



High Pressure Processing and other new/emerging food technologies

Advisory Group Plenary
Meeting
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Food of animal origin - mammals**

*Health and
Food Safety*

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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?*

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.

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*

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**

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*

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**

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Thank you for your attention

Any questions?



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