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Proposition of collaboration in the field of High Pressure Food Processing – HPP

High Pressure Institute of Polish Academy of Sciences – Food Research Activity

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High pressure is an alternative to thermal processing and is known as Hyperbar Cold Pasteurisation. The resistance of micro-organisms to pressure varies considerably depending on the pressure range applied, temperature and treatment duration and type of micro-organisms and type of foods. High pressure treatment of food gives minimally transformed products and assures improved safety for consumers.

During last decade as the result of dynamic progress in food industry there are present in EU market some new HPP products. It is observed that fresh or minimally transformed products, without the addition of chemical conservants are more and more accepted by consumers.

In Poland, research of high pressure of food preservation started in the High Pressure Research Center of Polish Academy of Sciences (nowadays High Pressure Institute of PAN) in 1992. Already at the beginning, an interdisciplinary research group was created including universities and research institutes among them National Institute of Hygiene.

Research programmes concerned of HPP effect on vegetative micro-organisms and spores of chosen bacteria and moulds, selected strains of lactic acid bacteria, and pathogenic bacteria - *Yersinia* and *Listeria monocytogenes* - in meat, sliced ham and ripened cheeses. Applied research programmes included research studies on a quality and safety to the consumers of high pressure processed fruit desserts, fresh squeezed fruit and vegetable juices, cheeses and meat products.

As a result of these investigations we developed the technology of HPP treatment of :

- vacuum packed, shelf life stable, free of pathogens meat products
- low sugar fruit dessert and fruit and vegetable juices.

Development of high pressure processors for scientific and applied research in our Institute results of construction of the 2 liters volume HP chamber for applied and scientific research of commercial food samples.

The knowledge on the effects of ultra high pressure on micro-organisms occurring in food is still incomplete and there is a need for further research in this field.

We offer collaboration in the field of research on HPP food processing and HPP effects on micro-organisms and food composition. Particularly we are interested in the field of HPP treatment of cold smoked fish and fresh squeezed fruit and vegetable juices.

