

# High Pressure Processing and other new/emerging food technologies

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# The Food and Veterinary Office (1)

- DG(SANTE)
- Directorate F Food and Veterinary Office (FVO)
- Compliance with the EU legislation in the animal health, food safety, animal welfare, plant health fields



# The Food and Veterinary Office (2)

- On the spot audits
- EU MS and other countries
- Desk based duties
- Projects
  - > HPP project



# New/emerging technologies

- High Pressure Processing (HPP)
- Pulsed Electric Field (PEF)
- Ozone treatment
- Membrane filtration
- UV liquid pasteurisation
- Ultrasounds
- Other?

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# Other new technologies

- Cold plasma
- Pulse Light
- Membrane fluids concentration
- Photosensitisation
- Nanotechnologies
- Other



# **High Pressure Processing (HPP)**

- Pascalisation
- Bridgmanization
- Cold pasteurisation
- Cold pressing
- High hydrostatic pressure
- Other?



#### **HPP** – what it is and how it works?

- High Pressure
  - > Approx. 200-800 Mpa/2000-8000bars
- Processing
  - Pressure applied to foodstuffs
  - Water media
  - Packed/unpacked foodstuffs
  - > Time



#### Purpose of the presentation

Introduction to the FVO "project" on HPP

Introduction to industry stakeholders consultation



# **HPP Project rationale (1)**

- HPP
  - Emerging technology, increasingly applied
    - for different types of foodstuffs
    - > in EU Member States and other countries
  - Lack of a complete picture



# **HPP Project rationale (2)**

- Complete the picture
  - Full applicability and extent of HPP use?
  - Benefits and implications?
  - MS implementation of the legislation?
  - EFSA consultation?



#### **Project objective**

- To provide/obtain an overview of
  - the use of HPP by the food industry in the EU
  - Benefits and implications associated with HPP
  - The FBO's and CAs controls to guarantee/ensure that the use does not pose a food safety risk

The data gathered may be used as basis for future policy considerations and/or to develop guidance documentation.

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# **Project methodology**

- Desk study
  - Information gathering
  - Questionnaire to MS competent authorities
  - Consultation with industry stakeholders
- Fact finding missions
- Overview report



# **HPP** food industry - worldwide

- Growing industry approx.15 years of known use by food industry
- 2014 estimated HPP food production: 500.000 tonnes
- Limited equipment producers
- Limited equipment capacity batch /semi-continuous max 300 kg/batch max 10 batch/h
- Limited users? "Niche"



#### **HPP - EU food industry**

- Less than 25% of the HPP world market rough estimation
- Food producing establishments different EU MS
- Service providers tolling centres



#### **Process validation**

- Matrix pressure holding time combinations!!!
- Matrix characteristics (e.g aw, pH)
- Demonstration of pathogen reduction
- Packaging material suitability
- Under performance/under processing
- Spores activation post-processing control
- Other Slide No. 15



#### Other areas for consideration

- Traceability
- Equipment maintenance and calibration of monitoring equipment
- Spores inactivation acid foods only
- Developments (e.g. pressure assisted thermal sterilisation PATS; modified atmosphere and HPP)



# **Questionnaire to the Competent Authorities**

- HPP uses
- CA approach in relation to HPP
- Systems in place for ensuring that new/emerging food processing technologies which may affect food safety are adequately considered during official controls



#### Questionnaire to industry stakeholders (1)

- Purpose of use benefits and implications
- Fit final products (e.g. to prolong the shelf-life);
- > Fit intermediate products/raw materials;
- ➤ Adulterated final/intermediate food (e.g. to decrease the bacterial/viral count);
- > other uses





#### Questionnaire to industry stakeholders (2)

- HPP extent of use in the EU
  - per sector (e.g. meat products, meat preparations, minced meat, MSM, fresh meat, dairy products, fresh and vegetable juices, wet salads, fishery products, etc.)
  - duration of use



#### Questionnaire to industry stakeholders (3)

HPP users

- producers of the foods;
- service providers



#### Questionnaire to industry stakeholders (4)

- Process control by food industry
  - How is the process controlled and food safety ensured?
  - Guidance available to the FBOs
  - Good practices
  - Problems encountered
  - Industry organisations

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#### Questionnaire to industry stakeholders (5)

- Labelling of HPP products
- > HPP on the label?
- > HPP not on the label, and
  - the status of the food before HPP (e.g. fresh)?
  - the status of the food after HPP (e.g. pasteurised)?
- other option

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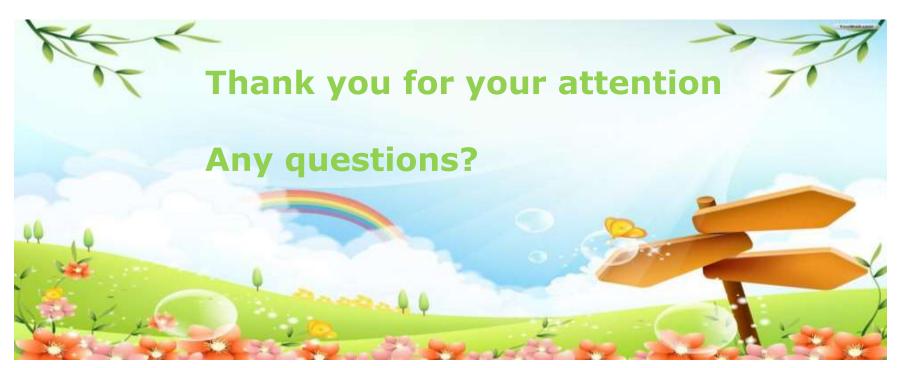


#### Questionnaire to industry stakeholders (6)

- National rules
  - suitable for the use of HPP and/or other new/emerging technologies or inhibiting their deployment in the food industry?
  - weaknesses, difficulties, strengths.
  - good practice guidance documents, official controls etc. - HPP in particular and new/emerging technologies in general Slide No. 23

Health and Food Safety





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