

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH
LOK SABHA
UNSTARRED QUESTION NO. 5088
(ANSWERED ON 02.04.2025)**

CSIR'S CONTRIBUTIONS DURING INTERNATIONAL YEAR OF MILLETS

**5088. Shri Shashank Mani:
Shri Devusinh Chauhan:
Shri Dileshwar Kamait:**

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) whether the Council of Scientific and Industrial Research (CSIR) has made contributions during the International Year of Millets to popularize millets and advance millet research, if so, the details thereof; and**
- (b) whether funds have been earmarked by CSIR specifically for millet research, if so, the details thereof?**

ANSWER

**MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE
MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES**

(DR. JITENDRA SINGH)

- (a) CSIR-Central Food Technological Research Institute, Mysore - a constituent laboratory of the Council of Scientific & Industrial Research (CSIR) has been carrying out research work on millets, covering both basic and applied research. The institute is carrying out extensive research work on millets under different verticals, such as establishing the health benefits, processing of millets for value addition, developing different products and technologies on millets including machinery development.**

The significant initiatives undertaken by CSIR in popularising millets and engaging in Millet research during the International Year of Millets is as follows:

- CSIR has launched a mission project on Millets with the following objectives:**
 - Nutritional profiling of 100 varieties of millet**
 - Promotion of region-specific millet products**

- **Shelf life enhancement of millet's products**
- **Global awareness of the health and nutritional attributes of millets**

CSIR-CFTRI is the nodal laboratory and nine other CSIR laboratories are participating in this mission-mode project.

- **Around 130 varieties of millets collected from various millet growing areas of the country have been analysed for nutritional composition, nutraceutical value, bio-accessibility of minerals like calcium, iron and zinc, protein and starch digestibility, amino acid composition, lipid profile, available lysine and anti-nutrients like phytic acid, oxalic acid, trypsin inhibitors. Released varieties popularly grown, hybrids, biofortified varieties and varieties from the tribal regions were collected for analysis. The data for each variety was compiled in the form of a book entitled “Millets of Bharath Vol 1” which was released in October 2024. This study will identify millets with a better nutritional profile that could be popularized. Further, the selected varieties were subjected to processing like refining, popping, malting etc., to understand the status of the nutrients and anti-nutrients.**
- **The survey on millet consumption patterns was conducted in urban, rural and tribal cohorts of Karnataka, Telangana, Maharashtra, Odisha and western Himalayan millet growing and consuming regions. During the survey, around sixty recipes for millet-based traditional foods were collected. These foods were prepared in the laboratory and the nutritional profile along with the Effective Glycaemic Index (eGI) has been determined in the laboratory. The millet-based traditional foods along with the nutritional profile is being compiled in the form of a compendium.**
- **Two millet-based products viz., Siddu and nuggets have been identified in *Poshan Abhiyan* and Mid Day Meal (MDM) programs to tackle malnutrition in the Himalayan region.**
- **To promote the health benefits of millets, convenient and palatable products have been developed, including:**
 - **Millet-based beverages, enhanced with xerobiotics, spice bio-actives, and indolamines for added nutrition and flavour, and**
 - **Ready-to-eat products, such as millet noodles and semolina, to offer menu diversity and convenience for the target population.**
- **Large-scale extraction of Edible oil from millet bran has also been achieved.**
- **Blockchain technology for Millet Supply Chain and Life Cycle Assessment for Ragi in Kerala is completed and the survey is being extended to other states like Karnataka and Tamil Nadu.**

- **Bio-degradable cutlery using the milling by-product from millet milling has been developed. Edible cutlery from finger millet has also been developed, paving the way for innovation in circular economy in millet processing.**
- **An innovative animal fodder formulation has been developed using delignified cellulose derived from millet by-products. This enhanced fodder offers: a) an Improved nutritional profile and b) enhanced digestibility, providing a high-quality nutritious feed option for livestock.**
- **Sensors for the detection and quantification of gluten content in millet-based products have been developed. Sensors for the detection of mycotoxins have also been developed.**
- **A novel pheromone formulation for managing stored pests has been successfully developed and tested. The formulation has been scaled up for industrial production, paving the way for its commercial application in pest control.**
- **A co-fumigation System (Biofumigants & Ozone) for the prevention of stored grain pests of Sorghum and Pearl millets is also in place.**
- **To promote the adoption of millets, capacity-building initiatives have been undertaken, including:**
 - **Training and mentoring programs for start-ups focused on millet-based products**
 - **Raising awareness through published articles in magazines**
 - **Broadcasting millet-related content on All India Radio**
 - **Telecasting two live programs on Doordarshan**

These efforts aim to popularize millet and encourage their inclusion in mainstream diets.

- **CSIR-CFTRI co-organized two prominent conferences that brought together experts and stakeholders to discuss key issues and opportunities related to millets, nutritional security, and economic development. The two conferences are:**
 - **TRIMSAFE-9th IFCON**
 - **Millets for Achieving Nutritional and Economic Security**
- **As part of globalization and popularization of millet products, a multi-millet bun with 5 millets was developed co-partnering with McDonald's, which was launched on September 04, 2023.**

(b) CSIR has earmarked/allocated Rs.19.00 crores for the Millet Mission project for a period of 2 years (2023-2024 to 2024-2025).
