O.I.H.

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

LOK SABHA
STARRED QUESTION NO. 28
TO BE ANSWERED ON 18/07/2017

DAIRY RESEARCH TECHNOLOGY

***28. DR. RAMESH POKHRIYAL "NISHANK":**

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

(a) the number of institutions working in dairy research technology and education sector in the country at present;

(b) the steps taken by the Government to increase per milch cattle milk production in the country during the last three years and the current year along with the impact thereof; and

(c) the details of the special efforts made by the Government for marketing of milk of native cow breeds in various States of the country in view of its nutritional value?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण मंत्री **(SHRI RADHA MOHAN SINGH)**

(a) to (c): A Statement is laid on the Table of the House.

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STATEMENT IN RESPECT OF PARTS (a) to (c) OF LOK SABHA STARRED QUESTION NO. 28 TO BE ANSWERED ON 18/07/2017 REGARDING "DAIRY RESEARCH TECHNOLOGY"

(a) There are three major research institutes under ICAR working on Dairy Research and technology. They are ICAR-National Dairy Research Institute, Karnal, ICAR-Central Institute for Research on Cattle, Meerut and ICAR-Central Institute for Research on Buffaloes, Hisar. Besides, there are nineteen Dairy Science colleges under state Agricultural Universities/Veterinary & Animal Sciences Universities in the country working on Dairy Science & Technology. List of these are given at **Annexure-I**.

(b) ICAR-CIRC, Meerut through its AICRP on Cattle is implementing a mega programme involving Frieswal – A crossbred Cattle strain and improvement & conservation of indigenous cattle breeds for increasing the milk production potential of cattle which contribute significantly to milk pool of the country. The major achievements of the programmes are given as **Annexure-II & III**.

In order to complement and supplement the efforts made by the States to enhance milk production and productivity of bovines, Government of India has taken following steps during last three years (details given at **Annexure-IV**):

(i) National Programme for Bovine Breeding & Dairy Development (NPBBDD)-initiated in 2014-15 for genetic upgradation of bovine population through extension of AI coverage;

(ii) Rashtriya Gokul Mission (RGM)- initiated in December 2014 as a part of NPBBDD for conservation and development of indigenous bovine breeds;

(iii) National Mission on Bovine Productivity a new initiative initiated during November 2016 year for increasing milk production and productivity of bovines through advanced reproductive technique, Pashu Sanjivni, establishment of National Bovine Genomic Centre for Indigenous Breeds and E Pashu Haat Portal.

(iv) National Dairy Plan - World Bank assisted programme implemented in major 18 dairy States. NDP envisages genetic upgradation of bovine population through increasing availability of high genetic merit disease free bulls and strengthening semen stations. NDP-I has focus on development and conservation of indigenous breeds and 12 indigenous cattle and buffalo breeds are covered under the programme.

(v) Establishment of two National Kamdhenu Breeding Centres as a center of excellence and repository of indigenous bovine breeds for genetic upgradation of indigenous breeds in a scientific and holistic manner.

(c) Marketing of milk and milk products of native cow breeds is promoted under Rashtriya Gokul Mission. Funds have been released under the scheme for processing and marketing of milk of indigenous cow breeds.

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Annexure-I
[Part (a) of Lok Sabha SQ No.28 for 18/07/2017]

List of Dairy Science/Dairy Science and Technology Colleges in the Country

Sl. No.	Name of the College	e-mail
1.	SMC College of Dairy Science Anand, AAU, Anand, Gujarat.	principaldsc@yahoo.com (269- 261030,225830)
2.	College of Dairy Science, Dantiwada GAU, Dantiwada, Gujarat	drskroy1954@yahoo.co.in (02748-278678)
3.	Dairy Science College (Kamdhenu University), Amreli.	dscamreli@jau.in (02792-229456)
4.	Mansinhbhai Institute of Dairy & Food Technology, Mehsana, Dudhsagar Dairy Campus, Post Box No. 1, Highway. Mehsana-384 002,	helpdesk@midft.com (0276-2243777)
5.	College of Dairy Technology, Raipur Krishak Nagar. Raipur, IGKV, Raipur, Chhattisgarh	plchoudhary@ yahoo.com (9424765836)
6.	College of Dairy Science and Technology, GADVASU, Ludhiana, Punjab	deancodst@*gadvasu*.in. (0161-2553363, 2553308) Phone : (0161) 2553342-43
7.	College Dairy Technology, Udgir College of Dairy Technology, COVAS Campus, Kavalkhed Road, Latur, Udgir, MAFSU, Nagpur, Maharashtra - 413 517	spchangade@gmail.com cdtudgir@gmail.com (02385-254754/253754)
8.	The College of Dairy Technology CDT, Warud (Pusad) Distt. Yaovatmal - 445 204, MAFSU, Nagpur, Maharashtra.	addtcwarud@gmail.com (07233-248696)
9.	Dairy Technology Programme, Kama Reddy , Nizamabad Dist.,Tirupati Sri Venkateswara Vetrinary University, Tirupati	ravikumar_sribhasyam@yahoo.com
10.	College of Dairy Technology, Kamareddy, Nizamabad District, Telangana State – 503 111	cdtkspvnrtsukmr@gmail.com Phone: +91-8468-220993 Fax: +91-8468-220993
11.	Faculty of Dairy Technology FDT, Mohanpur, West Bengal	maity.tk@gmail.com
12.	College of Dairy & Food Science Technology, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan	cdfst2011@gmail.com (+91-294-2470139 (O) +919460082861 (M)
13.	SGIDT, Patna, Sanjay Gandhi Institute of Dairy Technology, Jagdeopath, BVC Campus, Patna- 800014	**Email:** sgidtpatna@gmail.com **Tele Phone:** 0612-2225910 **Tele fax:** 0612-2226347

14.	College of Dairy Science And Technology, Kerala Veterinary and Animal Sciences University KELTRON Campus, Karakulam P.O, Thiruvananthapuram, Kerala, India - 695 564	Phone: 91 – 472 – 2888288, Mob: 09497412303 Email: officecdsttvm@kvasu.ac.in
15.	College of Dairy Science & Technology, Kolahalamedu, Mannuthi,Thrissur, Kerala	deancdstmty@kvasu.ac.in (9446229673)
16.	DSC, Chennai Institute of Food and Dairy Technology, Koduvalli, Chennai-52, TANUVAS, Chennai	deanffs@tanuvas.org.in (044-27680218)
17.	Dean (Dairy Science) Dairy Science College, Bangalore Hebbal, Bangalore 560 024 Karnataka, India	deandch@gmail.com; nmdcy@yahoo.com (080-23514575)
18.	DSC, Hebbal, Bangalore Nandinagar, P.B.No. 6 Bidar, Karnataka, KVA & FS, Bidar	deandch@gmail.com; nmdcy@yahoo.com (080-23514575)
19.	Sam Higginbottom Institute of Agriculture Technology and Sciences, NH-27, Mahewa East, Naini, Allahabad, UP	sdean_dairy@shiats.edu.in (9415635168)

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Annexure-II

[Part (b) of Lok Sabha SQ No.28 for 18/07/2017]

MAJOR ACHIEVEMENTS OF ICAR SCHEMES RELATED TO CATTLE IMPROVEMENT

- The elite Gir, Kankrej and Sahiwal cows identified and registered under the Indigenous Breeds Project produced average 305-days milk yields of 3238, 3553 and 3393 kg, respectively.
- The genetic improvement programme implemented under the Frieswal project has developed a crossbred (HF x Sahiwal) breed whose average 300 days milk production increased from 2774 kg during 1989 to 3317.53 kg during 2015. The mature lactation yield of Frieswalis 3612 kg.
- The average age at first calving of 1126 days of this cattle breed in 1995 has been reduced to 972.18 days in 2015.
- Through interventions of FPT Programme of the Institute, milk yield of the progenies in the adopted villages has improved by 40.60 % (2697.8 kg in 1995 to 3733 kg in 2015-16) at FPT operational areas at GADVASU, Ludhiana. The improvement is about 39.0% (1958.42 kg in 1994 to 2895 kg in 2015-16) at Kerala Veterinary and Animal Science University, Mannuthy, 19 % (2281.0 in 2009 to 2702.9 kg in 2015-16) improvement in GBPUA&T, Pantnagar and by 11.00 % (2930.40 kg in 1995 to 3126.00 kg in 2015-16) at BAIF, Uruli-kanchan, Pune.
- The age at first calving has decreased significantly by 30.0% (from 1192.0 in 1994 to 1052.7 days in 2015) in GADVASU, Ludhiana, 16.54% (1136.4 in 1992 to 1062.2 days in 2015-16) in KVASU, 12.30% (991.3 in 1994 to 941.0 days in 2015-16) in BAIF, Pune and 28.0% (1146.0 in 2009 to 1110.0 days in 2015-16) in GBPAU&T, Pantnagar.

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Annexure-III

[Part (b) of Lok Sabha SQ No.28 for 18/07/2017]

Research Programmes relates to Dairy Technology

- Genetic Improvement of Milch Animals through Identification and Dissemination of Superior Germplasm by Application of Emerging Reproductive and Molecular Technologies.
- Development of State-of-the-art Dairy Production Systems using better Housing and Fertility Management Practices.
- Raising Productivity of Dairy Animals through Improved Feeding Strategies, Efficient Nutrient Utilization and Use of Non-conventional Feed Resources.
- Research on Nutraceuticals from Milk, Functional Foods with Prebiotics, Probiotics, Micronutrients, and Other Bioactive Compounds for Improved Human Health.
- Value Addition to Dairy Products through Application of Emerging Technologies, Modeling Approaches, Process Upgradation, Biotechnological Interventions, Neutraceutical Enrichment, Mechanized Manufacturing & Novel Packaging Systems.
- 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.
- Promoting Dairy Enterprise through Transfer of Technologies, Improved Farm Financing, Supply Chain Management, and Better Market Access.
- Improvement of Bovines of the Southern Region for Productive and Reproductive Performance through Precision Management.
- 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.
- Upliftment of Socio-Economic Condition of Tribal People through Integrated Livestock Farming In North Eastern Hill Region/Eastern Part Of India (TSP Programme).
- Improving the Livelihood through Dairy Farming in North Eastern Region of India (NEH Programme).

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Annexure-IV

[Part (b) of Lok Sabha SQ No.28 for 18/07/2017]

SCHEMES OPERATED BY DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING & FISHERIES, GOVT. OF INDIA

Schemes of Cattle Division:

1. National Programme for Bovine Breeding:

The National Programme for Bovine Breeding and Dairy Development (NPBBDD) has been launched in February 2014 with an integrated, holistic and scientific approach: to improve and upgrade the genetic makeup of bovines with the aim of enhancing their production and productivity; and development of dairy infrastructure for improved procurement, processing and marketing. The Programme aims to attain higher levels of milk production so as to meet the increasing demand and provide better remuneration to the farmers; while developing, preserving and conserving indigenous breeds. The Scheme has two components (a) National Programme for Bovine Breeding (NPBB) and (b) National Programme for Dairy Development (NPDD).

National Programme for Bovine Breeding (NPBB):

i) To arrange quality Artificial Insemination services at farmers' doorstep;
ii) To bring all breedable females under organised breeding through Artificial Insemination or natural service using germplasm of high genetic merits;
iii) To conserve, develop and proliferate selected indigenous bovine breeds of high socio-economic importance;
iv) To provide quality breeding inputs in breeding tracts of important indigenous breeds so as to prevent the breeds from deterioration and extinction;

2. Rashtriya Gokul Mission:

Rashtriya Gokul Mission, a project under the National Program for Bovine Breeding and Dairy Development, has been launched with the objective of conserving and developing indigenous Breeds in a focused and scientific manner with an outlay of Rs. 500 crores. The mission also envisages establishment of integrated cattle development centres 'Gokul Grams to develop indigenous breeds including upto 40% nondescript breeds. Details of Gokul Grams is as under:

State	No. and Locations of the Gokul Grams		Funds Sanctioned (Rs. In Crore)
	Nos. of Gokul Gram	Location	
Andhra Pradesh	1	Banawasi, Distt. Karnool	10.00
Chattisgarh	2	Bemetra, Dhamtari	7.46
Gujarat	1	Dharampur	41.82
Haryana	2	Hissar	15.00
Karnataka	1	Kurekippu Bellary	5.00
Maharashtra	3	Palghar, Amravati-Pohra and Tathtawade	27.00
Madhya Pradesh	1	Ratona Sagar	10.00

Punjab	1	Patiala	12.84
Uttar Pradesh	2	Varanasi and Mathura	10.82
TOTAL	14		139.94

Under the Rashtriya Gokul Mission till date 35 projects from 27 States have been approved with an allocation of Rs 582.09 crore and out of this an amount of Rs 226.02 crores has been released to the States.

3. **National Kamdhenu Breeding Centre:**

Most of the countries in the world at the national level have National Breeding Centre. "National Kamdhenu Breeding Centres" for development, conservation and preservation of Indigenous Breeds are being set up, as a Centre of Excellence to develop and conserve Indigenous Breeds in a holistic and scientific manner.. A Nucleus Herd of all the Indigenous Bovine Breeds (39 Cattle and 13 Buffaloes) will be conserved and developed with the aim of enhancing their productivity and upgrading genetic merit. The National Kamdhenu Breeding Centre, besides being a repository of indigenous germplasm, will also be a source of Certified Genetics in the Country. Under the scheme two National Kamdhenu Breeding Centres are being established one in northern region and other in southern region of India. An amount of Rs 25 crore each has been released to Madhya Pradesh and Andhra Pradesh for establishment of National Kamdhenu Breeding Centre in northern region and southern region respectively.

4. **National Mission on Bovine Productivity**

The National Mission on Bovine Productivity has been initiated from Novemebr 2016 in order to enhance milk production and productivity of bovines. The scheme has following four components:

a) **Pashudhan Sanjivani** :

- An animal Wellness Programme; encompassing provision of Animal Health cards ('*Nakul Swasthya Patra'*) along with UID identification of animals in milk and a National Data Base.

- Under the scheme 8.8 crore animals in milk will be identified using UID and their data will uploaded in the INAPH data base.

- Animal Health Cards (Nakul Swasthya Patra) will be issued to the animals covered under the scheme. The health card will have information on vaccination of animal, de-worming and treatment of animals

- This will play crucial role in control of spread of animal diseases, implementation of scientific breeding programmes. This will also lead to increase in trade of livestock and livestock products.

b) **Advanced breeding Technology**:

- Assisted Reproductive Technique to improve availability of disease free female bovines through of sex sorted semen technology.
- Under the scheme 150 sex sorting machines will be established at 10 semen stations in the country including semen stations managed by dairy cooperatives. Scheme envisages creation of facility for production of 8 million doses annually.
- Under the scheme 50 embryo transfer technology labs and In Vitro Fertilization labs will be established for exponential multiplication of elite animals of indigenous breeds.
- This will lead to increase in milk production and productivity of animals in an exponential manner.

c) National Bovine Genomic Center for Indigenous Breeds(NBGC-IB)

- In developed dairy countries genomic selection is used to increase milk production and productivity for attaining faster genetic gain.
- In order to increase milk production and productivity of indigenous cattle, a National Bovine Genomic Centre will be established in the country.
- By using genomic selection indigenous breeds can be made viable within few generations.
- This center will play crucial role in identification of disease free High genetic merit bulls of indigenous breeds.

E Pashu Haat Portal:

- For the first time in the country under the scheme National Mission on Bovine Productivity E Pashudhan Haat portal has been developed for connecting breeders and farmers regarding availability of quality bovine germplasm.

- Through the portal breeders/farmers can sale or purchase their breeding stock. Information on all forms of germplasm including semen embryos and live animals with all the agencies and stake holders in the country has been uploaded on the portal. Through this portal farmers will be aware about the availability of quality disease free bovine germplasm with different agencies in the country.

- The portal will lead to propagation of high genetic merit germplasm. Through the portal price evaluation will be available with the farmers/ breeders. Through the portal there will be no involvement of middlemen in sale and purchase of animals. Portal for sale and purchase of germplasm in all the forms is not available even in developed dairy countries.

- Information on 5.10 crores semen doses; 373 embryos and 17236 live animals is available on the portal.

Present Status:

- Proposals received have been examined and an amount of Rs 18.29 crores has been released to the State for implementation of Pashu Sanjivni (identification of 100 lakh animals and procurement of 15000 tablets).

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