

RESEARCH HIGHLIGHTS

Technologies Developed

Three medium maturity field corn hybrids (IMH 222, IMH 223 & IMH 224) and a first low phytate maize hybrid PMH1-LP developed by ICAR-IIMR have been identified for release by the Varietal Identification Committee during the 65th annual maize workshop held from April 19-21, 2022 at CCS HAU Hisar.

Potential Genotypes

Two hybrids (IMH 2-20K-10 and IMH 2-20K-11) were promoted from AVT-I to AVT-II (Zone-III) and four hybrids (IMH 2-21K-4, IMH 2-21K-5, IMH 2-21K-6, IMH 2-21R-8) were promoted from NIVT-I to AVT-I (Zone-III) in AICRP-Kharif-2021. One entry of fodder maize (IIMFC 2) was promoted from IVTM 1 to AVTM

Important Research Activities

A total of nine inbred lines were converted into CMS based male sterile lines and their stability was confirmed at three locations, viz., Pantnagar, Ludhiana

& Hyderabad. The lines include CMS 117, CMS 116, CMS 284, CMS 323, CMS 323-I, CMS 323-II, CMS 410, CMS 1105 and CMS 1105-I, and showed 100% sterility across all the three locations. Similarly, the maintainer lines, viz., M 117, M 116, M 284, M 323, M 410 and M 1105 showed 100% fertility in these locations.

AICRP Trials: For *kharif* 2022, a total of 50 AICRP Trials comprising of breeding (38), pathology (8) and entomology (4) were constituted. The total number of entries was 356. Out of the total 356 entries, 107 entries were contributed by the private sector (22 different firms) and the rest of the entries (249) were received from 28 centres of AICRP on maize. For spring 2022, a total of 4 trials comprising of breeding (2) and pathology (2) were constituted.

Seed of 22 Public sector hybrids in AVT I and AVT II were shared with CIMMYT for ICAR-CIMMYT managed stress trials involving drought, waterlogging

S. N.	Name of the Hybrid	Type of Maize	Yield (t/ha)	Growing season	Maturity Group	Growing ecologies
1	IMH 222	Field Corn	10.19	Rabi	Medium	PB, HR, UP(W), UK (plain)
2	IMH 223	Field Corn	10.48	Rabi	Medium	PB, HR, UP(W), UK (plain)
3	IMH 224	Field Corn	7.23	kharif	Medium	UP€, BH, JH, WB, OD
4	PMH1-LP	Field Corn	9.56	kharif	Long	Irrigated condition in North Western Plains Zone



IMH 222



IMH 223



IMH 224



PMH1-LP



PMH-1

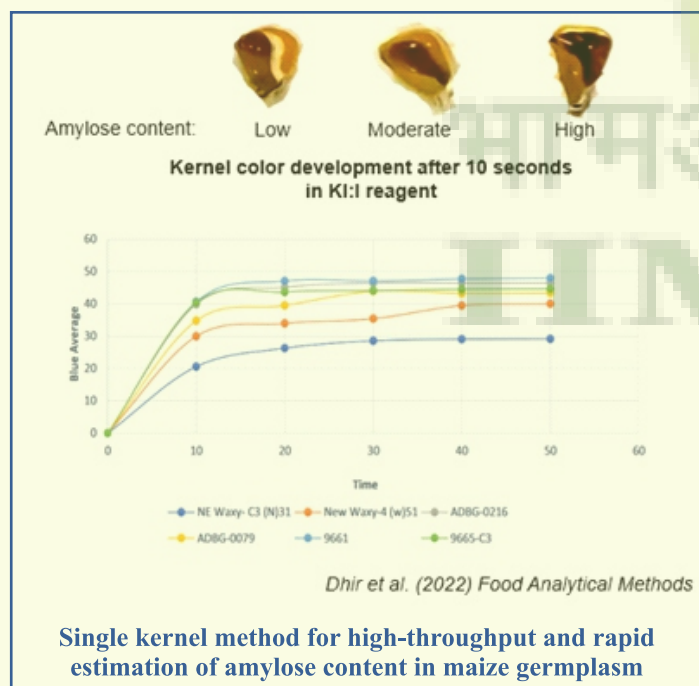
and heat stresses. Seed of 72 hybrids of public sector that were contributed for testing in NIVT Medium along with promising lines identified last year were shared with NDDDB, Anand Gujarat for Silage trials.

Maize Germplasm Field Day was conducted on March 28h March 2022 to strengthen maize germplasm base among the AICRP centers. A total of 548 maize germplasm comprising of normal, QPM, Sweet corn and popcorn were displayed for selection. 55 participants from different AICRP centers attended the programme and selected the material. Four hundred seventy three unique maize germplasm was provided to 30 different AICRP centers for strengthening their breeding programme.

Seven nitrogen-fixing bacteria were identified from conservation agriculture plots on the basis of their ability to grow in Nitrogen-free medium. These were isolated in pure cultures and their identity was confirmed using 16S rDNA sequencing.

Microbial strains with potential in delignification and sachharification of maize lignocellulose have been identified from various sources and are being characterised further.

The protocol of protein quality assessment was optimized using faster and manual methods for determination of protein and tryptophan content in maize. The findings enable a testing protocol of reduced time duration that can be used in resource-poor



settings for the determination of a protein quality assay in QPM.

A rapid protocol for screening of maize germplasm for amylose content was devised using cut grains (single kernel). This method has been made high-throughput through the use of video capturing device and subsequent correlation of the color developed with amylose content.

IMPORTANT EVENTS

Republic Day Celebration

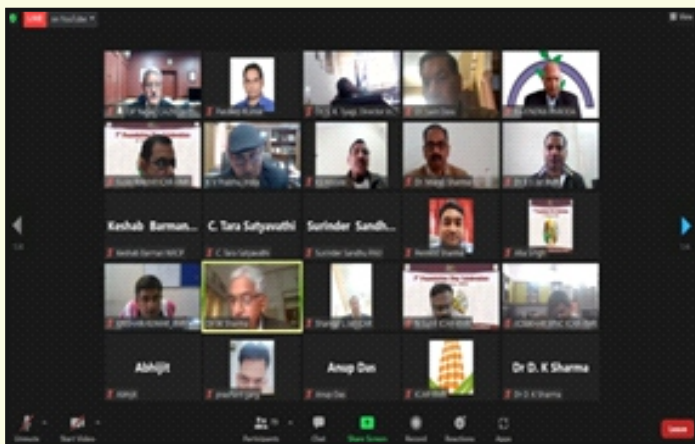
The 73rd republic day was celebrated with pride, enthusiasm and patriotic fervour by all the staff of the institute. On this occasion the National Flag was hoisted by the Director at the upcoming campus of the institute at Ladhawal, Ludhiana. The Director emphasized to express our respect for the National Flag, and our faith in the Constitution. He urged the staff to fully commit themselves to the welfare of our farmers.



Flag hoisting ceremony on the Republic Day

Institute Foundation Day Celebration

The institute celebrated its "7th Foundation Day" on February 9, 2022. Padma Vibhushan Dr. R.S. Paroda, Chairman, TAAS was the Chief Guest on this occasion. Delivering the Foundation Day Lecture, the Chief Guest said that the SDG-II is meant for attaining nutritional security and maize is the wonder crop among cereals to cope up with the climate change and achieve crop diversification, especially in Punjab, Haryana and Uttar Pradesh. Dr. Paroda regarded the partnership between Public Institutions and the Private Sector as important for the successful Maize Mission. The need for more intensive research on the Maize crop



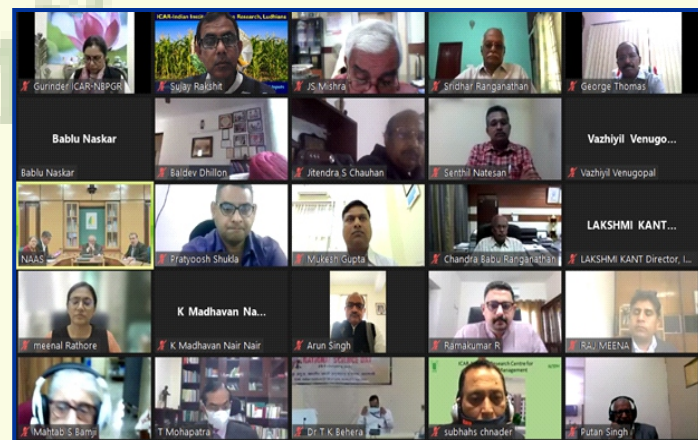
Dignitaries addressing ICAR-IIMR Staff on the Foundation Day

was stressed by Dr. Paroda. The Guest of Honor, Dr. S.K. Sharma, Former Vice-Chancellor, CSK Himachal Pradesh Krishi Vishwavidyalaya, Palampur, Himachal Pradesh stated that maize is a unique and interesting crop to study and discover more novel genes and products. The Guest of Honor, Dr. P.L. Gautam, Former Chairman, PPV&FRA, New Delhi highlighted the role of maize in food, feed and industrial sector. Dr. K.V. Prabhu, Chairman, PPV&FRA, New Delhi emphasized to increase the area under hybrid maize substantially, maybe upto 95% in the next decade. Enhancing the Rabi maize production through the adoption of good agronomic and crop protection practices was also stressed by Dr. Prabhu. Dr. R.K. Singh, ADG (CC & FFC), ICAR also graced the occasion. During this occasion various publications were released by the dignitaries. Earlier, in his address, Dr. Sujay Rakshit, Director, ICAR-IIMR, Ludhiana highlighted the Institute's different activities for the North-Eastern Hills Region.

Eastern Hills Region: A way forward" to deliberate the opportunities and challenges in maize production and prepare a roadmap for maize research to develop food, feed, and nutritional security in the North-East Hills Region of the country. More than 100 participants participated in the event.

National Science Day Celebration

Director and scientists of ICAR-IIMR attended the National Science Day celebration on Feb 28, 2022, organized by the National Academy of Agricultural



Glimpses of Science day celebration

The Institute also organized the National Webinar on "Boosting Maize Production in North-

Sciences (NAAS). Dr. R. Ramakumar, Professor and Former Dean, School of Development Studies, Tata Institute of Social Sciences, Mumbai addressed the participants on "Role of Science & Technology in Indian Agriculture" Integrated approaches.

World water day Celebration

ICAR-IIMR observed World Water Day on the March 22, 2022 to raise awareness about the importance of water and educate people to conserve it. The theme for this year's World Water Day was "Groundwater, making the Invisible Visible". Dr. A.K. Singh, Principal Scientist, (Agronomy), ICAR-IIMR discussed the importance and relevance of water in farming systems with farmers of Ladhowal, Ludhiana. He highlighted the role of water in enabling sustainable agricultural systems for improved food security and meeting the sustainable development goals of the UN. He also expressed his concerns on the declining groundwater table in Punjab and encouraged farmers to take up maize cultivation for lesser water usage as compared to rice. The farmers were also shown the experimental plots of ICAR-IIMR aimed for lesser water usage and energy saving. More than 20 farmers participated in the programme.



Glimpse of the World Water Day celebrations

Annual Maize Workshop

The 65th Annual Workshop of All India Coordinated Research Project (AICRP) on Maize was held in hybrid mode from April 19-21, 2022 at CCS Haryana Agricultural University, Hisar. The workshop was inaugurated by Prof. B.R. Kamboj, Vice-Chancellor, CCSHAU, Hisar in presence of Dr. T.R. Sharma, Deputy Director General (CS), ICAR; Dr. D.K. Yadava, Assistant Director General



Dr. T.R. Sharma DDG (CS) sharing his thoughts during the annual maize workshop

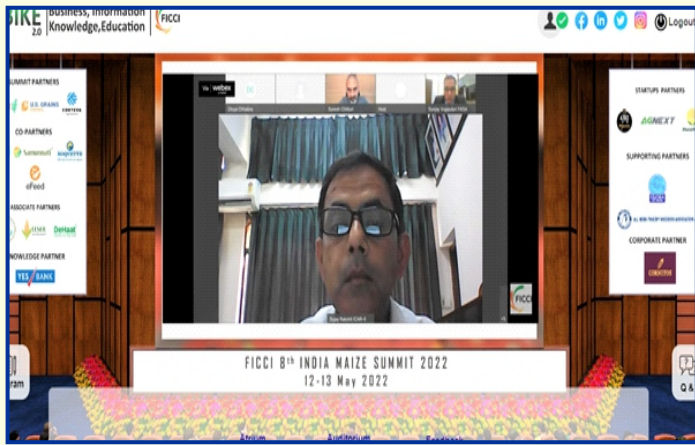
(Seeds), ICAR; Dr. J.R. Sharma, Director Research, CCSHAU and Dr. Sujay Rakshit, Director, ICAR-Indian Institute of Maize Research (ICAR-IIMR), Ludhiana. Prof. B.R. Kamboj emphasized that food security needs to be achieved along with the parallel saving of natural resources, of which water is the most precious. Maize can be a potential crop as it has multiple uses and needs much less water than rice. Dr. T.R. Sharma mentioned that in the last few years, the country has witnessed a revolution in the maize sector and there is a need to develop industry-ready maize hybrids. Dr. Sujay Rakshit, Director, ICAR-IIMR, Ludhiana informed the house that during the last five years tremendous growth has been observed in the area, production and productivity of maize. During this workshop, 14 maize hybrids were identified by the Varietal Identification Committee (VIC).

Commercializing technology

During this period, the institute has signed MoU with private partner Siddi Vinayaka Seeds, Bengaluru on April 26, 2022 for commercializing of the institute developed Quality Protein Maize hybrid LQMH. The MoU was signed through Agrinnovate which is valid for next five years.

India Maize Summit

Director ICAR-IIMR attended the 8th India maize Summit held on May 12-13, 2022. A report on "Indian Maize Sector - Securing Supply Sustainability", was released during the Inaugural session of the program. Around 600 participants from across the maize value chain attended the summit.



Director IIMR sharing his thoughts on India maize Summit

Anti-Terrorism Day

ICAR-IIMR observed anti-terrorism Day on the May 21, 2022 for awareness on counter anti-terrorism. The objective behind observance of this day is to wean away the youth from terrorism and the cult of violence. A pledge-taking ceremony was held at the institute's headquarter and its regional stations.

International Yoga Day

ICAR-IIMR celebrated the International Day of Yoga on June 21, 2022 with the theme "Yoga for Humanity".



Pledge-taking ceremony on Anti-terrorism day

Glimpses of International Yoga Day

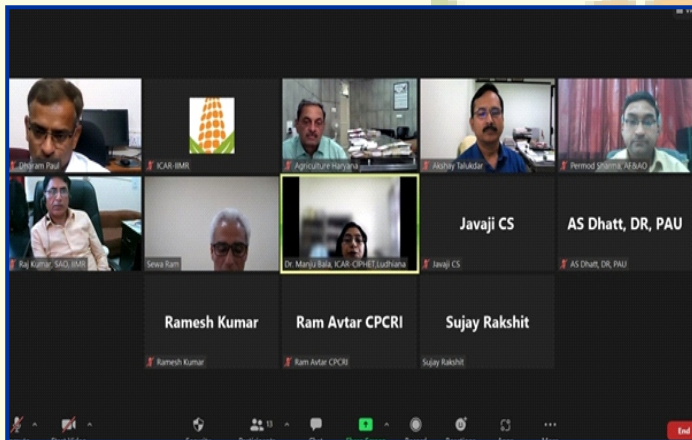
The staff of ICAR-IIMR, Ludhiana performed the yoga under the guidance of yoga guru, Shri. Shatrughan

Bansal. The staff of the regional centers of ICAR-IIMR also celebrated the International Yoga Day with zeal and vigour. The programme envisages encouraging all people to remain healthy both mentally and physically with the help of Yoga. Dr. Sujay Rakshit, Director, ICAR-IIMR highlighted the importance of Yoga as an important asset for improving public health and emotional wellness. He further stressed the need for building an enduring interest among people for yoga. In total, 74 participants participated in the programme.

IMPORTANT MEETINGS

Institute Management Committee (IMC) Meeting

The 15th meeting of IMC was held on March 26, 2022. The main agenda of the meeting was to confirm the proceedings of the 14th meeting of IMC, a presentation by the Director, ICAR-IIMR on the activities of the institute, and the constitution of the Grievance Committee of the institute. The financial status of the institute was also reviewed.



A Glimpse of the IMC meeting

Research Advisory Committee (RAC) Meeting

The meeting of the Research Advisory Committee (RAC) of the institute was held through hybrid mode on June, 30 to July 01, 2022 under the Chairmanship of Dr. S. K. Sharma, Honorary Professor & Former Vice-Chancellor, HPKV, Palampur. During the meeting Dr. Sujay Rakshit, Director ICAR-IIMR presented the overview of the maize scenario and the major accomplishments of the institute achieved during 2021-22. Dr. S. K. Sharma, Chairman, RAC congratulated the Director, scientists and the other staff for their research outcome, high impact factor and peer reviewed publications and technologies developed



A glimpse of RAC meeting

during the last one year. He emphasized that exotic germplasm is needed to be explore in order to diversify the existing maize germplasm. In order to reduce the number of generation cycles, DH facility needs to be explored expeditiously. The institute should focus on the development of multiple stress/diseases/insects-pest tolerant/resistant genotypes and accordingly high throughput phenotyping facility needs to be created in the phased manner at the institute. Screening of available maize germplasm for photoperiod insensitivity for wider adaptation needs to be explored. The members of the RAC appreciated the scientists for their research achievements in spite of the limitations of infrastructure, resources and manpower. The members emphasized on developing genetically diverse and high yielding testers, trait specific base populations and adoption of bulk pedigree method for rapid diversification of maize germplasm. To diversify the existing germplasm, white \times yellow and dent \times flint crosses may be attempted. To encourage germplasm exchange and dissemination of developed technologies, public-private linkages and collaboration with other agencies may be strengthened. It is also observed that QPM and value-added products are needed to be popularized through organizing trainings for various stakeholders.

Variety Identification Committee (VIC) Meeting

VIC Meeting of AICRP on Maize was held on April 19, 2022, in hybrid mode at Dean's Committee Room, CCS Haryana Agricultural University (HAU), Hisar. The meeting was conducted under the chairmanship of Dr. T. R. Sharma, Deputy Director General (Crop Science), Indian Council of Agricultural Research, New Delhi. Dr. R. K.

Singh, ADG (FFC), ICAR, Dr. D. K. Yadava, ADG (Seeds), ICAR, Dr. Sanjay Kumar, Director, ICAR-IISS, Mau. Dr. Jeetram Sharma, Director, Research, CCS Haryana Agricultural University, Hisar and Dr. Jagdeep Brar, Additional Director Agriculture, Govt. of Haryana attended the meeting. A total of 23 proposals were received for identification of entries by VIC which included 19 for the Kharif and 4 for the rlabi season. All the proposals received were from five public and eight private organizations. The VIC examined the proposals as per the variety identification guidelines, the consistency and yield superiority in multi-location, multi-year weighted mean yield data generated in NIVT, AVT-I and AVT-II stage of testing, three-year data on reaction to major diseases generated in NIVT, AVT-I and AVT-II stage of testing and two-year data on reaction to major insect pests generated in AVT-I and AVT-II stage of testing and one-year data of agronomic evaluation for $N \times G \times$ spacing interaction generated at AVT-II stage of testing. Based on the consistence superiority of the proposed entry over the best check in the respective zones like Northern Hill Zone (NHZ or Z-I), North West Plains Zone (NWPZ or Zone-II), North East Plains Zone (NEPZ or Z-III), Peninsular Zone (PZ or Zone-IV) and Central West Zone (CWZ or Z-V) for which the entry was proposed, 14 proposals were identified for different zones by VIC for further released and notification by CVRC.

Institute Research Council (IRC) Meeting

The Institute Research Council (IRC) meeting of the ICAR-Indian Institute of Maize Research (ICAR-IIMR), Ludhiana was held from 27-28 June, 2022 under the chairmanship of Dr. Sujay Rakshit, Director ICAR-IIMR to review the progress of ongoing research projects and to



Scientific discussion during the IRC meeting

implement the mega projects as per EFC document. Dr. R.K. Singh. ADG (CC & FFC, ICAR), Dr. Nachiket Kotwaliwale (Director, ICAR-CIPHET) and Dr. R.S. Sohu (Head, Dept. PBG, PAU) were outside experts. Dr. Dharam Pal, Member Secretary, IRC welcomed the Chairman, External Experts and other participants. He informed the house that at present 17 in-house projects are running at the institute, among these 8 are in Crop Improvement, two each in Crop Production, Crop Protection and Extension, and three are in Basic Science. He further informed that majority of the projects are completing in 2022 and to align all projects with EFC document of the institute, there will be 11 mega projects under 5 programmes from this year onwards. The Chairman, Dr. Sujay Rakshit, Director, ICAR-IIMR summarized the achievements of the institute for the year 2021-22. He informed the house that this year four maize hybrids including the first low phytate hybrid have been identified for release. In last four year 22 MoUs have been signed to commercialize the institute's technology, out of which four were signed during the current FY. Further, as per the DAC indent of hybrid seeds, maize hybrids developed by the institute ranked top with 61% share. He also highlighted that during year 2021, 31 research papers were published by the scientists, out of which 13 were published in journals of NAAS score >8.0. The institute also filed one patent and one copyright application. Dr. Nachiket Kotwaliwale, Director, ICAR-CIPHET, congratulated the scientists for their achievements. He emphasized that along with research on biotic and abiotic stress breeding, the institute also need to focus on process engineering or post-harvest value addition. Research should be focussed on the development of maize hybrids suitable for mechanization. Dr. R.K Singh, ADG (CC &FFC), expressed his happiness with the achievements of the institute in spite of the limited resources a sthe institute is in the developing phase. He further emphasized that the institute needs to focus on crop diversification through maize in Punjab as the water table is going down due to the continuous cultivation of rice. Institute should focus more on recent breeding and biotechnology techniques like genome editing etc. Dr. R.S. Sohu, Head (Genetics & Plant Breeding), PAU, Ludhiana, highlighted that although maize is a very productive crop but its harvest

index is low as compared to other crops. There is need to focus more to increase the primary product. Speciality corn is also a major area to focus on as demand for specialty corn is increasing. As the water table is going down in Punjab, water use efficiency may be worked out among maize and moong, which is required for diversification of rice. This was followed by presentations of the achievements of various projects by the individual PIs.

EXTENSION AND OUTREACH

Training on Climate Resilient Crops for Food & Nutritional Security

ICAR-IIMR, Ludhiana in collaboration with Tata Trusts, Mumbai organized four days of training on "Climate Resilient Crops for Food & Nutritional Security - Maize Value Chain Systems for Sustainable Livelihoods via Better Production, Protection & Price" from May 24-27, 2022 at Ludhiana. Dr. V. S. Sohu, Head, Department of Genetics and Plant Breeding, PAU, Ludhiana was the Chief Guest during the inauguration. He elaborated the significance of the maize value chain for adaptation and mitigation to climate change. Dr. Sujay Rakshit, Director, ICAR-IIMR, Ludhiana highlighted the activities undertaken by ICAR-IIMR for the promotion of maize in the country, especially in Punjab. Dr. Chitore Guha Sarkar, Head of Agriculture, Tata Trusts, Mumbai highlighted the activities of Tata Trusts in improving the livelihood of farmers across the poorest districts of India. Altogether 26 participants from 14 states participated in the training programme, participants were mostly frontline extension and field workers of different NGOs funded by Tata Trusts. The training was imparted on various aspects of maize



Participants of the training programme

cultivation such as production, protection, conservation agriculture, hybrid seed production, insect-pest and disease management, specialty corns, value addition, etc. Participants also visited Verka Feed Industry at Khanna, Field Fresh Food Pvt. Ltd at Ladhowal, and ICAR-IIMR's Research Farm at Ladhowal and interacted with the officials on different aspects of the maize value chain. Hands-on training for the development of various value-added products of maize was also imparted. Dr. Sujay Rakshit, Director, ICAR-IIMR, Ludhiana congratulated the participants for completing the training and hoped that the gained expertise will enable them to establish entrepreneurship in their respective domains of work.

Awareness on Balanced use of Fertilizer and Agroforestry

ICAR-IIMR organized a Kisan Ghosti at Bhairon Munna, Ludhiana on June 14, 2022. The objective of the programme was to create awareness about the importance of the use of balance fertilizer and agroforestry among the farmers for sustainable agriculture and livelihood. Dr. A. K. Singh, Principal Scientist (Agronomy), emphasized the importance of balanced use of all types of fertilizers, including organic manures, to change the current regime which uses chemical fertilizers excessively. He encouraged the farmers to adopt conservation agriculture with a maize-based cropping system. He also highlighted the importance of agroforestry and elaborated on the economic and environmental significance of poplar cultivation in Punjab. Dr. Dharam Paul Chaudhary, Principal Scientist (Biochemistry) highlighted the importance of crop diversification with maize-based farming systems in Punjab and Haryana. Dr. Ramesh Phagna, Principal Scientist (Plant Breeding) highlighted the different activities and technologies of ICAR-IIMR and encourages the farmers to adopt environment-friendly technologies for sustainable agriculture in this region. Seeds of improved maize varieties were also distributed to the farmers to encourage crop diversification in Punjab. In total 31 farmers participated in the programme. Beside this, the importance of agroforestry was also highlighted among the farmers of Ladhowal, Ludhiana on June 21, 2022.

Awards/Honours/Recognition

Dr. Ramesh Kumar received the "Institute Best Principal Scientist award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize



Glimpses of Awareness programme among farmers

Research, Ludhiana held on February 9, 2022.

Dr. Seema Sepat received the "Institute Best Sr. Scientist award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. P.L. Soujanya received the "Institute Best Sr. Scientist award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. Pardeep Kumar received the "Institute Best Scientist award" for the year 2021 during the foundation

day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. D.P. Chaudhary received "Institute Best Research Paper Award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. P.L. Soujanya "Institute Best research paper award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. Abhijit Das received the "Institute Best review

HUMAN RESOURCE DEVELOPMENT

Participation in training programs

Sl. No.	Name of scientist	Training programme attended	Venue	Date
1.	Dr. Pardeep Kumar	Training programme on QTL analysis and genome-wide association studies during (Virtual)	IASRI, New Delhi	February 15-24, 2022
2.	Dr. AK Das	Genome-wide association studies and its application in Agriculture (Virtual)	IASRI, New Delhi	March 15-24, 2022

Training programme conducted/lectured delivered

विषय	कार्यक्रम	जगह	दिनांक	दिनांक	वैज्ञानिक
खरीफ मक्का की उन्नतशील किस्में एवं बुवाई	किसान की बात कार्यक्रम	एफ एम गोल्ड	जून 9, 2022	जून 9, 2022	S.L. Jat
मक्का की कटाई एवं भण्डारण	हेल्लो किसान लाइव कार्यक्रम	डीडी किसान	अप्रैल 22, 2022	अप्रैल 22, 2022	
जायदकालीन मक्का की दाने एवं चारे के लिए खेती	किसान की बात कार्यक्रम	एफ एम गोल्ड	अप्रैल 8, 2022	अप्रैल 8, 2022	
जलवायु परिवर्तन कृषि और फसल उत्पादन पर प्रभाव	किसान की बात कार्यक्रम	एफ एम गोल्ड	मार्च 23, 2022	मार्च 23, 2022	
रबी मक्का की देखभाल	हेल्लो किसान लाइव कार्यक्रम	डीडी किसान	जनवरी 19, 2022	जनवरी 19, 2022	
रबी मक्का की देखभाल और समसामयिक कार्य	किसान की बात कार्यक्रम	एफ एम गोल्ड	जनवरी 6, 2022	जनवरी 6, 2022	
Makki di fasal di kashat ate sambhavnayan	Mera Pind Mere Khet program	DD Punjabi	July 29, 2022		D.P. Chaudhary

Participation in Conferences/Workshops/Symposium/Meetings

Sl. No.	Name of scientist	Foreign visits/Conference/Seminar/Workshop/meeting attended	Venue/Organized by	Date
1.	Dr. Pardeep Kumar	Ist International symposium on "Cereals for Food Security and Climate Resilience" (Virtual mode)	ICAR-IIWBR, Karnal	January 18-20, 2022
2.	Drs. SB Singh, N Sunil, PL Soujanya, SL Jat, AK Das, Pardeep Kumar	National Conference on Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity.	Maize Technologists Association of India at Udaipur.	February 23-25, 2022
3.	Drs. Yathish KR, Pardeep Kumar	IMIC-Asia maize field day organized by CIMMYT, India	CIMMYT, Hyderabad	March 29, 2022
4.	Dr. SL Jat	'Regional Conference on Prioritization of Crop-Specific Technologies for Sustainable Profitability: The Uttar Pradesh Chapter' by NEEDEF.	ICAR-IISR, Lucknow.	April 29-30, 2022
5.	Dr. SL Jat	National Conference on "Promotion of Kisan Drones: issues, challenges and way forward".	A.P. Shinde Hall, NASC Complex, New Delhi	May 2, 2022

paper award" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. D.P. Chaudhary received " Appreciation Certificate" for the PME work for the year 2021 during the foundation day of ICAR-Indian Institute of Maize

Research, Ludhiana held on February 9, 2022.

Dr. S.L. Jat received the "Appreciation Certificate" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. Yathish K.R. received the "Appreciation Certificate" for the year 2021 during the foundation day of ICAR-Indian Institute of Maize Research, Ludhiana held on February 9, 2022.

Dr. P.L. Joujanya received the "Best poster award" during National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. S.L. Jat received the "Dr R. Sai Kumar Memorial Award" in National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held from February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. S.L. Jat was honoured as a "Fellow of the Maize Technologists Association of India" for his outstanding contribution to maize research & development during National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. Bhupender Kumar received the "Best Poster Award" in National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. S.B. Singh received "MTAI Fellow Award" from Maize Technologists Association of India (MTAI) in National Conference on "Maize for resource

sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. Ramesh Kumar received "MTAI Fellow Award" from Maize Technologists Association of India (MTAI) in National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. S.B. Singh received the "Best Poster Award" in the National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. Sumit Kumar Aggarwal was awarded with Best Paper (oral) presentation on "Development and adoption of modules for management of maydis blight of maize in India" in 8th International conference (Hybrid mode) on Plant Pathology: Retrospect and Prospectus IPSCONF2022 held at SKNAU, Jobner-Jaipur, Rajasthan, India from March 23-26, 2022 (attended online).

Dr. Bhupender Kumar received "Dr. S.K. Vasal award for excellence in National Conference on "Maize for resource sustainability, industrial growth and farmers prosperity" held during February 23-25, 2022 at MPUAT, Udaipur, Rajasthan

Dr. Bhupender Kumar was awarded NEEDEF's Young Scientist Award-2021 on April 29, 2022.

Dr. S.L. Jat received "NEEDEF Young Scientist Award 2021" on April 29, 2022.

Dr. N Sunil has been elected as a Fellow of ISPGR 2021.

Lecture delivered

Sl. No.	Name of scientist	Lecture delivered	Organized by	Date
1.	Dr. SB Singh	"Lecture on "Major diseases of maize and their management" in the training on "Climate Smart Agriculture Workshop on Maize value Chain-Production, Protection, Processing and better price"	ICAR-IIMR, Ludhiana	May 24-27, 2022
2.	Dr. Dharam Paul	Chromatographic Techniques for purification, identification and characterization of compounds used in industries	Central Institute of Post-Harvest Engineering and Technology (CIPHET), Ludhiana	17.01.2022