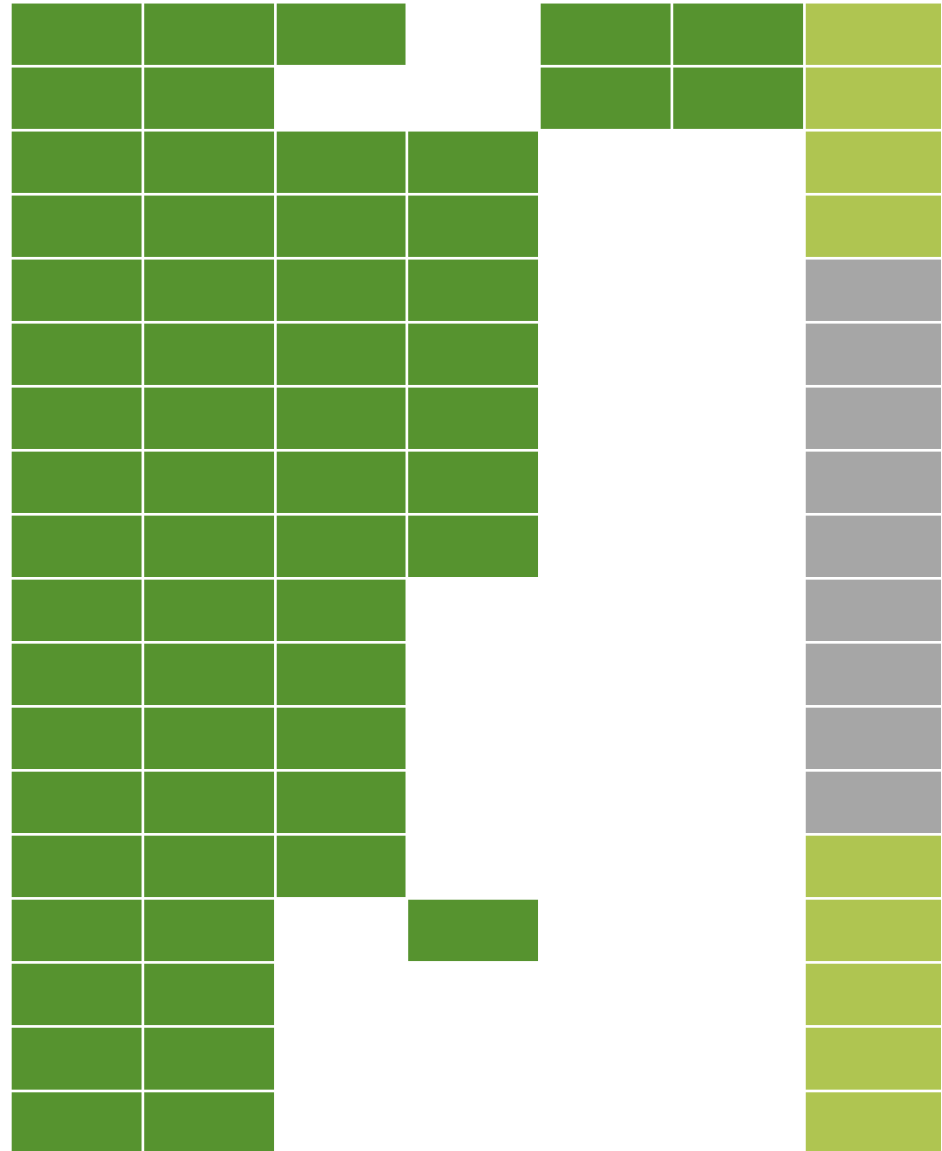
Shallots

Pulses

Vegetables

Fruit (incl. fungi, tomato, rhubarb)

Fish and shellfish

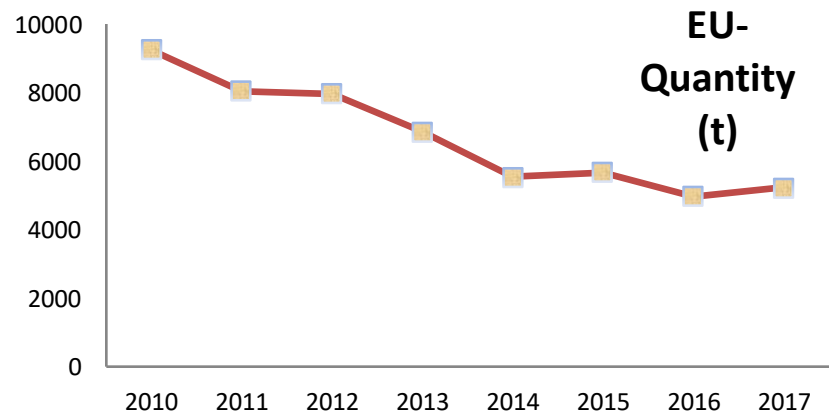


State of play

- Products being irradiated:
 - **Frogs' legs** **57%**
 - **Dried aromatic herbs & spices** **21%**
 - **Poultry meat** **16%**
- **Belgium** (70%) and **Netherlands** (10%)
- Among MS (incl. UK) : 14 equipped, 10 irradiating, 24 approved facilities
- Official checks (marketing stage): 10,000 samples, 87 non compliant (~0.8%)

State of play

- **EU:** 6,000 tons/y
Decreasing (40% since 2010)
- **World:** >700,000 tons/y
Quickly growing



- Consumer negative perception. Concerns include:
 - **Excessive denaturation of nutrients**
 - **Generation of toxic substances**
 - **Food becoming radioactive**

Evaluation of legislation on food irradiation

- Framework: Better Regulation Policy
- Evaluation of objectives of the directives
- Basis to identify need for changes to legislation
- **Study** to support the evaluation (2018 – 2020)

External, independent, evidence-based study

- **5 Case studies** (interviews with industry, competent authorities and experts from MS & USA)
- **3 Surveys** (NCA, Industry, FBO) & **10 interviews**
- **Open Public Consultation** (ongoing)



European
Commission

Preliminary findings intermediate report (Nov 2019)

Preliminary findings: **Relevance**

- Irradiation can contribute to microbiological food safety
- Some uncertainties on toxicological safety remain
- For some products (herbs & frog legs), irradiation is considered best available treatment to ensure food safety.
- Relevance for phytosanitary imports:
 - Alternative to pesticides in post-harvest treatments
 - No significant impact on nutritional quality of fruits.
 - Most irradiated fruits (mango, dragon fruit, guava) are peeled before consumption

Preliminary findings: Effectiveness

Directives' objectives	Result
Establishing a EU harmonised positive list for the irradiation of food products	Not met
Harmonising controls and approvals of facilities (in EU and TC)	Met
Harmonising controls and enforcement	Partially met
Providing information to consumers	Partially met

Preliminary findings: **Efficiency**

Benefits of EU legislation

Cannot be ascertained :

- multiplicity of factors contributing to food hygiene;
- lack of data ;
- limited use of food irradiation in the EU
- food products associated with foodborne disease: not irradiated in the EU

Costs of EU legislation

- **Irradiation industry:** authorisation procedure, inspections, reporting food irradiation activity to the NCA
 - **FBOs:** labelling
 - **Environment:** energy use & transportation of goods to and from facilities
 - **NCA:** monitoring, annual reports

Preliminary findings: EU added value

- Harmonisation of **labelling requirements** led to consistent approach for businesses and to consumer information in EU
- Common approach towards **food irradiated in third countries**: important since use of food irradiation is growing in TC
- Discrepancies between national legislations regarding **irradiation techniques** and **lists of authorised foodstuffs**

Next steps

- COVID-19 delay
 - **OPC: extended until 6th June**
 - **2nd workshop (July): postponed or online**
- Reflection by stakeholders on the final findings
- Conclusion of the Study due before Dec. 2020
- Report for action will be drawn by SANTE Food Hygiene unit based on the conclusions of the study



European
Commission



Thank you

