FUNCTIONAL FOOD PRODUCTS
IN THE EUROPEAN LEGISLATIVE FRAME

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Trends in food production

- Healthy and balanced diet
- Functional foods / Wellfood
- Organic food
- Food with origin / Traditional food
- Kosher / Halal food
- Vegetarian food
- Convenience food
Functional food is food that has nutritional value with a specific health benefit, derived from substances that may be naturally present in foods or added during processing.
Functional foods

- naturally valuable food,
- food with altered properties of individual components
- food that is enriched with functional ingredients,
- food with modified bioavailability of one or more components
- food in which certain substances are removed,
- any combination of these options.
the fastest growing food sectors,
most interesting areas for research and innovation,
Japan and US are the world largest markets of functional foods, followed by Europe,
US functional food market had in 2012 sales of $43.9 billion,
# Top ten functional food trends in USA

*(Sloan, 2014)*

<table>
<thead>
<tr>
<th>Functional food trends</th>
<th>Description of consumers priorities</th>
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</thead>
<tbody>
<tr>
<td>Specialty nutritional - digestive health</td>
<td>Fortified foods – more vitamins, minerals, herbs/botanicals, fish/oil/omega3-s, probiotics</td>
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<tr>
<td>Get real</td>
<td>Organic foods/beverages, absent of artificial ingredients, unprocessed/less processed foods</td>
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<tr>
<td>Beauty-enhancing foods</td>
<td>Natural/organic foods/drinks - energy drinks/ shots, sports beverages, 100% juice/juice drinks</td>
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<tr>
<td>The protein evolution</td>
<td>More protein to maintain healthy bones/joints, strengthen immune systems and build muscle strength/tone</td>
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<tr>
<td>Kid specific products</td>
<td>Nutrient and calorie levels specific to kids</td>
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<tr>
<td>Pharma foods</td>
<td>Prevention of heart disease, hypertension, osteoporosis and Type 2 Diabetes i.e. Cholesterol lowering foods/drinks</td>
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<tr>
<td>Alternatives</td>
<td>Free from Foods – gluten free, lactose free, meatless meals (lentils, legumes), dairy free milks (soy, rice, coconut)</td>
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<tr>
<td>Sport nutrition</td>
<td>Sports nutrition supplements, nutrition bars, energy drinks</td>
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<tr>
<td>Weight management</td>
<td>Whole grains, fiber, vitamin D, more calcium, protein, antioxidants, omega-3/fish oil</td>
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<tr>
<td>Millennials food choices</td>
<td>healthier, more natural/organic, less processed, better tasting and fresh food</td>
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Main types of functional food on the global market

<table>
<thead>
<tr>
<th>Functional food products</th>
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<tbody>
<tr>
<td><strong>Probiotics</strong></td>
<td><em>Lactobacillus spp., Bifidobacteria spp.</em></td>
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<tr>
<td><strong>Prebiotics</strong></td>
<td>inulin, fructo-oligosaccharides, galacto-oligosaccharides, soya-oligosaccharides, xylo-oligosaccharides, isomalto-oligosaccharides, pyrodextrins</td>
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<tr>
<td><strong>Functional drinks</strong></td>
<td>weight control/nutrition beverages, energy drinks, sports beverages, ready-to-drink coffee/tea</td>
</tr>
<tr>
<td><strong>Functional cereals</strong></td>
<td>oat based products, barley based products- beta glucans</td>
</tr>
<tr>
<td><strong>Functional meat</strong></td>
<td>✓ meat products with added functional ingredients (vegetable proteins, dietary fibres, herbs, spices, ), ✓ meat products modified during processing (production of bioactive peptides during fermentation or curing) ✓ reformulated meat product - fat reduction, cholesterol reduction, reduction of sodium and nitrite levels, improvement of fatty acid composition</td>
</tr>
<tr>
<td><strong>Enriched eggs</strong></td>
<td>Eggs enrichment through supplementation of animal diets with functional ingredients such as LC n-3 PUFAs, vitamin E, selenium, CLA, lutein</td>
</tr>
</tbody>
</table>
Research facilities in the EU active in the field of functional food

(郭珀 at al., 2011).

![Bar chart showing research facilities by country.](image-url)
Consumer attitudes towards functional foods

Understanding of the nutritional information panels/labels on food packaging (Nielsen, 2011)
Consumer attitudes towards functional foods

How frequently consumers purchase foods that promote specific health benefits (Nielsen, 2011)
Regulations setting out the functional food

- Regulation (EU) No. 1169/2011 on the provision of food information to consumers,
- Regulation (EC) No. 1925/2006 on the addition of essential nutrients to foods harmonises the provisions laid down in Member States which relate to the addition of vitamins and minerals and of certain other substances to foods
- Regulation (EC) No. 1924/2006 on nutrition and health claims made on foods
- Regulation (EU) No. 432/2012 establishing a list of permitted health claims made on foods, other than those referring to the reduction of disease risk and to children’s development and health,
- Directive 2009/39/EC on general rules for foods for particular nutritional uses
- Regulation No. 609/2013 on food intended for infants and young children, food for special medical purposes, and total diet replacement for weight control ('Food for Specific Groups')
Regulation (EU) 1169/2011 on the provision of food information to consumers - List of mandatory particulars:

- The name of the food;
- The list of ingredients;
- Ingredient or processing causing allergies or intolerances used in the manufacture or preparation of a food and still present in the finished product;
- The quantity of certain ingredients or categories of ingredients;
- Net quantity of the food;
- Date of minimum durability or the ‘use by’ date;
- Special storage conditions and/or conditions of use;
- Name or business name and address of the food business operator;
- Country of origin or place of provenance;
- Instructions for use where it would be difficult to make appropriate use of the food in the absence of such instructions;
- With respect to beverages containing more than 1.2 % by volume of alcohol,
- Nutrition declaration (will be obligatory from the 2016. for all food types)
Regulation (EC) No. 1925/2006 on the addition of essential nutrients to foods—define nutrients/ingredients that might be used in food manufacturing.

- Vitamin A (μg)
- Vitamin D (μg)
- Vitamin E (mg)
- Vitamin K (μg)
- Vitamin C (mg)
- Thiamin (mg)
- Riboflavin (mg)
- Niacin (mg)
- Vitamin B6 (mg)
- Folic acid (μg)
- Vitamin B12 (μg)
- Biotin (μg)
- Pantothenic acid (mg)
- Potassium (mg)
- Phosphorus (mg)
- Calcium (mg)
- Magnesium (mg)
- Iron (mg)
- Zinc (mg)
- Copper (mg)
- Manganese (mg)
- Fluoride (mg)
- Selenium (μg)
- Chromium (μg)
- Molybdenum (μg)
- Iodine (μg)
Regulation (EC) No. 1924/2006 on nutrition and health claims made on foods -

Regulation (EU) No 432/2012 establishing a list of permitted health claims made on foods, other than those referring to the reduction of disease risk and to children’s development and health

- harmonised rules for the use of nutrition claims (such as “low fat”, “high fibre”, etc.)
- permitted, rejected and pending health claims (such as “reducing blood cholesterol, beta-glucans contribute to the maintenance of normal blood cholesterol levels, biotin contributes to normal macronutrient metabolism etc.”)

Functional Food Products in the European Legislative Frame
**Nutrition claims**

**Nutrition claim** - means any claim which states, suggests or implies that a food has particular beneficial nutritional properties due to the energy (calorific) value (provides, provides at a reduced or increased rate; or does not provide;) and/or the nutrients or other substances (if contains; contains in reduced or increased proportions, or does not contain)

- low energy
- energy-reduced
- energy-free
- very low sodium/salt
- sodium-free or salt-free
- source of fibre
- contains [name of the nutrient or other substance]
- increased [name of the energy free]
- low fat
- fat-free
- low saturated fat
- saturated fat-free
- low sugars
- sugars-free
- with no added sugars
- low sodium/salt
- source of fibre
- high fibre
- source of protein
- high protein

- source of [name of vitamin/s] and/or [name of mineral/s]
- high [name of vitamin/s] and/or[name of mineral/s]
- increased [name of the nutrient]
- reduced [name of the nutrient]
- light/lite
- naturally/natural (linked to other nutrition claim e.g.
- naturally high in fibre
- source of omega-3 fatty acids
- high omega-3 fatty acids
- high mono unsaturated fat
- high poly unsaturated fat

**Since 2010 and 2012:**
- high omega 3 fatty acids
- high poly unsaturated fat
- high unsaturated fat
- no added sodium/salt
- Reduced [name of the nutrient]:

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Functional Food Products in the European Legislative Frame
**Health claims**

**Health claims** - any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health;

**HEALTH CLAIMS**

**222 claims** - Regulation 432/2012, since May 2012.

- The impact of a particular nutrient to the growth and development of the organism function
- The impact on psychological function, behavior
  - Weight control or weight, or reduce feelings of hunger or an increase satiety, reduce energy available
- Risk Reduction of disease
- The impact on the health and development of children

Art. 13.1 generally permitted, set out in Annex (notification only)
Art. 13.5. new claims (requires approval)

Art. 14th assertions (requires approval)

http://ec.europa.eu/nuhclaims/
**Health claims**

**Health claims** - any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health;

**Approved health claims**
- (222 claims)
- (Transition period end 2012)

**Rejected health claims**

**"On Hold" health claims**
- (about 2300 claims)

**EU register of health claims + CLAIMS NOT REGISTERED**

**EU REGISTER with approved claims**

**EU REGISTER with rejected claims**

**not in the EU REGISTER status is not defined**
- (natural remedies and herbs, need evaluation by EFSA)


Health claims
Disadvantages

- Many claims remained "on hold" (not on the list of approved, but they are not banned - herbs) - requires approval of EFSA
- A large number of claims were rejected
- Difficult applications due to the demanding criteria EFSA
- Approach similar to that of the drug approval (complicated)
- Decisions will be waiting a long time (EC10-18 months, EFSA assessment 5-7 months)
- Not defined nutritional profiles
Directive 2009/39/EC

**Directive 2009/39/EC on general rules for food for particular nutritional uses** - aiming to ensure product safety, suitability and appropriate consumer information and to adopt specific directives for certain groups of such foods

- Foods for infants and young children,
- Infant formulae and follow-on formulae,
- Processed cereal-based foods and baby foods,
- Foods for people with gluten intolerance,
- Foods for special medical purposes,
- Foods for sports people and Foods for energy-restricted diets for weight reduction.
Regulation No. 609/2013 on food intended for infants and young children, food for special medical purposes, and total diet replacement for weight control ('Food for Specific Groups') - was adopted on 12 June 2013 and it will repeal Directive 2009/39/EC and abolish the current concept of dietetic foods

- apply from 20 July 2016
- aims to provide a better environment for businesses,
- better application of rules,
- better protect consumers on the content and marketing of these "special" food products
1. phase - reducing / eliminating the negative health nutrients (Podravka nutritional strategies)

- reducing fat
- removal of trans fatty acids
- reducing salt / sodium
- reducing sugar
- reducing the energy value (decrease servings)

2. phase – optimization of positive nutrients

- fortification with vitamins and minerals,
- enrichment with fiber, probiotics, phytochemicals, proteins
- adjusts the portions size
- "clean label" (natural)
Podravka and functional foods

Cream soup pumpkin with sunflower seeds
- No added flavor enhancers
- No added flavor
- With sunflower seeds
- Suitable for vegetarians

Cream soup broccoli and cauliflower
- No added flavor enhancers
- Suitable for vegetarians

Cream soup mushroom with olive oil
- No added flavor enhancers
- No added dyes
- No added flavor
- Suitable for vegetarians

Cream soup green and white asparagus
- No added flavor enhancers
- Suitable for vegetarians

Functional Food Products in the European Legislative Frame
Podravka and functional foods

Fritters with grains and seeds

It contains three types of cereal • 3 types of seeds • Source of fiber • Suitable for vegetarians • No added flavor enhancers and color

Fritters with cereals and vegetables

It contains three types of grains • 5 types of vegetables • Source of fiber • Suitable for vegetarians • No added flavor enhancers and color
Podravka and functional foods

without added flavor enhancers, aromas or colors

Vegeta Natur Twist
- tomato and mozzarella
- bruschette
- grill
- fish
- chicken

Functional Food Products in the European Legislative Frame
Podravka and functional foods

Instant yellow tea

Enriched with vitamin C in the amounts that will satisfy 50% of daily allowances of vitamins

Tuna salad Mediterana

Sunflower oil is replaced with olive oil
Podravka and functional foods

Apricot jam

Light - 30% less sugar • No preservatives
Conclusion

- Producer have opportunity to develop products that will assist in the implementation of healthy diet,
- New EU regulations have created a legislative frame that allows placing on the market new and innovative functional food products, but only if those products are adequately labeled,
- Consumer-friendly nutritional labelling can be a powerful marketing tool, information/claims are to be accurate, true and easy to understand.
Thank you for your attention!

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