

GOVERNMENT OF INDIA  
MINISTRY OF AGRICULTURE AND FARMERS WELFARE  
DEPARTMENT OF AGRICULTURAL RESEARCH AND EDUCATION

**LOK SABHA**  
**UNSTARRED QUESTION NO. 4400**  
TO BE ANSWERED ON 28<sup>th</sup> MARCH, 2023

**DAIRY RESEARCH TECHNOLOGY**

4400. SHRIMATI MANJULATA MANDAL:  
SHRI SELVAM G.:  
SHRI DHANUSH M. KUMAR

Will the Minister of AGRICULTURE AND FARMERS WELFARE  
कृषि और किसान कल्याण मंत्री be pleased to state:

- (a) the number of institutions engaged in the dairy research technology and education in the country;
- (b) whether the Government which has set up National Dairy Research Institute has contributed extensively for the development of animal husbandry sector and if so, the achievement made by NDRI since its inception;
- (c) the R&D activities under taken by the NDRI along with funds sanctioned during each of the last three years and the current year;
- (d) whether the Government has asked NDRI to adopt 100 villages of the country and develop animal husbandry;
- (e) if so, the details thereof and the details of steps taken in this regard; and
- (f) the steps taken by the Government to increase per cattle milk production in the country during the last three years along with the impact thereof on per cattle milk production?

**ANSWER**

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE  
कृषि और किसान कल्याण मंत्री (SHRI NARENDRA SINGH TOMAR)

- (a) Twenty-eight Dairy Science/Dairy Technology Colleges have been setup across the country offering education and research in the dairy sector.
- (b) National Dairy Research Institute (NDRI) Karnal, established in 1923, has contributed significantly in the field of Research and Development in Indian Dairy and animal husbandry sector. As a result, milk production in the country has increased significantly over the years. Today India is the largest producer of milk.

Some of the major scientific achievements of the NDRI are as follows:

- i. Karan Swiss and Karan Fries two crossbred cattle developed and adopted by the farmers.
- ii. "PRATHAM" and "GARIMA", the world's 1<sup>st</sup> In vitro fertilization (IVF) and cloned buffalo calves were produced.
- iii. A male cloned buffalo calf "Shreshtha" was produced from cryo-preserved semen of high pedigree dead bull.
- iv. Development Technological packages for the industrial production of a variety of indigenous dairy products.
- v. Development of High value added dairy products such as probiotic cheeses & dahi, sports drinks, low cholesterol ghee, herbal ghee, micronutrient fortified dairy products and low calories products.
- vi. Development of Milk-Millet Composite foods viz. Bajra (Pearl millet) *lassi*, sorghum (*Jowar*) *lassi*, Barley based fermented milk beverage; milk-millet composite based bakery, snack foods and low cost nutri-mix.
- vii. Rapid detection kits for various adulterants and contaminants in milk & milk products.
- viii. Developed Paper Strip Tests for rapid detection of common adulterants in milk
- ix. Area specific mineral mixture for animals, anionic & cationic mineral mixture for enhancing milk productivity was developed.
- x. Development of Technologies for by-pass fat, by-pass proteins and CLA-enriched milk.
- xi. Commercial Model Dairy Plant with a processing capacity of 60,000 L/ day that serve as an interface between Institute and Industry was established. Plant also offers "Hands-on-Training" opportunities to UG students.
- xii. Establishment of "Feed Quality Control Laboratory" to ensure-strict quality check on feeds for bovine livestock.
- xiii. Distributed 27.66 lakh frozen semen doses and 14.78 lakh ml of liquid semen of elite bulls of cattle and buffalo in field.
- xiv. Initiated "Dairy Education at Farmer's Door" and "Farmers School" as innovative extension programmes.

**(c)** The following major research and development (R&D) activities have been conducted by NDRI in the last three years and in the current year:

- i. Genetic Improvement of Milch Animals through Identification and Dissemination of Superior Germplasm by Application of Emerging Reproductive and Molecular Technologies.
- ii. Development of State-of-the-art Dairy Production Systems using better Housing and Fertility Management Practices.
- iii. Raising Productivity of Dairy Animals through Improved Feeding Strategies, Efficient Nutrient Utilization and Use of Non-Conventional Feed Resources
- iv. Research on Nutraceuticals from Milk, Functional Foods with Prebiotics, Probiotics, Micronutrients, and Other Bioactive Compounds for Improved Human Health.
- v. Value Addition to Dairy Products through Application of Emerging Technologies, Modelling Approaches, Process Up-gradation, Biotechnological Interventions, Nutraceutical enrichment, Mechanized Manufacturing & Novel Packaging Systems.
- vi. Clean Milk Production with a Focus on Emerging Health Concerns and Development of New Generation Tools for Ensuring Quality Control through Application of Newer Chemical and Biotechnological Concepts.

- vii. Promotion of Dairy Enterprise through Transfer of Technologies, Improved Farm Financing, Supply Chain Management, and Better Market Access.
- viii. Improvement of Bovines of the Southern Region for Productive and Reproductive Performance through Precision Management.
- ix. Strategic and Applied Research for Improvement of Production, Management and Economic Aspects of Dairying and Dissemination of High Quality Cattle Germplasm to the Farmers in Eastern India.

The funds sanctioned to the institute during last three years and the current year:

Name of the Institute	2019-20 (in lakhs)	2020-2021 (in lakhs)	2021-2022 (in lakhs)	2022-2023 (in lakhs)
ICAR-NDRI, Karnal	21491.03	22830.34	23449.96	25185.04

**(d) and (e)** The project on Ration balancing was taken in Muzaffarnagar district of U.P. between 2016-18 funded by National Dairy Development Board under which 106 villages were adopted.

The technologies developed by NDRI are disseminated to the farmers in adopted villages. At present the activities are ongoing in 261 villages benefitting 5491 farmers of different states. The major aim of this field oriented approach is to promote the 'Direct Interface' of Scientists with the farmers to step up the lab-to-land dissemination process, by providing the required information, knowledge and advisory services like Capacity building of women Self Help Groups, Natural farming practices, Climate resilient dairy farming practices, Training & Demonstration of the scientific dairy farming practices, Impact assessment of the adopted technologies, Dairy & Crop based interventions, Entrepreneurship development, Agromet advisory services, Farmers Farm School, on a regular basis to the farmers in the adopted villages.

**(f):** Some of the major steps taken by the Government to increase per cattle milk production are as below:

- i. The Government has taken steps under Rashtriya Gokul Mission (RGM) for the development and conservation of indigenous breeds and increase the milk production and productivity in the country.
- ii. The ICAR implements the Indigenous Breeds Project (IBP), which is aimed at genetic improvement of important milch breeds of cattle in the country such as Gir, Kankrej and Sahiwal for increasing their Per cattle milk production.

The milk production has increased by 33 percent in Gir, 44 percent in Kankrej and 24 percent in Sahiwal through use of improved male germplasm and better management options.

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