PLEASURE project
~ overview ~
<table>
<thead>
<tr>
<th>Proposal full title:</th>
<th>Novel Processing approaches for the development of food products Low in Fat, Salt and Sugar</th>
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<tbody>
<tr>
<td>Proposal Acronym:</td>
<td>PLeASURe</td>
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<tr>
<td>Duration:</td>
<td>36 months (01.2012-12.2014)</td>
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<tr>
<td>Number of participants:</td>
<td>16</td>
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<tr>
<td>Total cost:</td>
<td>€3,945,226</td>
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<tr>
<td>Total EC contribution:</td>
<td>€2,983,864</td>
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Complementarities and role of the different partners in PLeASURe

Funded by the 7th Framework Programme of the European Union, Small Collaborative Project.
KBBE.2011.2.3-05 – Processed foods with a lower salt, fat and sugar content.
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The Situation

- These compounds play a vital role in food processing
- Consumer trend towards processed and convenience food (RTE meals)
- Excessive consumption!!!
- These compounds represent an important cause in the prevalence of malnutrition
- Enormous health problems!!!

More than 60% of all reported diseases in modern industrial countries are said to have their origin from malnutrition

Nowadays we are faced to a paradox: Malnourished people are often overweight or even obese

Malnutrition can cause additional estimated costs for the European health system of approximately 170 billion Euros annually!

Since the early 90’s an epidemic growth of dietary induced diseases has been observed among the European population

!!!

important function in the human body!!!

!!!

!!!
processed foods with a lower salt, fat and sugar content.

innovations through technology vs* application of replacers

track of processes and technologies is thus under explored

*Business Insights Report, 2010
The PLEASURE aims:

- developing innovative processes and/or implementing novel technologies to allow for the development and production of food products with low content of fat (saturated and trans-fatty acids), as well as salt and sugar.

New micro structured and naturally reduced foods with similar sensory properties as conventional products
The PLeASURe Concept

Physical Process Structuration
- Dough, multi-domains - complex food
  - Mixing, laminating process
  - New microstructure

Emulsion
- Oil in water
- Water in oil
  - Texturization, mixing, IPH
  - New microstructure

Biotechnological Processes
- Enzymatic removal of sucrose & glucose and fermentative removal of fructose
- Enzymatic cheese texturization and flavour optimization
- Enzymatic production of glucose
  - Enzymes
  - Aerobic fermentation
  - Proteinases
  - Flavour enzymes
  - Amyloglucosidase
  - Controlled hardening and increased cheese flavour
  - Sweetness from starch biopolymers

Legend:
- Salt, fat
- Glucose
- Fructose
- Non-caloric acid
- Sugar alcohols

SFS-reduction: Mono Food Systems
- Bakery: Pizza dough & puffing pastry
- Cheese: Mozzarella style cheese
- Meat: Sausage
- Fruit-systems: Emulsion, Tomato sauce

Combined SFS-reduction: Ready to Eat Meal
- Pizza: Dough, tomato paste, meat, cheese
- Puffing Pastry: Meat filling
- Puffing Pastry: Sweet filling
The roots to implementation of PLeASURe

- Research and development of indexes for the objective measurement of the reduction in sugar, salt and fat (saturated and trans-fatty acids) content
- Research and development of processes and technologies for the production of
  - Bakery products low in saturated fat, sugar and salt
  - Meat products low in fat (saturated and trans-fatty acids) and salt
  - Cheese products low in fat (saturated and trans-fatty acids) and salt
  - Fruit & Vegetable sugar, salt and fat (saturated and trans-fatty acids) reduced preparations
- Ready-To-Eat (RTE) meals
  - Pizza system dough, mozzarella, sausages and tomato sauce
  - Puffing pastry with a meat filling
  - Puffing pastry with a sweet fruit filling
CONVENTIONAL APPROACH ➔ SALT and SUGAR SUBSTITUTES

➔ PLEASURE TARGET = PROCESS

- High pressure processing
- Bioreactor
- Low pressure dough mixers:
  - Dough sheeter
  - Amadeus (model mouth)
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Thank you very much for your attention!

For more information find us on

www.pleasure-fp7.com

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