



Facilitating Introduction of Innovative Foods

K B Subramanian
Deputy Secretary
Ministry of Food Processing Industries

Introduction

- Research and Development in the processed food sector is an important area where much focused attention is required as it is related with improvement of production, quality, trade, consumer safety and public health.
- There is a need for up gradation of processing, handling, packaging, storage and distribution technologies for all major processed food products so as to meet domestic & international standards.

Introduction(contd)

The main areas in which R&D is required are:-

- a) developing innovative products,
- b) developing technology for processing of food products
- c) developing efficient technology for preservation and packaging of food products including design and building of proto-type equipment and pilot plants.

MoFPI initiative

- The Ministry of Food Processing Industries under its scheme for Research and Development in Processed Food Sector is providing financial assistance to promote and undertake demand driven R&D work leading to innovative products and processes with commercial value.
- The scheme is now being implemented through Science and Engineering Research Board(SERB), D/o Science and Technology w.e.f. 01-04-2012.

Deliverables of the Scheme

- The specific outcome of the R&D scheme is creation of a shelf of technologies and innovative products, which will be available to industry for commercialization.
- New products will enter the market and raise the safety and nutritional status of food items.
- The R&D projects are also aimed at enabling the scientific community to understand and work with the issues in the food science area with a view to evolving technological solutions and new products and processes.

ELIGIBLE INSTITUTIONS

All Universities, IITs, Central/State Government Institutions, Public Funded Organisations, R&D laboratories and CSIR recognized R&D units in private sector.

Funding Pattern

For the Government Organizations/universities/institutions:

- 100% of cost of equipment, consumables and expenditure related to Junior Research Fellow/Senior Research Fellow /Research Associate (JRF/SRF/RA) specific to the project of specified duration for maximum of three years.
- Lump sum provision up-to Rs.1 Lakh for TA/ DA for project related travel like survey, data/sample collection, etc. and for attending the meetings of the Expert Committee to present the project proposal and subsequently for the project review presentation.
- Institutional Charges equal to 10% of project cost subject to maximum of Rs. 3 lakh for non-academic institutions and Rs. 5 Lakh for academic institutions.

Funding Pattern- contd.

For Private organizations / universities / institutions, grant is given to the tune of 50% of equipment cost in general areas and 70% in difficult areas.

Changes in the revised guidelines for R&D projects for the XII Plan

Changes have been made in the guidelines issued recently for the 12th Plan:

- Provision to allow for engaging of Research/Project Assistant also, as project staff during the approved duration of the project. Scale/emoluments would be as per norms of DST/ICAR /CSIR/ implementing University / Institute.
- TA/DA expenses to be reimbursed to all Project Investigators (P.Is) {excluding industry} as and when called for presentation instead of restricting such reimbursement to only two occasions for approved projects.
- Provision allowed for Travel expenses for research purpose such as collection of samples, subject to maximum of rupees one lakh per project, to be considered based on specific recommendations of the Technical Committee.

Changes – contd.

- Normal duration of the project revised to three years with provision for extension of one more year, with or without cost, depending upon merit of the case based on recommendations of Technical Committee.
- Provision for institutional charges limited to maximum 10% of the project cost so as to encourage reputed Institutions to sponsor projects:-
 - 3 lakh for non- academic institutions
 - 5 Lakh for academic institutions

Changes – contd.

- Project Investigators (PI) are encouraged to avail assistance for filing and obtaining patents for research outcome of MFPI assisted projects through Technology Information, Forecasting and Assessment Council (TIFAC), an autonomous organization under the Department of Science & Technology.
- Patent Facilitating Centre (PFC) under TIFAC will facilitate filing and obtaining patents for academic institutions and universities without any charges as MFPI will make necessary arrangement for the same directly with PFC, TIFAC.
- In case of private sector research proposals, the concerned State Food Processing Mission Director may be invited to attend the Expert Committee meeting for consideration of the proposals.

Procedure for approval of proposals by SERB

- SERB evaluates the proposals comprising of peer review and / or evaluation by an Expert Committee.
- In case of private sector proposals, concerned State Food Processing Mission Director may also be invited to attend the Expert Committee meeting.
- After approval by competent authority, in principle approval will be conveyed to the applicant.
- After fulfillment of all criteria, sanction will be issued for release of installments of grant as applicable.

R&D Projects Supported By MOFPI During 2013-14

Sr. No.	Topic of Research with Summary	Institution / University	State
1	Validation of Nutraceutically important plant resources in India by DNA Barcoding using various Gene Markers of India	Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	Maharashtra
2	Improving the microbial safety and nutritional quality of fresh meat using a low cost refrigerated cabinet for retail marketing of meat in street meat shops	Central Institute of Post Harvest Engineering and Technology, Ludhiana, Punjab	Punjab
3	Development of enzyme based extraction process for improving quality and recovery of starch from different varieties of Colocasia Esculenta (Arbi) of Assam for food use	Tezpur University, Assam	Assam
4	Processing of Apple for value added product development	IHBT, Palampur	H.P
5	Red Sorghum flakes based snack bar for health and nutritional security	Department of Horticulture, University of Agricultural Sciences, Dharwad, Karnataka	Karnataka
6	Nutritional approach for designing goat meat based functional products	Central Institute of Research on Goats, Mathura (U.P.)	U.P.
7	Design of Novel Functional Food Supplements using Supercritical Carbon dioxide Extraction and Encapsulation Technologies	Jadavpur University	W.B.

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8	Development of ready to reconstitute Misti Dahi Powder	Tezpur University	Assam
9	Biotechnology Production of xylitol from zylose rich lignecellulosic materials	IARI	Delhi
10	Utilization of deoiled soybean cake for production of enzymes, bioactive components and protein products	Indian Institute of Technology, Delhi	Delhi
11	Supercritical Fluid Extraction of Natural Antioxidant for Food Preservation	IIT delhi	Delhi
12	Processing and Packaging of Tender Coconut Water for Rural Market	IIP, Mumbai	Mumbai
13	Value added and Healthful Texturized Egg Products	CFTRI, Mysore	Karnataka
14	Bio processing and pilot scale production of high valued tea Nutraceuticals :Catechins and Theaflavins	IHBT, Palampur	Himachal Pradesh
15.	Studies on the preservation of vegetable Juices and Non-Acidic fruit juices by Microwave Heating and development of prototype model of continuous microwave pasteurization / sterilization system	CFTRI, Hyderabad	Andhra Pradesh
16	Development of value added products from Minor Fruits of North East	Assam Agriculture University	Assam

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1	Studies on development of cereal based functional breakfast food from the underutilized crops of North-East	Department of Food Engineering & Technology, Tezpur University, Napaam, Tezpur, Assam	Assam
2	Pilot Scale Process Technology for ' BHIM KOL ' (MUSA BALBISIANA) Slice, Grits and Powder using Hybrid Drying Methods	Department of Food Engineering & Technology, Tezpur University, Napaam, Tezpur, Assam	Assam
3	Development of Strip based detection tests for selected adulterants and contaminants in milk	Division of Dairy Chemistry, National Dairy Research Institute, ,Karnal, Haryana	Haryana
4	Healthy Foods: Production of Stable and Active Probiotics	Dairy Microbiology Division, National Dairy Research Institute, Karnal	Haryana
5	Production of buffalo casein hydrolysates enriched with antioxidative and immunomodulatory peptides and their application for the development of functional beverage	Division of Dairy Chemistry, National Dairy Research Institute, Karnal, Haryana	Haryana
6	Phosphine and Carbon dioxide (CO ₂) Combinations as Alternative to Methyl Bromide to Manage Stored Pests of rice Under Bulk Storage	Department of Storage Entomology, Indian Institute of Crop Processing Technology, Pudukottai Road, Thanjavur, Tamilnadu	Tamil Nadu
7	Package of Technologies for On-farm Processing, Value Addition and Safe Storage of Onions	Indian Institute of Crop Processing Technology, Thanjavur, Tamilnadu	Tamil Nadu
8	Chemical, rheological and processing quality of fractions produced by successive size reduction milling of different wheat varieties	Department of Food Science and Technology, Guru Nanak Dev University, Amritsar, Punjab	Punjab

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9	In vitro assessment of the effects of commercially available nutraceuticals and oligosaccharides as prebiotics on the human gut microflora	Department of Biochemical Engineering & Biotechnology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi	Delhi
10	Development of Phenolic Enriched Multigrain Bread with Improved Functional Quality	Division of Post Harvest Technology, Indian Agriculture Research Institute, 3rd floor, NRL Building, New Delhi, Delhi	Delhi
11	Biotechnological approaches for utilisation of deoiled seed cakes in producing food enzymes and chemicals	Department of Chemistry, Indian Institute of Technology Delhi, Hauz Khas, New Delhi 110016	Delhi
12	Synthesis and Characterization of Nano-Cellulose and its Application in Biodegradable Polymer Composite Films for Food Packaging	Department of Polymer and Surface Engineering, Institute of Chemical Technology, University of Mumbai, Matunga, Mumbai 400019	Maharashtra
13	Biotechnological Production of Bioactive Metabolites from Therapeutic Fungal Biofactory <i>Ganoderma</i> sp. for Pharmaceutical Applications	Fermentation Technology and Bioengineering, Central Food Technological Research Institute, Mysore 570020	Karnataka
14	Development and Quality Evaluation of Gluten free Products for Celiac Disease Patients	Department of Food Science & Technology, Guru Nanak Dev University, Amritsar 143005	Punjab
15.	Microencapsulation of anthocyanin pigment extracted from kokam (<i>Garcinia indica</i>) processing industry waste	Department of Food Science and Technology, Shivaji University, Kolhapur 416004	Maharashtra
16	Extraction and Concentration of Bioactive Compounds and Sugars from Horticultural Processing Waste using Microwave-Membrane Technology	Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology Bombay, Powai, Mumbai-400076	Maharashtra

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Sr. No.	Topic of Research with Summary	Institution / University	State
17	Mineral bound milk based ingredients: Preparation, characterization and application	Division of Dairy Chemistry, National Dairy Research Institute Karnal 132001	Haryana
18	Studies on Post Harvest Application of 1-MCP on Shelf Life and Quality of Mango and Tomato Fruits	Department of Chemical Technology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad 431004	Maharashtra
19	Use of Natural Resins and Gums for Preservation and Value Addition of Fishery Products	Mumbai Research Centre of Central Institute of Fisheries Technology CIDCO Admn. Building, Vashi Mumbai 400703 & Indian Institute of Natural Resins & Gums Namkum, Ranchi 834010	Maharashtra & Jharkhand
20	Reverse Micellar Extraction of Lacto ferrin from whey: Continuous Process	Department of Chemical Engg. NIT, Karnataka, Surathkal, Shrivivanagar, Mangalore-575025	Karnataka
21	Development of Process of Technology for functional snack food using flaxseed	D/o Food Processing Technology, A.D. Patel Institute of Technology, P.O.Box No 52, behind GIDC New Vallabh Vidya Nagar, Karamsad, Anand-388121	Gujarat
22	Development of a three dimensional culture system to produce meat from chicken satellite cells	D/o Biotechnology, GITAM, GITAM University, Visakhapatnam-530045	Andhra Pradesh
23	Development of Chromatographic and PCR Based Methodology to Ascertain the Quality of Milk Fat and its Validation under Filed Conditions	Division of Dairy Chemistry National Dairy Research Institute, Karnal-132001	Haryana

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Sr. No.	Topic of Research with Summary	Institution / University	State
24	Developing New Technologies for Processing Sugarcane Juice	Division of Crop Production Sugarcane Breeding Institute (ICAR), Coimbatore-641007	Tamilnadu
25	Scale up of chitosan based coating formulation for preservation of selected fruits	Department of Meat and Marine Sciences, Central Food Technological Research Institute, Mysore-570020	Karnataka
26	Developing Post Harvest Mechanization Package for Banana Central Core	Department of Agriculture Structures and Process Engineering, Central Institute of Agricultural Engineering, Coimbatore- 641003	Tamil Nadu
27	Preparation and Characterization of Nanoemulsions of Curcumin for their use in Functional Foods	Department of Dairy Chemistry, National Dairy Research Institute, Karnal, Haryana	Haryana
28	Extraction of resistant starch from Horse chestnut and rice, its utilization as an encapsulating agent for targeted delivery into the clone	Department of Food Science & Technology, University of Kashmir, Srinagar, Jammu & Kashmir, Srinagar.	J&K
29	Biochemical composition of Bombay duck fish, and functional characterisation of its muscle proteins	Division of Fisheries Resources, Harvest & Post-harvest Management, Central Institute of Fisheries Education, Maharashtra	Maharashtra
30	Functionalized polymers for processing of soymilk and apple juice	Biotransformation Laboratory, Natural Products Division, Indian Institute of Chemical Technology, Hyderabad	Andhra Pradesh

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31	Biotechnological approaches to regulate fermentation and drying process of cocoa.	Department of Plantation Products Spices & Flavour Technology, Central Food Technological Research Institute, Mysore	Karnataka
32	Ultrasound processing of liquid food: Feasibility and Efficacy	Department of Food Process Engineering, Indian Institute of Crop Processing Technology, Thanjavur, Tamilnadu	Tamil Nadu
33	Quality Assessment of traditionally processed dried fish of the North East India	Department of Biotechnology, Gauhati University, Guwahati, Assam	Assam
34	Comparative Evaluation of Enzymatic and Fermentative methods for Preparation of Chicken liver Hydrolystates:Recovery, Biofunctional Characterization and Application	Department of Meat, Fish & Poultry Technology, Central Food Technological Research Institute, Mysore, Karnataka	Karnataka



Thanks