BEAM-call
Tekes 2015

Nutri-Concept
Innovative Food Concepts and Technologies for Global Nutrition and Business

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Co-creation journey to Bihar
Background

• A correctly **balanced diet** makes a major contribution to the wellbeing and healthy ageing of citizens all over the world

• In India, about 75% of children are underweight, 60% women are anaemic and at least 44% of children up to the age of five years suffer from malnutrition

• An increasing problem in India and other developing countries is a shift towards Western diet risk of life-style diseases - coronary heart-diseases, cancer, diabetes; all related to diet.

• Demand for **high quality plant protein** for food and feed production has increased for decades. **Legumes and cereal grains** are among the most important sources of dietary proteins, carbohydrates, vitamins, minerals and fiber for people all over the world.
Need

• Cost-efficient, healthy and safe foods - affordable also in developing countries
• To reduce health care costs caused by lifestyle-related diseases and malnutrition.
• Products targeted at the specific nutritional groups, e.g. elderly population - great potential and a clear gap in the market for high quality products, especially high protein and fiber products, for healthy ageing.
Objectives of Nutri-Concept project

• **New concepts for health promoting food products** with high quality proteins and fibers directed to children, seniors, elderly, celiacs, vegetarians potential for alleviating effects of malnutrition and nutrition transition in children in developing countries and health conscious consumers all around the world

• **Plant protein enrichment technology** will be developed during the project to provide the food industry sustainable ingredients for further product development.
Approach

• **Ingredients and consumer products** based on protein-rich cereals and legumes

• Improvement of **nutritional and sensory properties** (e.g. fermentation) of the products

• Assessment of **techno-economic feasibility and development of business plan for the production of new products in Finland for export and for domestic use.**
BUSINESS
- Increased consumer acceptance
- Export of food and technology
- Sustainable business

CONSUMERS
- Sensory quality of plant protein, ease-of-use, lacking information

NEEDS OF INDUSTRY
- New ingredients, non-soy, non-GMO, new technology

MALNUTRITION AND NUTRITION TRANSITION IN DEVELOPING COUNTRIES
- Protein quality, vitamins, anti-nutrients

HUMANS & HEALTH
- Positive health effects
- Increased consumption of plant protein
- Increased consumer acceptance
- Information gain via dissemination

PRODUCT CONCEPTS
- Sensory quality
- Nutritional quality
- Safety
- Fermentation
- Processing technology

LEGUMES AND CEREALS
- Vegetarians, celiacs, children, elderly
- Increased product development

NEW INGREDIENTS
- Information gain via dissemination
- Export of food and technology

INNOVATION
- Positive health effects
- Increased consumption of plant protein
- Increased consumer acceptance
- Information gain via dissemination
- Export of food and technology
- Sustainable business
Work packages

- Processing technology
  - WP1: Raw material
    Leader: Luke, Participation: UTU, CFTRI (India)
  - WP2: Fermentation
    Leader: Luke, Participation: UTU, CFTRI (India)
  - WP3: Processing
    Leader: UTU
    Participation: Luke, CFTRI (India)
  - WP4: Product analyses
    Leader: UTU
  - WP5: Market analyses
    Leader: UTU
    Participation: Luke, CFTRI (India)
  - WP6: Dissemination
    Leader: Luke, Participation: UTU, CFTRI (India)

- Product concepts refinement

- Growth in Business and Export
- Improvement in Nutrition, Health and Well-being
Outcome and impact of the project

• **New safe food concepts** aiming with high nutritional value and affordable price

• **New business opportunities in Finland and India**
  Benefits for the Finnish business and industry

• Potential applications of new Finnish product concepts and production technologies for international markets

• Promoting of the utilization of finnish raw materials

• Potential to reduce malnutrition both in developing and developed countries and to decrease mortality of children in developing countries

• Increase **socio-economic and environmental sustainability**

• More **vitality in agricultural and rural sector**
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Natural Resources Institute Finland (Luke), Bio-based Business and Industry: Minna Kahala, Eila Järvenpää, Raija Tahvonen, Lucia Blasco, Anne Pihlanto |
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| Companies in Finland | Bioferme Oy, Fazer Leipomot Oy, Palkuainen, Ravintoraisio Oy, Apetit Suomi Oy, Foodwest Oy, Gaia Consulting Oy, JKK Partners Oy Ltd, Polar Glucan Oy, Finnsoy Oy, Sybimar Oy, Verso Food Oy |
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Thank you!