New Advances in the integrated Management of food processing waste in India and Europe: use of Sustainable Technologies for the Exploitation of by-products into new foods and feeds

http://www.namaste-eu-india.org/

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Main objective & justification

- Citrus byproducts and Wheat bran are extensively produced in Europe (~1 and 10 MT/y, resp.); Mango and Pomegranate byproducts and Rice bran are remarkably accumulated in India (~5, 0.3 and 3 MT/y, resp.). They are only partially and poorly valorized (e.g., pectins, feeds, biogas, etc) and largely disposed in landfills (with relevant costs and environmental problems).

- They are good sources of compounds useful for the human health (i.e., fibers, prebiotics, vitamins, antioxidants, etc.) exploitable in new food/feed formulation.

- The modern lifestyle requires “ready to eat” foods based on ingredients with health-promoting properties. The aquaculture requires feeds with plant-deriving ingredients.

To develop and validate technological protocols for the sustainable conversion of fruit by-products and bran into new food products and an aquaculture feed to improve the sustainability of the fruit/cereal processing industry and create new competitiveness and market opportunities for the EU/India food industry.
NAMASTE EU Consortium structure

- Alma Mater Studiorum-Università di Bologna, Italy (UNIBO). Coordination (F. Fava)
- Institute of Food Research, England (IFR)
- AZTI Tecnalia, Spain (AZTI)
- Campden & Chorleywood Food Industry Development Institute Hungary, Hungary (CCH)
- Wageningen, Food & Biobased Research, Netherlands
- Grupo Leche Pascual, Spain (GLP)
- J. Rettenmaier & Söhne GmbH + CO. KG, Germany (JRS)
NAMASTE INDIA Consortium structure

North East Institute of Science & Technology (Assam). Coordination (P. K. Goswami)

Euro India Research Centre (Bangalore)

University of Agriculture (Bangalore)

Nature Fresh Logistics Ltd (Maharashtra)

Vaighai Agro Products Ltd (Madurai)
Approach and Rationale

- **MARKET**
- **FOOD PROCESSING**
- **RAW MATERIAL**

**BY-PRODUCTS**
- Characterization & Preservation
- Pre-treatment & Ingredient recovery

New foods formulation (innovative and sustainable processes/technologies)
- New feeds (for aquaculture)

Knowledge transfer & exploitation
- Assessment of products & processes/technologies
- Identification of new market opportunities
RTD Strategy & WPs (NAMASTE EU)

WP5

Wheat bran

Citrus by-products

Stabilization

Stabilization

Enzyme treatment & fractionation

Extraction/Enzyme treatment & fractionation

WP2

WP3

Fibres

Extracts with antioxidant and antimicrobial activity

Extracts with antioxidant and antimicrobial activity

Purification and biocconversion

High pressure homogenization

Semisolid matrix

WP4

Natural Vanillin

Fibre enriched fractions

Fibres

Fermented fibres

Fibre enriched fractions

WP3

Functional beverage

Refrigerated fruit paste

Textured food (snack)

Fillers for bakery products

Fish feed

Development of by-products specifications

Definition of the Standard Operational Procedures

Citrus processing Protocol

Bran processing Protocol

24-27 May 2011
NAMASTE-EU and MAMASTE-India are exchanging the main knowledge and protocols generated in each of the corresponding WP as well as their young scientists, to integrate their RTD strategies and result implementation strategies.
Expected Impact

Consumers benefits: healthy safety and high quality foods

Increased industrial sustainability (integration of food byproducts producers and exploiters)

New EU-India market opportunities: NAMASTEs industrial partners and the industrial platform would be the first nucleus

EU-India research cooperation: common technical standards, protocols, regulations & policies

WP 1: Project Management & Coordination

WP 2: Characterization and stabilization of by-products/wastes from EU industries

WP 3: Ingredients for new foods: pre-treatment of by-products, recovery & production of natural molecules

WP 4: Application and Validation of products for food and feed applications

WP 5: Assessment of innovative industrial protocols

WP 6: EU-INDIA Integration

WP 7: Innovation and Dissemination
NAMASTE: an EU-India opportunity

http://www.namaste-eu-india.org/

Thank you
Management & Innovation transfer

WP1

Indian Coordinator (CFTRI)
European Coordinator (UniBo)
Support Team
EU support Team

DBT – Indian Government
Integration level

Indian Coordinator (CFTRI)
European Coordinator (UniBo)
Support Team
EU support Team

Euro-India NAMASTE Steering Committee (WP leaders)
Research Teams and Industries (General Assembly)

Dissemination & Exploitation Team
WP7

DET

IP

Euro-India Industrial Platform
WP6

European Commission

Strategic & operational level

WP7

DET

GREEN WEEK
Brussels, 24-27 May 2011