

GOVERNMENT OF INDIA
MINISTRY OF FOOD PROCESSING INDUSTRIES
RAJYA SABHA
UNSTARRED QUESTION NO. 3913
ANSWERED ON 04TH APRIL, 2025

ADOPTION OF TECHNOLOGY AND R&D IN FOOD PROCESSING

3913. SHRI RYAGA KRISHNAIAH:

DR.PARMAR JASHVANTSINH SALAMSINH:

SHRI NARAYANA KORAGAPPA:

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

- (a) the measures being taken to promote the adoption of advanced food processing technologies among MSMEs ;
- (b) whether financial incentives or subsidies are being provided to encourage automation and modernization in food processing;
- (c) in what manner Government is supporting R&D initiatives to enhance food safety and quality standards in processed food; and
- (d) whether there are any collaborations with research institutions or industry bodies in place to drive innovation in food processing?

ANSWER

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

(a) to (d) : In order to promote and ensure overall development of Food Processing Industries including use of technology in Food Processing Sector, Ministry of Food Processing Industries (MoFPI) has been incentivizing setting up/ expansion of related infrastructure through its Central Sector “Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) Scheme”, Central Sector “Production Linked Incentive Scheme for Food Processing Industry (PLISFPI)” and Centrally sponsored “PM Formalization of Micro Food Processing Enterprises (PMFME)” Scheme across the country. These schemes are not region specific but demand driven.

The schemes of MoFPI aim to promote preservation and processing of food products and modernization/ capacity enhancement of food processing units and Ministry extends financial support to prospective entrepreneurs for setting up of different kinds of food processing, as per respective scheme guidelines. Entrepreneurs in the Micro, Small & Medium Enterprises (MSME) sector are also incentivized under the schemes of MoFPI.

Under the PMFME Scheme, financial assistance is being provided to micro food processing enterprises for acquiring new technologies and upgrading equipment. In addition, handholding support is provided to the beneficiary for project formulation, execution, access to credit, linkages to machine/equipment manufacturers, maintenance of hygiene & quality control etc.

So far, MoFPI has sanctioned 1608 projects including 41 Mega food Parks, 394 Cold Chain projects, 75 Agro-processing Clusters projects, 526 Food Processing Units, 61 Creation of Backward & Forward Linkages and 44 Operation Greens projects under corresponding component schemes of PMKSY across the country till 28 February, 2025. A

total sum of ₹ 6198.76 crore has been disbursed as grants in aid/ subsidy since inception of component schemes of PMKSY, as on 28.02.2025.

A total of 1,27,758 micro food processing enterprises have been approved for assistance under PMFME in the country and Central Share of ₹ 2704.61 crore has been released to States/ UTs for implementation of various components of the scheme till 28th February, 2025.

A total of 171 proposals from 133 food processing companies have been approved for assistance under various categories of the PLISFPI scheme in the country and incentives to the tune of ₹1155.296 crore has been disbursed, out of which ₹13.266 crore has been disbursed to MSMEs in 20 eligible cases as on 28.02.2025.

Keeping in view the requirement of innovative products and use of technology 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. A total of 80 research projects have been approved since 2017-18 under the scheme with subsidy of Rs. 28.75 Cr.

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.

Also, expenditure on scientific research on in-house research and development facility is eligible for deduction under relevant sections of the Income tax Act, 1961.

Schemes of MoFPI are, inter alia, intended to develop value-added products, bringing innovative technologies, enhancing productivity, enhancing product quality and safety standards and thus reducing wastage of food.

List of technologies developed by NIFTEM- Kundli, NIFTEM- Thanjavur & Central Food Technological Research Institute (CSIR-CFTRI), Mysuru, which have been put to commercial use by various MSMEs, SHGs and other Food Processing Industries, during last 3 years, is placed at **Annexure**.

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) to (d) OF RAJYA SABHA UNSTARRED QUESTION NO. 3913 FOR ANSWER ON 4th APRIL, 2025 REGARDING “ADOPTION OF TECHNOLOGY AND R&D IN FOOD PROCESSING”.

List of technologies developed by NIFTEM- Kundli, NIFTEM- Thanjavur & Central Food Technological Research Institute (CSIR-CFTRI), Mysuru, which have been put to commercial use by various MSMEs, SHGs and other Food Processing Industries, during last three year

Sr. No.	Technology
Technology Developed by NIFTEM- Thanjavur	
1.	Non-Dairy Ice-cream (Millet mil , Coconut milk)
2.	Puffing Unit
3.	Millets (Pasta, Flakes, Vermicelli, Cookies)
4.	Malt Powder
5.	RF Protein Bar
6.	KAVUNI Cookies
7.	Neera Sugar Crystal technology
Technology Developed by NIFTEM- Kundli	
8.	Flavoured Fermented Rice Water Beverage
9	Development of acrylamide reduction method for Indian potato cutlet
10	Soybean oil enriched with natural antioxidants replacing TBHQ (synthetic antioxidant)
11	A biopolymer composite functionalized with sorghum bran and ionic liquid for active packaging of chicken meat
12	Chitosan-Pineapple Peel Active Packaging for Shelf –Life of Indian Cottage Cheese
13	Microencapsulation of vitamin B2-producing probiotic strain L. plantarum MTCC25432
14	Vitamin B2-enriched probiotic yogurt
15	Millet Muffins
16	Millet Nan-khatai
17	Millet Biscuits
18	Millet Bun
19	Millet Kurkure
20	Millet Bread
21	Millet Nutribar
22	Millet flakes
23	Millet smoothie
24	Millet Soup
25	Lactation Biscuits 1

26	Lactation Biscuits 2
27	Lactation Biscuits 3
28	Gluten Free Cookies
29	Millet based multigrain cookies
30	Sugar free Muffins
31	Sattu Cookies
32	Multigrain Muffins
33	Herbal Cookies
34	Pomegranate peel, Bengal gram husk and Moong dal
35	Gluten Free Pasta
36	Multigrain Pasta using Malted Finger Millet and Lentil Flour
37	Microwave processed Multigrain Pasta
38	Multigrain Protein Enriched Noodles
39	Malted Pearl Millet Based Noodles
40	Malted Proso Millet Based Bread
41	Malted Foxtail and Lentil Flour Cookies
42	Stuffed Paratha Making Machine
43	COCOSHRESHTHTM- Coconut Water
44	Extraction machine
45	RTE 3D PRINTED MARZIPAN SWEET
46	Vacuum precooler
47	Evacuated Tube Solar Dryer
48	BOONDI DISPENSER MACHINE
49	Fruit-flavored millet (ragi/ bajra) malt premix
50	Millet (Ragi & Bajra) based Nutribar
51	Infrared-Assisted Evacuated Tube Hybrid Solar Dryer
52	Nano-curcumin Functionalized Milk Cream Powder
53	Nano-curcumin Functionalized Dairy whitener/milk powder
54	Process Technology for retaining softness of Khoa Burfi & Peda
55	Low Cost Meat Storage Structure
56	ALA- Rich Oil Powder and ALA Rich Margarine
57	Linseed Ladoos / Linseed Muffin / Linseed Papad / Linseed Fryum

58	Black Rice Instant Kheer Premix
59	Nanomaterial based non-enzymatic colorimetric sensor for the rapid detection of L-lactate/lactic acid/ polylactic acid (PLA) in food, pharma and packaging application
60	Development of metal oxide bentonite clay nanocomposite-based label free colorimetric sensor for the detection of total aflatoxin in food products and cattle feed
Technology Developed by CSIR-CFTRI, Mysore	
61	Tamarind Juice concentrate & Powder
62	Coffee concentrate
63	Microbial inoculums for the management of coffee pulp effluent.
64	Pickles and Chutney's: Preparation.
65	Preparation of ready to cook Multigrain Whole mix for Drink/Porridge
66	Fruits jam & jellies preparation
67	Nutra chikki with added spirulina
68	Osmo air dried fruits Amla, Jack fruits, Pineapple, mango
69	Instant coffee cubes
70	Raw banana Powder
71	Banana pseudostem juice
72	Dehydrated drumstick powder,
73	Instant moringa leaves soup mix,
74	Flaking of fox tail millet,
75	Low glycemic Index noodles
76	Shelf stable Jower flour
77	Cereal flekes- jowar
78	Ozone Based Disinfection System
79	Tamarind Candy
80	Shelf-stable varieties of curry pastes for vegetarian & non-vegetarian traditional cuisines,
81	Preparation of Shelf stable biriyani paste.
82	Wafers: Egg, Chicken and Fish
83	Potato wafers/chips
84	Fruits & vegetables: canning of
85	Ginger & Garlic Paste
86	RTS Fruit Juices and Beverages
87	Bottling of Sugarcane Juice
88	Groundnut (Peanut) butter
89	Convenience Flour from Ragi Suitable For Stiff Porridge
90	Malted weaning food
91	Preparation of beverage mix from malted ragi
92	Compounded Asafoetida
93	Instant cake mix
94	Tomato Product Preparation
95	Paan Floured water

96	Spirulina choco bar & cereal bar
97	Chikki/Nutra chikki (3 formulation)
98	Fermented and Dehydrated Ready mixes for idly and dosa batter
99	Value added products from coconut-Instant adjunct mix, Instant filling mix, coconut rice mix, coconut bites
100	Whole Wheat flour Vermicelli
101	Protein rich Ragi vermicelli
102	Preparation of shelf stable roti from non wheat cereal and millet
103	Desiccated coconut
104	Upma Ready mix
105	Dry dehulling of sesame seed
106	Turmeric Powder Technology From Fresh Rhizomes
107	Roller milling process for semolina(sooji/rava) from millets and preparation of multimillets semolona
108	Instant rava idli mix from millets and multimillets semolina
109	Full fat soya flour : edible
110	Bland soy protein concentrate
111	Maize chips
112	Mutton pickle
113	Modified Atmosphere packaging of minimally processed vegetables
114	Online fortification of atta or maida
115	Chestnut based gluten free cookies
116	Fruit syrups and squashes
117	Tutty-Fruity
118	RTE Low Fat flaked spicy maize /corn snack
119	Mari gold oleoresin
120	Instant gravy mixes (dehydrated)
121	Instant upma mix from millets and multimillets semolina
122	Finger millet based multigrain semolina for preparation of upma, Kesaribath, Porridge & others
123	Instant halva mix from millets and multimillets semolina
124	Instant rava idly mix from millets and multimillets semolina.
125	Virgin Coconut Oil
126	RTS Fruit juice and Beverages
127	Spirulina Choco bar and Spirulina Cereal bar
128	Nutra Chikki with added Spirulina
129	Tomato products: preparation
130	Nutri Fruit bars with immune boosters
131	Shelf Stable Chapati

132	Continuous idli making unit
133	Modified atmosphere packaging of minimally processed vegetables
134	Fruit syrups and squashes
135	Improved process for preservation of Neera
136	Neera concentrate
137	Tamarind candy
138	Eggless cake premix
139	Preparation of shelf stable roti from non wheat cereal and millet
140	Process for the preparation of gluten free bakery products
141	Raw banana powder
142	Osmo-air dried fruits (Amla, Jackfruit, Pineapple & Mango)
143	Bio preservation of RTE sugarcane chunks
144	Herbal fogging disinfectants for mist sanitizer system
145	Sugar free biscuits
146	Sugar free cup cake
147	Sugar free cake rusk
148	Coffee concentrate
149	Potato wafers/chips
150	Fortified mango bar
151	Pickles and chutnes preparation
152	Prawn pickle
153	Mutton pickle
154	Meat pickle
155	Instant coffee cubes
156	Sugarcane juice spread
157	Ginger Beverage
158	Paan flavoured water
159	High protein biscuits
160	High protein Rusk
161	Annatto dye: preparation
162	Deep fat fried and flavoured cashew kernels
163	Desiccated coconut
164	Malted weaning food
165	Process for flovour essence from decalepis
166	Plant growth promoter: containing n-triacontanol
167	Water soluble turmeric colourant (odourless)

168	Instant products form moringa leaves
169	Roasted and flavoured cashew kernels.
170	Pasta: Chocolate, Multigrain, Legume based
171	Preparation of ready to cook multigrain whole mix for drink/porridge
172	Tamarind juice concentrate & powder
173	Process for instant tomato crush, tomato rasam mix and tomato rice bath mix
174	Dehydrated whole lime
175	Pulse based papads
176	Online fortification of atta/maida
177	Egg wafers
178	RTE shelf stable egg crunchy bites
179	Dehydration egg cubes
180	Egg loaf
181	Instant upma mix millet and multimillet semolina
182	Instant halva mix millet and multimillet semolina
183	Shelf stable jowar flour
184	Shelf stable chicken biriyani
185	Chicken wafers
186	Chicken pickle
187	Shelf stable kabab mix with chicken meat
188	Shelf stable Chicken tit-bits
189	Preparation of shelf stable biriyani paste
190	Instant mushroom soup mix
191	Making superior quality of white pepper
192	Fermented and dehydrated ready mixes for dosa batter
193	Spray dried refined papain
194	Coffee leaf brew mix
195	Ragi based papads
196	Coffee flakes based mouth freshener
197	Fish Pickle
198	Fish Wafer
199	Prawn wafer
200	Preparation of beverage mix from malted ragi
201	Potato flour
202	Mustard / Rape seed integrated processing
203	Chikki with moringa
204	Processed Besan (Bengal Gram Flour) for sev and boondi preparation
205	Quick cooking, germinated and dehydrated pulses

206	RTE convenience food-Khakra
207	Ready mix: Pakoda
208	Dolymix, a ready to use mix for soft and enhanced number of IDLYS
209	Moulding machine for besan, soji/rava and similar laddus
210	Layered parotta (South Indian)
211	Online fortification of atta (Whole wheat flour)/Maida (Refined wheat flour)
212	Nutra chikki with added spirulina
213	RTS Fruit juices and beverages
214	Pickles and chutneys: preparation
215	Rural based biotechnological production of spirulina
216	Eggless cake premix
217	Ready to cook multigrain whole mix for drink/porridge
218	Fermented and dehydrated ready mixes for idli/dosa batter
219	Virgin coconut oil
220	Ready mix: upma
221	Baking Powder
222	Roller milling process for semolina (sooji/rava) from millets and preparation of multimillets semolina
223	Instant halva mix from millets and multimillets semolina
224	Instant Upma mix from millets and multimillets semolina
225	Instant Rava idli mix from millets and multimillets semolina
226	Nutri fruit bars with immune boosters
227	Instant moringa leaf based products
228	Fruit syrups and squashes
229	Preparation of beverage mix from malted ragi
230	Preparation of shelf stable biriyani paste
231	Shelf-stable varieties of curry pastes for vegetarian & non-vegetarian traditional cuisines (Shahi Paneer, Pindi Channa, Sambar (Without coconut), Dal Tadka, Kitchen King)
232	Preparation of ready to eat shelf stable egg crunchy bite
233	Instant traditional foods: Sambar
234	Ready mix: Maddur vada
235	Instant Idly Mix
236	Spice Mix : Puliogre
237	Roasted and flavoured cashew kernels

238	Low GI beverage for diabetics
239	High protein biscuits
240	High protein rusk
241	DOLY MIX, a ready to use mix for soft and enhanced number of IDLYS
242	Sugar free biscuits
243	Sugar free cake rusk
244	Sugar free rusk
245	Sugar free cup cake
246	Sugar free bread
247	For both (Process for extension of shelf life of bread with natural preservatives)
248	A Process for the preparation of gluten free bakery products
249	Multigrain nutria cookies
250	Bar cake
251	Multigrain pasta
252	Low Glycemic Index Noodles
253	Layered parotta (South Indian)
254	Legume based pasta
255	Process for production of quinoa germ
256	Instant cake mix
257	Dipping oil formulation for grapes
258	Herbal fogging disinfectants for mist sanitizer system
259	Tomato products: preparation
260	Dehydrated drumstick powder
261	Jamun Fruit products (Squash, RTS beverage, Syrup)
262	Fruit bar: Apple, Banana, Guava, Mango (All 4)
263	Improved Banana Fruit bar
264	Osmo-air dried Fruits (Amla, Jackfruit, Pineapple
265	Fruits & vegetables: canning of
266	Food for diabetics
267	Quick cooking, germinated & dehydrated pulses
268	Low fat expanded green snack using moringa
269	Pulse based papads

270	Ragi Based Papads
271	Preparation of shelf stable roti from non-wheat cereal and millet
272	Convenience flour from ragi suitable for stiff porridge
273	A Green process for Production of Methylxanthines for food and other applications
274	Chicken & Egg wafers
275	Preparation of Shelf stable Egg Albumin and Egg Yolk Cubes
276	Instant gravy mixes (dehydrated)
277	Preparation of dehydrated egg cubes
278	Meat/Fish/Chicken/ Egg/Pork/Prawn Wafers
279	High Performance Advanced Oxidation process for STP's Grey water and industrial waste water (Food and Non Food)
280	Dehydration of coriander foliage
281	Compounded Asafoetida
282	Tamarind Juice Concentrate
283	Ginger paste
284	Garlic paste
285	One time Royalty (SPRAY DRIED PAPAIN)
286	Instant traditional foods: Rasam
287	Groundnut (Peanut) butter
288	Multigrain cereal legume bar & puffed rice bar
289	Moringa Chikki
290	Energy Food: New formulation
291	Ready mix: Dosa
292	Tamarind Candy
293	Ready mix: Jamun
294	Production of soya protein hydrolysate
295	Chikki/Nutra chikki (3 formulation)
296	Fruit dehydration: Banana
297	Instant gravy mixes (dehydrated) – Madras kurma, Multi-Purpose Gravy, Biryani mix.
298	Instant products from moringa leaves
299	Preparation of shelf stable biriyani paste
300	Convenience flour from ragi suitable for stiff porridge
301	Preparation of shelf stable roti from no wheat cereal and millet (Ragi, Rice, Maize, Jowar, Bajra)
302	Tamarind Juice Concentrate
303	Fruit bar: Mango
304	Fruit jams & jellies: Preparation
305	Paan flavoured water
306	Preparation of Ready-to-use Idly/Dosa Batter in retail packs
307	Ginger paste
308	Garlic paste
309	Ginger beverage
310	Pickles and chutneys: Preparation
311	Shelf stable jowar flour
312	Spirulina choco bar and cereal bar
313	Osmo-air dried: Mango
314	Tomato Products: preparation
315	Layered parotta (South Indian)

316	Eggless cake premix
317	Fermented and dehydrated ready mixes for idli/dosa batter
318	Instant upma mix from millets and multimillets semolina
319	Instant halva mix from millets and multimillets semolina
320	Instant rava mix from millets and multimillets semolina
321	Coffee concentrate
322	Egg wafers
323	Preparation of Ready to eat shelf stable egg crunchy bite
324	Preparation of Protein, vitamin and mineral fortified chikki
325	Preparation of ready to cook multigrain whole mix for drink/porridge
326	Chikki/Nutra chikki (3 formulations)
327	Millet based cookie
328	Pulse based papads
329	Bottling of Sugarcane Juice
330	Decortication of Ragi
331	Bottling of Sugarcane Juice
332	Doly Mix
333	Fermented & dehydrated ready mixes for idli/dosa batter
334	Chocolate rich in healthy polyphenols
335	Instant traditional food: Sambar
