Risk management of functional food

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Outline

- Introduction for functional food
- Definition
- Classification
  - Biologically active compounds found in FF
- Legislation
- Consumer needs
- Main functional foods
- Dream factory – yoghurt production
Introduction

• Nowadays the higher stress of life, the increasing number of elderly people and reduced physical activity are considered the reasons for large spread of chronic diseases (cardiovascular diseases, diabetes, cancers…).
• Consumers are interested in healthy lifestyle and healthy food.
• The interest in the food we eat has never been greater than it is today.
• Concerning the consumer’s opinion on functional foods, 47% of the respondents don’t have any opinion about the issue (T. Saron).

Definition

• Functional food
  – any fresh or processed food including probiotic food and dietary supplements claimed to have the ability beneficially influence some body functions in order to improve the state of well-being and health and/or reduce the risk of disease,
  – Claimed functional properties have to be scientifically approved.
  – (www.who.int/foodsafety/fs_management/en/probiotic_guidelines.pdf)
Biologically active compounds found in functional food

Legislation

- The EFSA regulations of European Parliament (1924/2006) have started the registration of the health claims made on foods referred either in Article 13 or Article 14.
- Nutraceutical and Functional Food Regulations in the United States and Around the World
- For supplement products, the Natural Health Products Regulations (overseen by the Natural Health Products Directorate (NHPD), part of Health Canada) have been in force since January 1 2004. They also cover herbal remedies, homeopathic and traditional medicines, probiotics, amino acids and essential fatty acids, all of which have to be issued with a license before they can be sold.
Consumers expectations

- tasty
- quality
- brand
- acceptable price
- functionality
  - benefits for health
- package
  - nutritional information (GDA)

Main groups of functional foods in Estonia, Slovenia, Turkey

- Commonly used functional ingredients:
  - probiotics, vitamins, minerals, coenzym Q10, unsaturated fatty acids omega 3, dietary fibers, L-carnitine, different fruits etc.
- Dairy products:
  - kefirs
  - yoghurt,
  - milk,
  - curd products
  - cheese
- Bakery products
  - bread with fibers
- Drinks
  - juices
  - Smoothies
  - Whey drinks
- Eggs with Omega-3 fatty acids
Dream factory – yoghurt production

DEFINITION

- Yoghurt is fermented milk product made by lactic acid fermentation.
- The responsible microorganisms for the fermentation are mainly *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, obtaining probiotic property; *Lactobacillus acidophilus* and *Bifidobacterium bifidus* can be choosen as yoghurt starter culture together with *Streptococcus thermophilus*. 
SPECIFICATION OF PRODUCT

Product is made from standarised milk containing:
- 1.6% fat
- 6% milk proteins
- 4.6% lactose
- 1% minerals
- 86.8% water
- Probiotics bacteria $10^7$ CFU/mL

RAW MATERIAL

- RAW MILK
- SKIMMED MILK POWDER
- STARTER CULTURE (deep frozen –45°C: Christian Hansen, Danisco)
PACKAGING

- POTS: Polipropilen (PP) or polistiren (PS)
- LID: Aluminium foil

SHELF LIFE

- 4 weeks keep on temperature 2-8°C

ASSURING SHELF LIFE
- Termization and pasteurisation
- Aseptic fermentation and filling
- Continued cold chain for final product
INTENDED USE of PRODUCT

- For intestinal problems (constipation,
- Ulcer,
- Tissue regeneration (antioxidant activity)
- Increased absorption of minerals
- Protection from pathogenic bacteria
- Anti-tumoral activity
- Adjusting blood pressure
- Lowering blood cholesterol level
- Strengthening the immune system
POTENTIAL HAZARDS

- Biological hazards (microorganisms)
- Chemical hazards in raw milk (cleaning agents, disinfectants, antibiotics)
- Physical hazards (temperature of pasteurisation)
CONCLUSION

• Functional food is good for health and we recommend probiotic yoghurt for your well-being.

THANK YOU FOR YOUR ATTENTION!