GOVERNMENT OF INDIA
MINISTRY OF FOOD PROCESSING INDUSTRIES
RAJYA SABHA
UNSTARRED QUESTION NO. 2949
ANSWERED ON 20TH DECEMBER, 2024

USE OF NANOTECHNOLOGY IN FOOD PROCESSING INDUSTRY

2949. SHRI R. GIRIRAJAN:

Will the Minister of ***FOOD PROCESSING INDUSTRIES*** be pleased to state:

(a) whether Government is encouraging use of nano technology and frozen foods to enhance the shelf life and longevity of food products without compromising on quality and taste;
(b) if so, the details thereof, if not the reasons therefor;
(c) whether Government has any special projects announced for the establishment of food processing industries involving nano technology and frozen foods technology, if so, the details thereof; and
(d) the funds allocated in the last five years for the purpose?

ANSWER

THE MINISTER OF STATE FOR FOOD PROCESSING INDUSTRIES
(SHRI RAVNEET SINGH)

(a) & (b). In order to boost food processing sector, Ministry of Food Processing Industries (MoFPI) has been incentivizing setting up/expansion of Food Processing Industries through its Central Sector schemes namely Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) Scheme, Production Linked Incentive Scheme for Food Processing Industry (PLISFPI) and Centrally Sponsored – Pradhan Mantri Formalization of Micro Food Processing Enterprises (PMFME) Scheme across the country. These schemes are not region or state specific but demand driven. In order to promote use of technology including nano & frozen foods technology adoption in Food Processing Sector, MoFPI extends Grant-in-Aid to educational and research institutions including Council of Scientific & Industrial Research (CSIR) recognized Research and Development (R&D) units in private sector for related demand driven R&D projects through its R&D scheme under PMKSY. Under R&D component of the Scheme, financial assistance as grant-in-aid is provided to Private organizations/ universities/institutions/R&D laboratories and CSIR recognized R&D units in private sector to the tune of 50% of equipment cost in general areas and 70% in difficult areas and to various Universities, IITs, Central/ State Government Institutions, Government funded organizations to promote and undertake demand driven R&D work in food processing sector for product & process development, design and development of equipment, improved storage, shelf-life, packaging etc. R&D projects of Government organizations/ Institutions are eligible for 100% grant-in-aid for the cost of equipment, consumables and expenditure related to Research Fellows, etc. 80 research projects have been approved since 2017-18 till 31st October, 2024 with an approved subsidy of Rs. 28.75 crore. In addition, National Institute of Food Technology, Entrepreneurship & Management (NIFTEM) Kundli and NIFTEM, Thanjavur, under administrative control of MoFPI, are also engaged in R&D activities in the sector. Schemes of MoFPI are, inter alia, intended to develop value-added products, bringing innovative technologies, enhancing productivity, increasing shelf life and thus reducing wastage of food.

(c) & (d). The details of R&D projects approved by MoFPI in the field of Nanotechnology for development of Food Processing Sector and fund allotted since 2019-20 under the R&D component scheme of PMKSY are at **ANNEXURE.**

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (c) & (d) OF THE RAJYA SABHA UNSTARRED QUESTION NO. 2949 FOR ANSWER ON 20.12.2024 REGARDING "USE OF NANOTECHNOLOGY IN FOOD PROCESSING INDUSTRY"

Details of R&D projects approved in the field of Nanotechnology for development of Food Processing Sector under R&D component scheme of PMKSY

Sr. No.	Project Title	Institute/ College/ University	Govt./Pvt.	Project cost (Rs. In lakh)	Sanctioned grant (Rs. In lakh)	Grant Released (Rs. In lakh)	Status
1	Non-destructive Nano-sensors for detecting chemical and biological food toxins using surface enhanced Raman Scattering	Amrita Vishwavidyapeetham, Cochin,Kerala	Pvt.	1.3	0.65	0.65	Completed
2	Development of Process for nanoencapsulation of polyphenols for food supplement applications	Central Food Technological Research Institute(CFTRI), Mysuru, Karnataka	Govt.	0.2029	0.2029	0.185	Completed
3	Nanopatterning with low temperature process for the production of instant foaming soluble coffee	National Institute of Food Technology Entrepreneurship and Management (NIFTEM-Previously IIFPT), Thanjavur, Tamilnadu	Govt.	0.4884	0.4884	0.4616	Completed
4	Development of Antimicrobial polymeric nanocomposite film from PET waste for packaging of milk and milk products	University of Calcutta, Kolkata, West Bengal	Govt.	0.48291	0.48291	0.4408	Completed
5	Preparation and Characterization of Nanoemulsions of Curcumin for their use in Functional Foods	National Dairy Research Institute(NDRI), Karnal, Haryana	Govt.	0.1997	0.1997	0.1488	Completed
6	Synthesis and Characterization of Nano-Cellulose and its Application in Biodegradable Polymer Composite Films for Food Packaging	Institute of Chemical Technology (ICT), Mumbai, Maharashtra	Govt.	0.3273	0.3273	0.2391	Completed

7	Fabrication of Highly Sensitive nanocomposited MnO2/CNTs Based Sensor for Detection of Hydrogen Peroxide in Milk	Bishop Heber College, Tiruchirappalli, tamil Nadu	Pvt.	0.7964	0.3982	0.3838	Completed
8	Development of Nano-Immuno Rapid Test to detect Mycobacterium avum subspecies paratuberculosis in Milk samples	Central Institute for Research on Goats (ICAR-CIRG) CIR Goat, Makhdoom, Uttar Prdesh	Govt.	0.6578	0.6578	0.4623	Completed
9	Application of nano-immobilized β-Galactosidase for production of galactooligosaccharides from dairy by-product	Indian Council of Agricultural Research (ICAR-NDRI), Karnal, Haryana	Govt.	0.4394	0.4394	0.3197	Completed

Details of funds allocated and funds utilized under R&D component scheme of PMKSY since 2019-20

(Rs in Crores)

Year	**2019-20**		**2020-21**		**2021-22**		**2022-23**		**2023-24**	
Scheme	**R.E.**	**A.E.**	**R.E.**	**A.E.**	**R.E.**	**A.E.**	**R.E.**	**A.E.**	**B.E.**	**A.E.**
R&D component of PMKSY	8.77	4.89	6.20	6.02	3.40	2.78	2.86	1.18	2.40	0.49

R.E.—Revised Estimates, A.E.- Actual Expenditure

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