

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

LOK SABHA
STARRED QUESTION NO. 295
TO BE ANSWERED ON 07/08/2018

NEW FARM TECHNOLOGIES

***295. SHRI SANJAY DHOTRE:**
SHRI RAHUL SHEWALE:

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

- (a) the details of the initiatives taken by the Government for innovation/development of new technologies in the farm sector across the country during each of the last three years and the current year;
- (b) whether the Government has developed any mechanism to disseminate information about such innovation/technologies to the farmers during the said period;
- (c) if so, the details thereof along with the number of farmers who availed benefits from such innovation/technologies during the said period;
- (d) whether the Government has launched Kisan Portal for the benefit of farmers in the country and if so, the salient features of such portal and its advantages to the farmers along with the number of farmers benefited from such portal since inception; and
- (e) the other steps taken/being taken by the Government in this direction?

ANSWER

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

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

STATEMENT IN RESPECT OF PARTS (a) to (e) OF LOK SABHA STARRED QUESTION NO. 295 TO BE ANSWERED ON 07/08/2018 REGARDING “NEW FARM TECHNOLOGIES”

(a) Indian Council of Agricultural Research (ICAR) has overall 102 institutions (Research Institutes 70, Bureau 6, Directorates 12 and National Research Centres 15) in agriculture and allied areas of research; 11 Agricultural Technology Application and Research Institute (ATARIs) and 82 AICRPs/Network projects mandated for coordinating, refining and demonstrating agricultural technologies/innovation in the country. The ICAR has played a pioneering role in bringing food and nutritional security in India through its research and technology development that has **enabled the country to increase the production of food grains, horticultural crops, fish, milk and eggs**, thus making a visible impact on the national food and nutritional security. During the last 4 years, ICAR laid greater emphasis on development/ adoption of new technologies such as- high yielding and multi-stress resistant/tolerant varieties/hybrids using conventional and genomic tools in major crops; multi-nutrients rich varieties of rice, wheat, maize, lentil and pearl millet and improved quality of mustard and soybean; blast resistant wheat varieties; transgenic varieties in cotton, pigeonpea and chickpea; exploitation of gene editing technology for improving desired traits in rice and wheat and development of extra-early/early maturing varieties of pulses especially mungbean and pigeonpea. The research efforts in Livestock, Poultry and fisheries sector have also resulted in the development of need based technologies for productivity enhancement and income supplementation by addressing the existing/ new emerging issues in order to bridge the gap between the potential and actual yield. Likewise, a number of technologies in the areas of farm mechanization, processing and value addition of the agro produce, cotton, jute, lac and gums were also developed by the ICAR research institutes during the last 4 years.

The new initiatives in farm sector taken and the technologies developed by the ICAR during the last three years and the current year include;

The research efforts of the Institutes/Centres/AICRPs have led to the development and release of 795 high yielding varieties of crops including 495 varieties/hybrids tolerant to various stresses (biotic & abiotic) in different field crops for cultivation under different agro-climatic conditions during 2014-2018 till date. In addition, 20 bio-fortified varieties of field and horticultural crops rich in Iron, Zinc, Vitamin A, Vitamin C etc. were also developed by ICAR. Besides these, 136 high yielding/ specialty varieties of horticultural crops were also developed by ICAR Institutes during this period. Keeping in view the demand of the horticulture industry, ICAR, during the last 4 years, developed processable varieties of fruit and vegetable crops which include; Pomegranate (2); Grapes (5); Litchi (3); Banana (2), Mushroom (1); Onion (3); Garlic (1) and Tomato (2).

ICAR established 150 pulses seed hubs to produce quality seeds of important pulse crops in collaboration with Department of Agricultural Cooperation & Farmers Welfare. These seed hubs produced 1.12 lakh quintals of certified quality seed during 2017-18 and paved the way for the record production of pulses in the country and achieving self-sufficiency in pulse production.

In livestock and poultry production, ICAR has developed 14 new strains (4 of backyard poultry, 9 of pigs and one sheep) during the last 4 years. For forecasting and forewarning of 13 important livestock diseases National Animal Disease Referral Expert System has been developed for timely and appropriate action. Vaccines against 9 major diseases of livestock have also been developed by the Council during the last 4 years. In fisheries and aquaculture, during the last 4 years ICAR developed 5 different high –value compounds and nutraceuticals for human health (i) Green mussel extract and (ii) Green algal extract for pain & arthritis (iii) Seaweed antidiabetic extract for type-2 diabetes (iv) Seaweed anti-obesity extract to combat obesity/dyslipidemia and (v) Seaweed anti-hypothyroidism nutraceutical to combat hypothyroid disorder. Breeding and seed production technology developed for 9 different fish species including 5 marine fish species suitable for open sea cage culture. Over 1600 cages have already been installed all along the coast of India. Developed a Rapid Detection Kits for detecting Formaldehyde and Ammonia contamination in fresh fish by paper strip method.

Six hundred twenty three district contingency plans has been developed and validated as well as conducted skill development programs for 40.9 lakh farmers. *Mridaprarikshak* a minilab for soil analysis developed to support Government's initiative of Soil Health Card. ICAR has also developed 45 Integrated Farming Systems (IFS) models in 23 states and 1 Union Territory covering all the 15 agro-climatic regions of the country. These models have been tested and validated in the fields of 1250 farmers each under various different agro ecologies covering 23 states of the country.

Farm implement and machines suitable for farmers under Indian conditions being developed and popularized by ICAR. During the last 4 years, ICAR developed 75 equipment/machines/gadgets and 37 products/ process protocols for mechanization of farm and postharvest operations. Established 652 custom hiring centres (annual net income per centre: Rs 2 to 4 lakhs); and established 49 agro-processing centres in rural catchments to encourage entrepreneurship and processing at the production sites.

(b) & (c): To disseminate information about such innovation/ technologies among the farmers, ICAR has established a network of 700 KVKs at the district level all over the country. During the last 4 years, KVKs have provided technological support to around 6.0 crore farmers, farm women and rural youth during last four years by conducting 6.45 lakh technology validation and demonstrations, capacity development of 53.96 lakh farmers, organizing extension activities for 540.04 lakh farmers. The KVKs produced and distributed 18.46 lakh quintals quality seeds of different field crops, 17.12 crore planting materials of different horticultural crops and 9.50 crore livestock strains and

fingerlings during the period. The KVKs also provided 10.23 crore agro-advisories on plant protection, weather information, market related information, animal husbandry, fisheries, etc. on the mobile of farmers.

ICAR, during the last 4 years, developed over 750 agriculture based start-ups and Agri-entrepreneurs including the Farmer Entrepreneurs in various areas of agriculture. Twenty four ICAR, Institutes have established Agri-business Incubation (ABI) Centers to provide the support for technology incubation activity and nurturing the techno-entrepreneurs, keeping in view the spectrum of technologies, available infrastructure and the core competency of the institutes.

(d) mKisan was launched to give a quantum leap in coverage of farmers and geographical area in a timely, specific, holistic and need based knowledge dissemination among the farmers by leveraging the power of mobile telephony in such a way that all sectors use this platform to not only reach out to the farmers but also to address their concerns and queries. There are more than 6000 experts registered from the Government of India (DAC, ICAR, DAHDF, IMD, CWC) and State Governments & its organisations down to Block level, SAUs, KVKs and AMFUs who send regular SMS advisories to **4.18 crore** registered farmers. Farmer can register for this SMS advisory service either by calling KCC or by web registration or by SMS. A farmer can receive crop specific advisories from various experts of Government on his basic mobile set. IMD also disseminates weather specific information to registered farmers through mKisan only. Thus, a farmer, who is not having access to digital infrastructure like computer, laptop, smart phones, internet etc., can also get crop specific location based advisories in his/her regional language on his basic mobile set.

(e) Apart from mKisan, ICAR has developed a Web Portal- Krishi Vigyan Kendra Knowledge Network which provides in-depth inputs regarding the wide spectrum of activities being conducted by various KVKs all over the country. Climate Resilient Initiatives at 121 KVKs and the National Initiative on Fodder Technology Demonstration (NIFTD) at 100 KVKs were taken up. For providing advisories on weather, Automatic Weather Stations have been installed by the Government at 100 KVKs through IMD. Besides, a total of 117 mobile based Applications have been developed by ICAR/ NARS for the users having access to the smart phones and the internet. Through these expert systems, the information about Agro advisory, weather, market price, plant protection etc. are provided to farmers and other stakeholders with the click of a button. The major developments in Information and Communicating Technologies include PUSA KRISHI; “riceXpert”, PulsExpert, E-Kapas, e-Pest Surveillance, Advisory System for Horti Crops, Pest Forewarning application and National Animal Disease Referral Expert System (NADRES) for forecasting/forewarning of 15 important livestock diseases.
