FOOD IRRADIATION within the EU

The EU Legislation and results of monitoring in the EU

Dr S.COULON – DG Health and Food Safety - Unit G4 (Food/Alert system and training)

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Health and Consumers

Food Irradiation – Content

- Introduction
- EU Legislation:
  - Framework Directive
  - Implementing Directive
- Results of Monitoring in 2012/2013
- Future steps

1.Introduction – Definition

- High energy ionising radiation
  - ^{60}Co or ^{137}Cs
  - X-rays < 5 MeV
  - Electrons < 10 MeV
- Out of scope
  - Other sources of irradiation (UV radiation or other ionising radiation)
  - Control of radioactivity of food (e.g. monitoring after Chernobyl nuclear accident)

1.Introduction – Purpose

- Physical treatment of food
- Purpose
  - To prolong shelf life of food products
  - To reduce health hazards due to the presence of pathogenic micro-organisms

1.Introduction – Examples

- Prevention of germination and sprouting
- Disinfestation by killing or sterilising insects
- Retardation of ripening and ageing of fruit and vegetables
- Prolongation of the shelf life and prevention of food-borne diseases
- Reduction of micro-organisms in spices and herbs

2.EU legislation

- 2.1Framework Directive 1999/2/EC
  - Definitions, conditions, responsibilities, labelling, reporting, calculation of dose
- 2.2 Implementing Directive 1999/3/EC
  - Community list

2.1.Framework Directive: 99/2

- General & technical aspects for carrying out the process
- Conditions for authorising food irradiation
- Labelling of irradiated foodstuffs
- Reporting

2.1.1. General & technical aspects

- Reasonable technological need, no health hazard, benefit to consumers, no substitute for hygiene, health… practices
- Code of Practice for the Operation of Irradiation Facilities used for the Treatment of Foods (Joint FAO/WHO)
- Use of dosimetry & Overall average absorbed dose

2.1.1 Examples of Technological needs

- to reduce incidence of foodborne disease by destroying pathogens.
- to reduce spoilage of foodstuffs by retarding or arresting decay processes and destroying spoilage organisms.
- to reduce loss of foodstuffs by premature ripening, germination and sprouting.
- to rid foodstuffs of organisms harmful to plant or plant products.

2.1.2. Conditions for authorising

- Mix of Community & national provisions
- Transitional situation aiming at full harmonisation
  - Approval of irradiation facilities
  - Community list of foodstuffs

2.1.2 a)Community provisions

- Aim at harmonisation
- Approved facilities
  - MS facilities by MSs, Third countries facilities by Commission
  - Same conditions apply to both
- Community list of foodstuffs
  - Positive list including max. doses
  - To be established in stages
  - To be fixed in Implementing Directive

2.1.2 b) National provisions

- "Freeze" 1999 situation
- Until establishment of Community list, MS can
  - Maintain existing national authorisations (if evaluated)
  - New authorisation only if they already exist in another MS
  - Maintain existing national restrictions or bans

2.1.3 Labelling

- Always obligatory
- Both for sold as items & in bulk
- Regardless of destination (intended for the ultimate consumer, mass caterers or other actors in the food chain) and origin (MS or 3C)
- « irradiated » or « treated with ionising radiation »
- Ingredients to be labelled as such regardless of quantity

2.1.4 MS Reporting

- MS inform Commission on
  - Competent authorities
    - For facilities
    - For control at product marketing stage
  - Yearly report of
    - Checks in irradiation facilities
    - Checks at product marketing stage

2.1.4. Commission Reporting

- Commission publishes
  - Details of facilities
    - Ad hoc (new and changes)
  - Report based on MS information/data
    - On yearly basis
    - New data base on line since 2013

2.2. The Implementing Directive

- Existing national authorisations:
  BE/CZ/FR/IT/NL/PL/UK
- Scientific advice (EFSA) requested
- Current Community list :one entry

2.2. Current European Legislation (applies to all Member States)

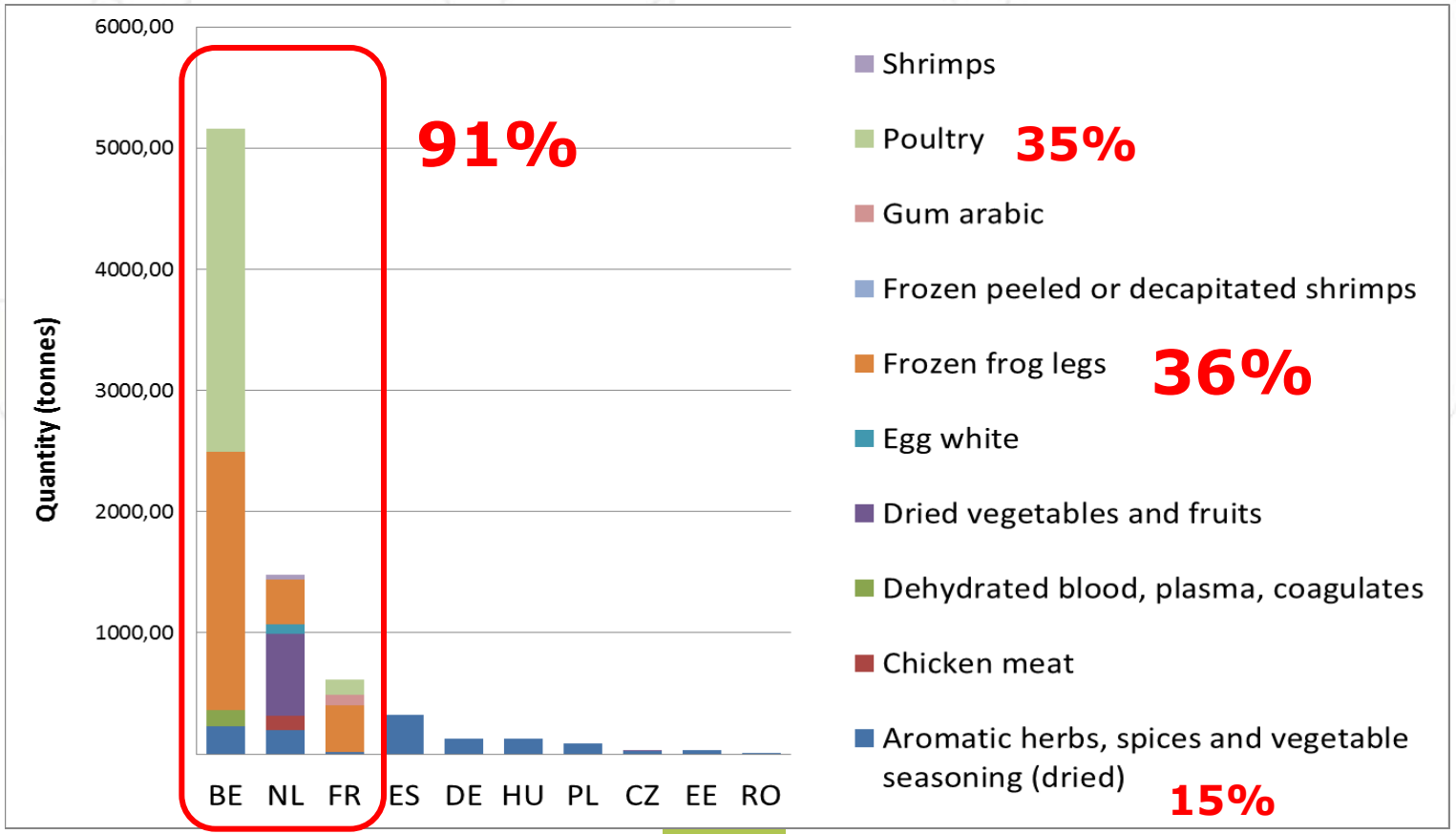
Category of Foodstuff	Max. overall average dose (kGy)
Dried aromatic herbs, spices & vegetable seasonings	**10**

Source: Official Journal of the European Communities

3.Monitoring in the EU

Results of checks in 2012 and in 2013

3.1.Results of checks carried out in irradiation facilities- Total quantity: 7.972 tonnes in 2012



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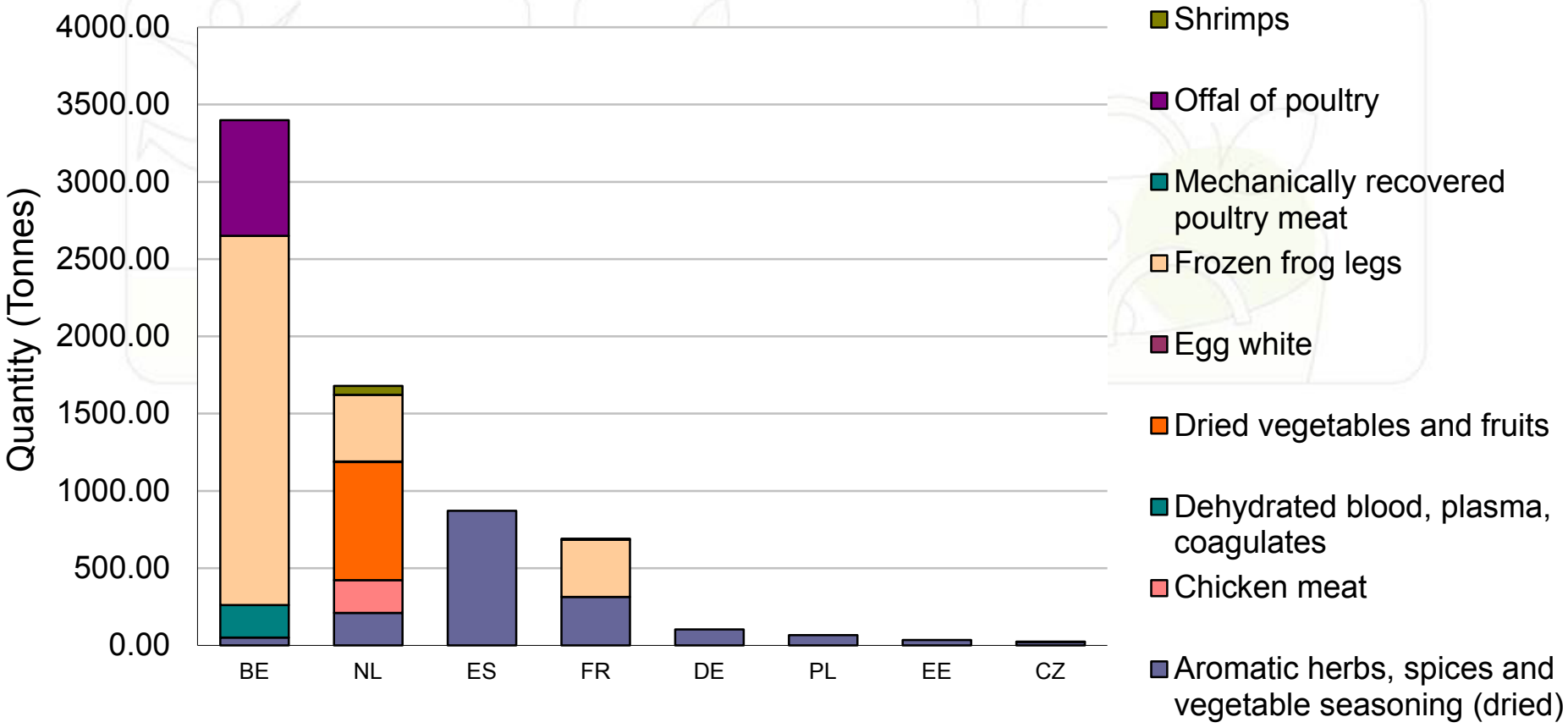
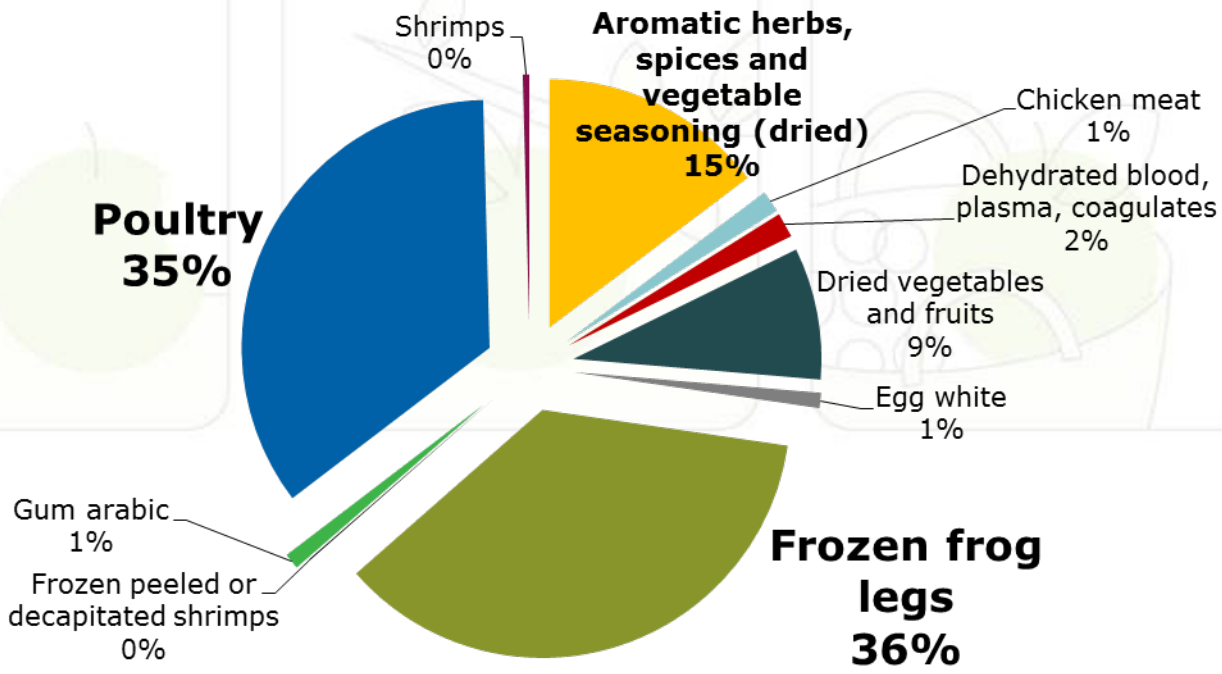
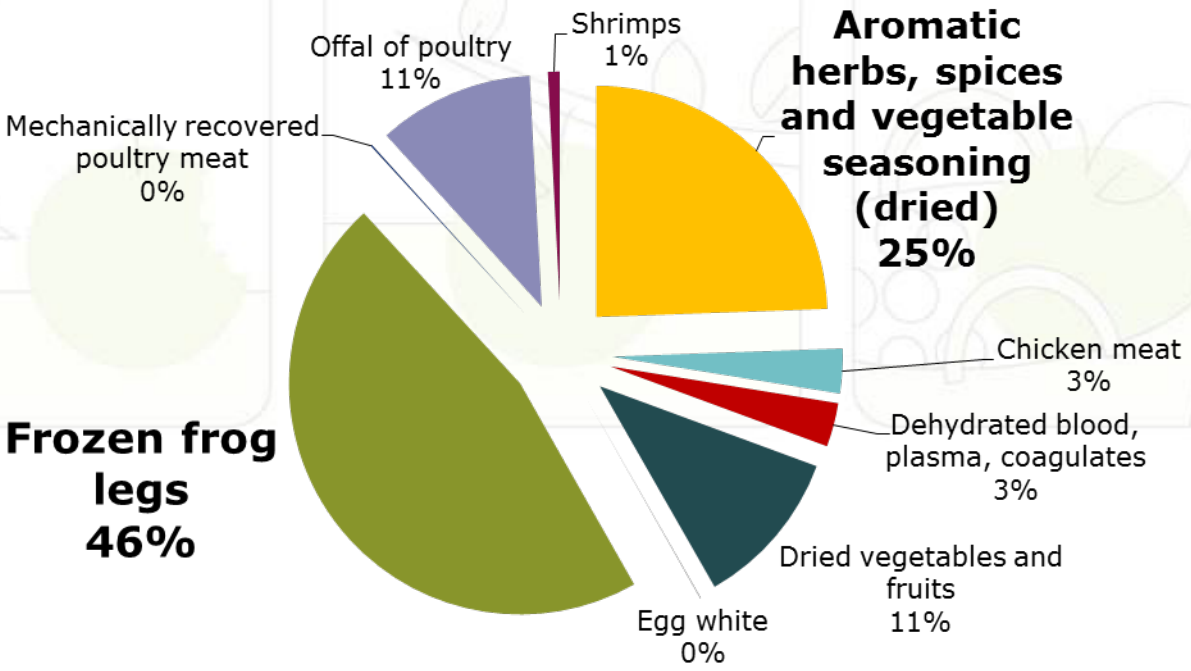
3.2.Results of checks carried out in irradiation facilities - Total quantity: 6.870 tonnes in 2013



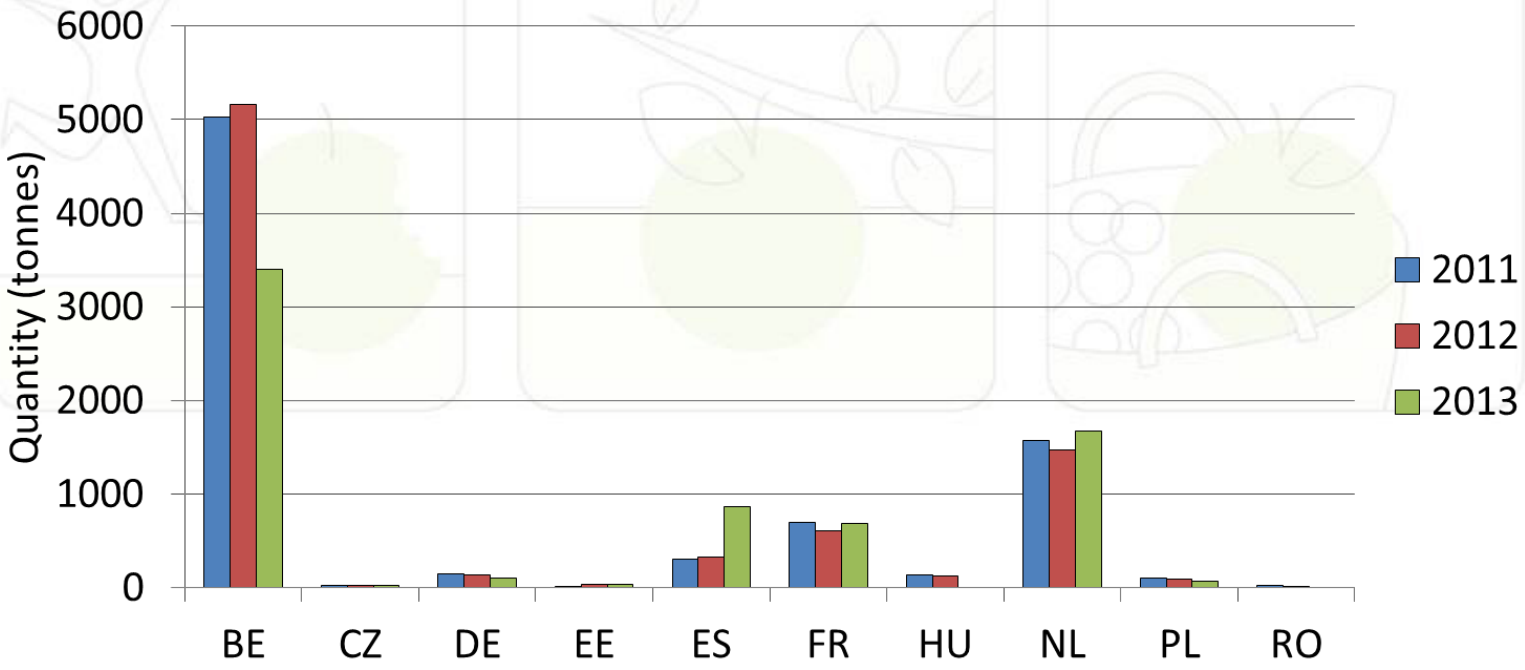
3.3. **YEAR 2012** - Percentages of foodstuffs irradiated



3.4. **YEAR 2013** - Percentages of foodstuffs irradiated



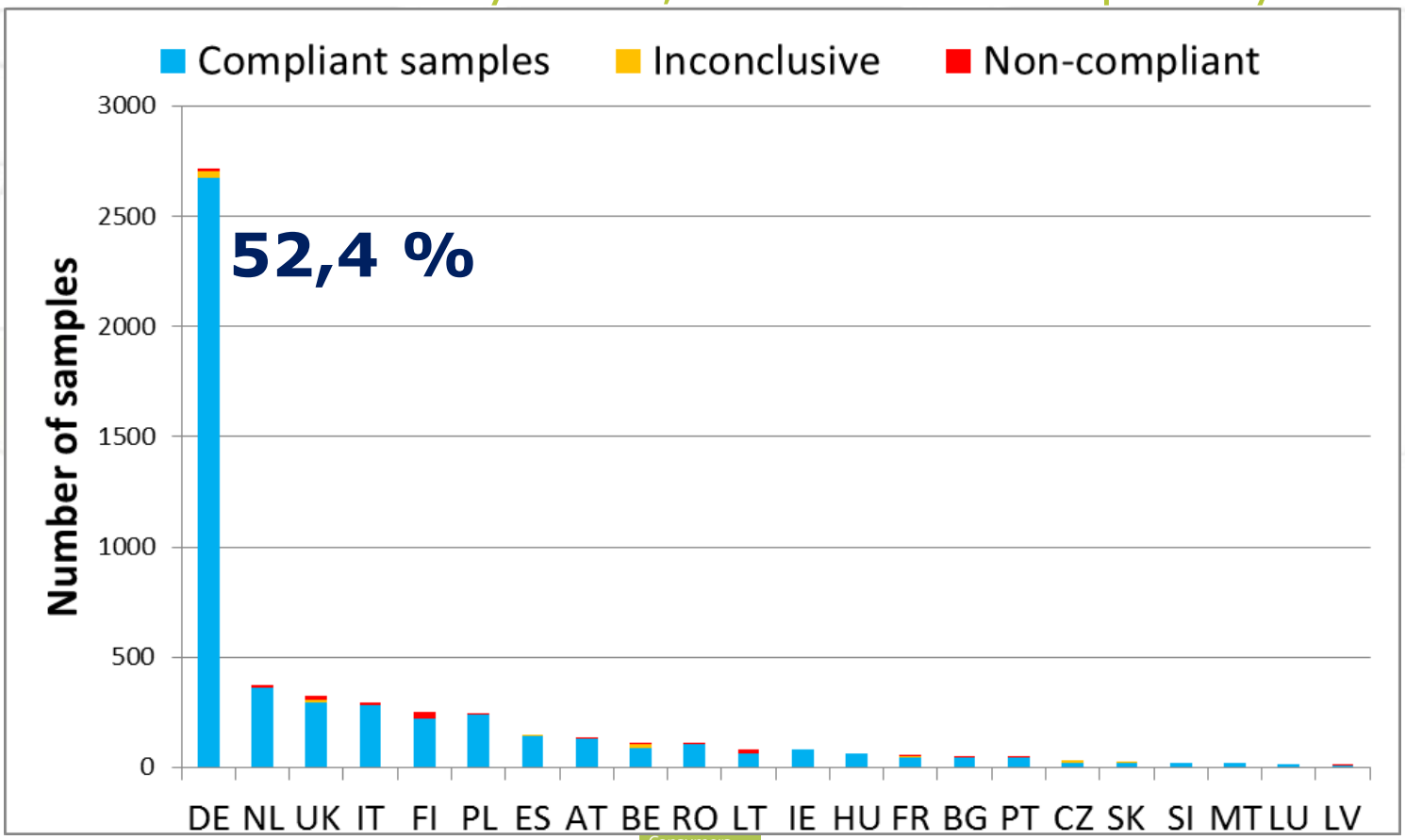
3.5.Foodstuffs irradiated in 2011, 2012 and 2013



- YEAR 2012 -

3.6. Results of checks carried out at **product marketing stage**

No Checks Performed by 5 MS; 5.182 total samples by 22 MS



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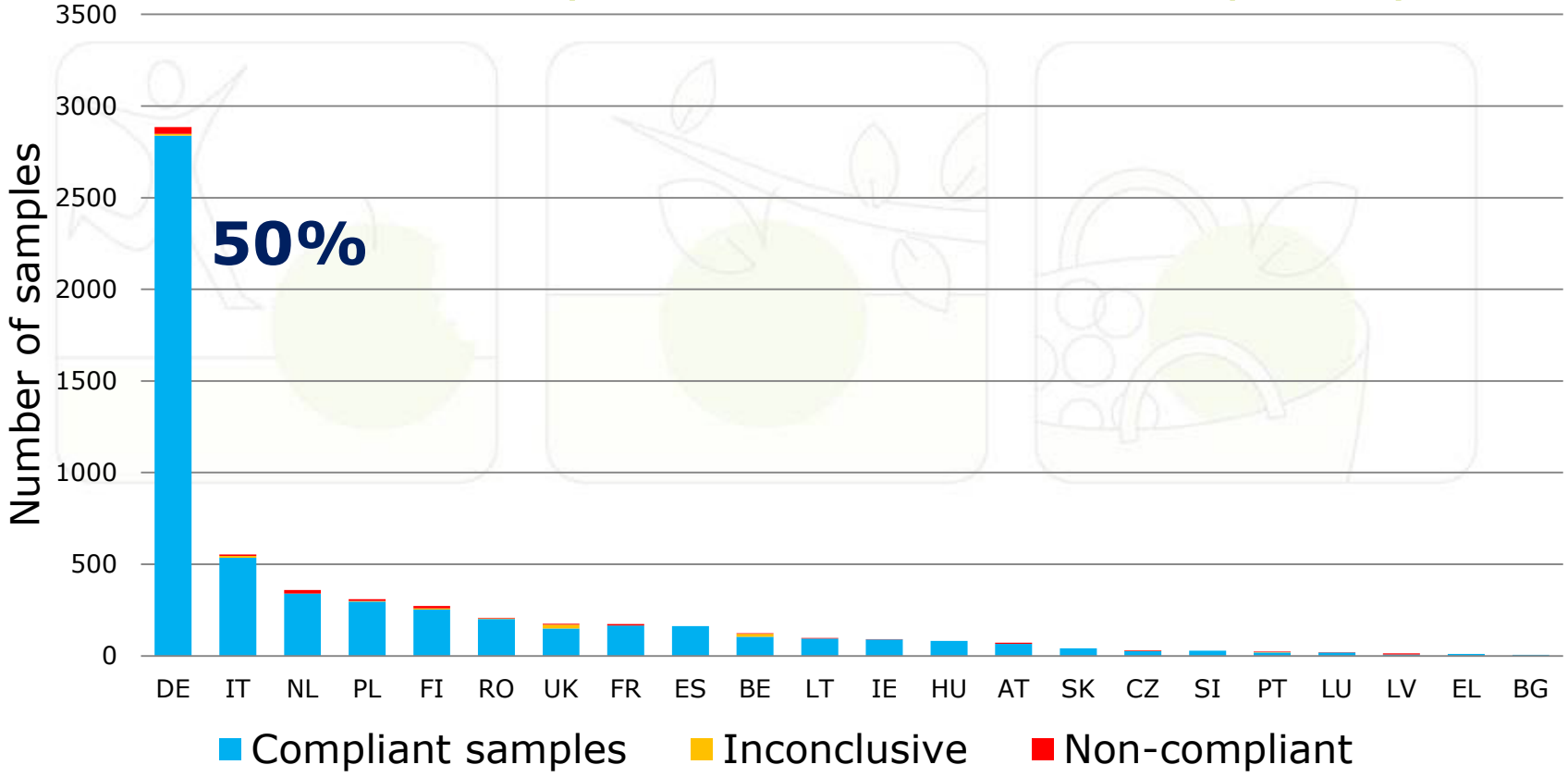
- YEAR 2013 -

3.7.Results of checks carried out at **product marketing stage**

No Checks Performed by 4 MS; 5.617 total samples by 20 MS



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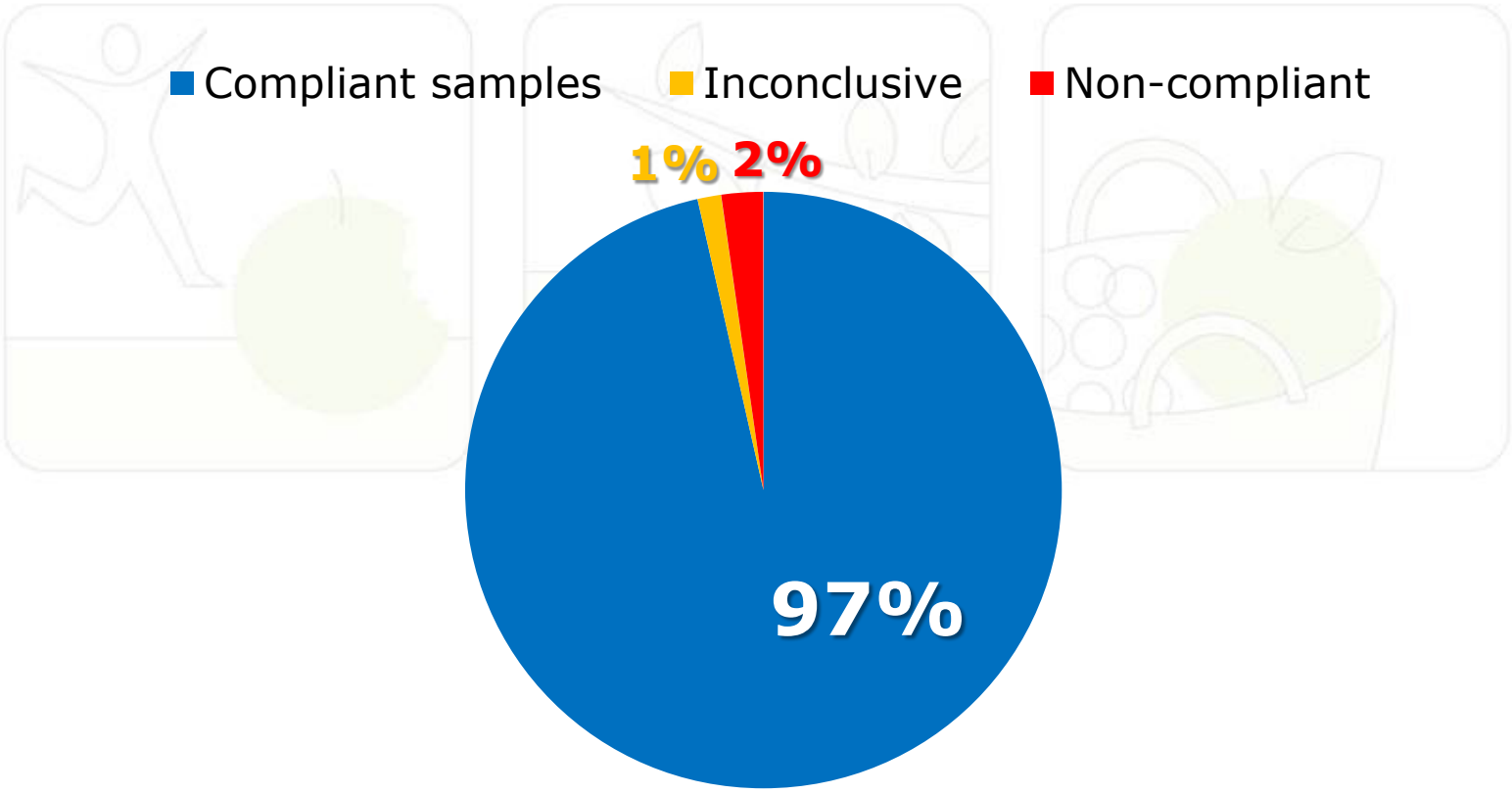
3.8.Results of checks carried out at product marketing stage



4. Future steps

- Evaluation by EFSA finalised in 2010
- Consumers: Concerns in the technology
- Industry (FBO): little enthusiasm
- Ongoing reflections (annual report, directives revision…)

4.1 EFSA Opinions

- Scientific Opinion on the efficacy and microbiological safety of irradiation of food -EFSA Panel on Biological Hazards (BIOHAZ) adopted on 22 September 2010

⇨ "*Potential microbiological risks linked to food irradiation are reviewed and the Opinion confirms that there are no microbiological risks for the consumer linked to the use of food irradiation and its consequences on the food microflora*"

4.2 EFSA Opinions

- Scientific Opinion on the Chemical Safety of Irradiation of Food (1) adopted on 25 November 2010

⇨*Considering that only a very limited quantity of food is irradiated in Europe currently, the Panel is of the view that there is not an immediate cause for concern. However, the relevance of the cats studies for human health should be clarified.*

4.3 EFSA Opinions (summary)

- Statement summarising the Conclusions and Recommendations from the 2 Opinions on the Efficacy/microbiological Safety and chemical Safety of Irradiation of Food

➢ *irradiation should be considered as one of several approaches to reducing pathogens in food. Food irradiation should only be used in conjunction with an integrated food safety management program.*

➢ *it is considered that the limits should be expressed as maximum dose.*

➢ *the application of food irradiation should be based on risk assessment and on the desired risk reduction rather than on predefined food classes/commodities and doses.*

➢ *to collect information on the cause and pathogenesis in cats, including data on the relationship between irradiation dose, composition of feed, the amount of consumed irradiated feed and the elicitation of the leukoencephalomyelopathy*

Conclusions

- Legislation is in place to permit limited food irradiation within the EU.
- Still national Legislation in place.
- Irradiated foods are not widely available
- Still appears to be much consumer resistance to the technology

Thank you very much for your attention

Food-Irradiation@ec.europa.eu

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