

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

**LOK SABHA**  
**UNSTARRED QUESTION NO. 1594**  
TO BE ANSWERED ON 12/02/2019

**AGRICULTURAL RESEARCH AND DEVELOPMENT IN JHARKHAND**

1594. SHRI LAXMAN GILUWA:

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

- (a) whether the Agriculture Research and Development Institutes are working for development of agriculture in Jharkhand;
- (b) if so, the details thereof, location-wise; and
- (c) the details of the agricultural works done by the said agricultural research and development institutes during the last three years?

**A N S W E R**

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE  
कृषि और किसान कल्याण मंत्रालय में राज्य मंत्री  
**(SHRI GAJENDRA SINGH SHEKHAWAT)**

- (a) Yes, Madam.
- (b) Following Agriculture Research and Development Institutes of ICAR are working for development of agriculture in Jharkhand.
  - Indian Institute of Agricultural Biotechnology (IIAB), Ranchi
  - Indian Institute of Natural Resins and Gums (IINRG), Ranchi
  - Indian Agriculture Research Institute (IARI), Hazaribagh
  - Regional Station of National Bureau of Plant Genetic Resources (NBPGR), New Delhi at Ranchi
  - Regional Station of Central Rainfed Upland Rice Research Station of National Rice Research Institute (NRRI), Cuttack at Hazaribagh

- Regional Station of Research Complex for Eastern Region, Patna at Ranchi
- Two Network Projects (i) conservation of Lac genetic resources and (ii) harvesting, processing and value addition of natural resins and gums taken up in Indian Institute of Natural Resins and Gums (IINRG), Ranchi.
- 30 Centres of All India Coordinated Research Projects AICRPs on different crops/commodities under Birsa Agricultural University, Ranchi
- 24 Krishi Vigyan Kendras (KVKs) at district level

(c) These Institutes/ Stations are undertaking Technology Development and promotional activities in various areas of agriculture in Jharkhand:

- Indian Institute of Agricultural Biotechnology (IIAB), Ranchi, established in 2012, is working on frontier areas of research in Agricultural Biotechnology and has developed silver, gold, zinc and copper nanoparticles and conducted preliminary bioassay to assess their efficacy. These nanoparticles have potential applications in precision farming, more efficient and targeted use of inputs, detection and control of diseases, capacity to withstand biotic and abiotic stresses etc.
- Indian Institute of Natural Resins and Gums (IINRG), Ranchi is working on the cultivation, processing and value addition aspects of natural resins and gums.
- Foundation stone of IARI, Jharkhand was laid by Prime Minister on 28 June, 2015. The Administrative-cum-Academic building was inaugurated on 27<sup>th</sup> January 2019 by Union Agriculture Minister. Twenty M.Sc. students of IARI, Ranchi have completed their degrees and twenty others are on rolls at present.
- The Network Projects and AICRP centres are engaged in conducting multi-locational trials and technology/ variety/breed development activities.
- KVKs are involved in assessment and demonstration of technologies with technological backstopping from State Agricultural Universities and ICAR Institutes in partnership with farmers and other stakeholders.

The details of the technologies/ products processes developed and the activities undertaken by these Institutions during the last 3 years is attached in **Annexure-I**.

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**Technologies/ products processes developed and the activities undertaken by ICAR Institutions during the last 3 years**

- Since May 2014 to till January 2019, a total of 81 high yielding, biotic or abiotic stress resistant varieties of various crops have been developed for Jharkhand comprising 54 cereals, 7 oilseeds, 6 pulses, 5 fibre crops, 7 forage crops and 2 sugarcane varieties.
- Popularization of biotechnology driven products like tissue cultured banana, marker-assisted selection (MAS) derived drought tolerant rice varieties like IR-64 *drt-1*, and high protein rice varieties like CR Dhan 310 and CR Dhan 311, high yielding variety of papaya (Red Lady) and several varieties of vegetables has been taken up.
- Eight explorations were undertaken during the last three years and 242 germplasm materials were collected. A total of 566 accessions were characterized for agro-morphological traits including rice, finger millet, *bael*, *jamun*, jackfruit, pigeon pea and rice bean.
- Identification and Cloning of Putative Key Genes involved in Terpene Biosynthesis of the Indian Lac Insect, *Kerriallacca* (Kerr).
- Screening of fruit *Ber* varieties for winter season *kusmi* lac production was done
- Isolation and characterization of root nodule bacteria from *Flemingia spp* was undertaken.
- Integrated Small Scale Lac Processing Unit (ISSLPU) was developed.
- Colour parameters of seed lac manufactured through Integrated Small Scale Lac Processing Unit and Small Scale Lac Processing Unit were developed/ refined.
- Development of *Acacia nilotica* gum-based silver nanoparticles.
- Utilization of guar and arabic gum blend in making millet nutri bar and peanut *chikky*.
- Enriched lac mud application for vegetable and floriculture production.
- Established Tamarind Processing Unit.
- Transforming Livelihood of Tribal Farmers in Assam through *kusmi* lac cultivation on *Ber* (*Ziziphus mauritiana*).

- Simple Sequence Repeat-Polymerase Chain Reaction (SSR-PCRs) were carried out for 27 pigeonpea genotypes with 63 primers to identify potential of germplasm for lac/lac seed purpose. Genetic relationship among the pigeon pea genotypes was deciphered based on the dendrogram.
- Novel super absorbent hydrogels were synthesized from guar gum, characterized and the synthesis was standardized to get maximum water absorption, up to 800 ml distilled water per gram dry weight. Biodegradation studies have confirmed that highly porous structure of hydrogels is almost completely biodegradable within 6 months under soil.
- Jharsukh, a crossbred variety of Pig and Jharsim a poultry variety suitable for back yard rearing were developed.
- To showcase the latest technologies of the IINRG, experts participated in eight Exhibitions / *Kisan Melas* wherein around 27790 visitors were acquainted with the different activities of Institute. Also participated in 4 *Kisan goshti* were also organized in different districts of Jharkhand that benefitted about 788 participants.
- During last three years, 990 On Farm Trials (OFT) and 24454 Front Line Demonstrations (FLD) were conducted by KVKs located in Jharkhand state. To update the knowledge and skills on modern agricultural technologies, 1.8 Lakh farmers were trained. 17.01 lakh farmers participated in various extension activities. In addition, 1273 tones seeds, 30.12 lakh planting materials and 11.2 lakh live-stock strains and fingerlings were produced and distributed among farmers. Further, 0.4 lakh soil, water, plant, manures samples were tested for quality parameters, and 1.2 lakh mobile agro- advisories were provided to farmers.

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