Curriculum Vitae

Current Address

Dr. Anand Kumar (Assistant Professor)

Department of School of Agricultural Science &Technology,

RIMT University, Mandi Gobindgarh-147301 (Punjab)

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Research Interest

I am interested to work as an Assistant Professor in an organization where I can implement my knowledge and skills to meet the job requirements and deliver quality out-puts to teaching and Research.

I had done internship programme on **Basic molecular techniques for crop improvement** on **'DST-SERB Project'** at **Indian institute of Maize Research, Ludhiana (Punjab)**. I had worked as an Assistant Professor at School of Agricultural Sciences and Technology, RIMT University, Fatehgarh Sahib-140406 (Punjab) and also joined as a **senior research fellow**, on the project entitled **"Strengthening of DUS test centers under central sector scheme for implementation of PVP legislation"** since 7th July, 2021 to 28th February, 2022 under nodal officer of **DUS testing**. I had joined as an Assistant Professor in the Department of Integral Institute of Agricultural Sciences and Technology, Integral University-Lucknow. Now, I am currently working as **an Assistant Professor in the Department of School of Agricultural Sciences and Technology, RIMT University, Fatehgarh Sahib-140406 (Punjab)**

I have explored various conventional breeding techniques specific to Maize, Wheat and Rice crop encompassing, design of experimentation, trials constitution, phenotypic evaluation, selection of agronomic and yield contributing traits for QTL analysis, hybrid seed production (CMS based/Non-CMS based), development of RILs, NILs and other mapping populations. I possess well proficiency in very famous graphical representation tool "NTSYS". Taken altogether, I found myself to be an appropriate candidate for the post since I possess comprehensive knowledge of genetics and plant breeding courses, research abilities signified by

my research work and publications and proficiency in handling and processing various conventional breeding, molecular breeding and bio-informatic tools for data interpretation.

Experience

Sr. No.	Organization	Position held	Date of joining	Date of leaving
1	School of Agricultural Sciences and Technology, RIMT University, Patiala, Punjab	Assistant Professor	08th August, 2022	Continue
2	Department of Integral Institute of Agricultural Science & Technology, Integral University, Lucknow-226026	Assistant Professor	2nd March, 2022	31st July, 2022
3	Department of Crop improvement, ICAR-Indian Institute of Maize Research, office Pusa Campus, New Delhi-110012	Senior Research Fellow	7th July, 2021	28th February, 2022
4	School of Agricultural Sciences and Technology, RIMT University, Patiala, Punjab	Assistant Professor	29th Oct., 2020	5th July, 2021
5	Department of Crop improvement Indian Institute of Maize Research, Ludhiana (Punjab)	Internship	26th August, 2019	25th October, 2019

Training Programmes

Sr. No.	Training Names	Duration
1.	'Training cum exposure visit' to ICAR-IARI-RS, Karnal (Haryana); ICAR-IIWBR, Karnal (Haryana); ICAR-IARI-RS, Katrain (HP); Dr. YSPUH&F, Solan (HP); IIMR, Solan (HP); ICAR-IARI-RS, Tutikandi Shimla (HP); ICAR-IIWBR-RS, Flowerdale Shimla (HP); ICAR-CPRI Shimla; ICAR- CPRS, Kufri, Shimla (HP).	10 Days
2.	'Hi-Tech nursery raising technology for vegetable'	1 day
3.	'Recent advances in nutrient management in vegetables under	1 day

	protected cultivation'	
4.	'Mushroom research and development centre'	7 days

Education Qualification

Degree	Discipline/Subject	Board/University	Year of passing	Division	Marks (%)
High School /Matriculation	Science	UP Board Allahabad	2009	Second	54.00
Intermediate /Higher Secondary	Agriculture	UP Board Allahabad	2011	First	71.50
B.Sc. (Ag)	Agriculture	CCS University, Meerut, UP	2015	First	71.08
M.Sc.(Ag)	Genetics and Plant breeding	CCS University, Meerut, UP	2017	First	69.91
Ph.D.	Genetics and Plant breeding	CSAUA&T, Kanpur, UP	2021	First	72.60

National eligibility test/Achievements/Awards

Awards	Organizations	Year	Subject/Title
ARS-NET	**ICAR-ASRB**	**2021**	**Genetics and Plant Breeding**
Best innovative article Award	Agriculture & Food e-News letter	2021	Genomic selection is a promising tool for plant breeders
Best innovative article Award	Agriculture & Food e-News letter	2020	Bio-fortification in wheat: Application and methods
Scientist associate award	Astha Foundation	2018	……

Skills

- Good solving problem skills
- Enthusiasm, commitment and a strong interest in plant sciences
- Excellent verbal and written communications
- Ability to work independently and in a team while maintaining consistency in quality of output

- The ability and stamina to undertake research and long term projects in field as well as Lab.
- Comfortable to work according to situational requirements and invest extra time and effort as and when required
- The skills to manage a busy laboratory
- Can easily learn techniques and also train others to enhance mutual productivity
- Ability to effectively be involved in multi-cultural and multidisciplinary team tasks.

Research Area of Specialization

❖ Breeding techniques:

- Good knowledge of line and hybrid development of maize and rice by using Non-CMS and CMS Based (three-line A, B & R) system and hybrid seed production of parental materials.
- Crossing techniques known in: Wheat, Maize, Chick pea, Mustard & Rapeseed and Rice
- Collection, classification, handling, evaluation and maintenance of existing and introduced germplasm and maintain its pedigree record.
- DUS characterization of wheat and Maize
- Testing and identification of genotypes adoptability for normal ecologies, biotic and abiotic stresses tolerance.
- To manage agronomic and breeding activities in wheat and maize
- Layout, planning and conducting field experiments.
- Phenotypic base selection of parental materials and segregating populations.

❖ Laboratory:

- DNA, RNA and protein extraction,
- To run PCR,
- High throughput genotyping
- Gel documentation,
- Gel electrophoresis
- Biochemical analysis of crops.

- Molecular markers for gene mapping and tagging and important traits.

❖ Statistical analysis:

- Statistical analysis and interpretation of result from field experiments "NTSYS, SPSS
- Good knowledge of bioinformatics and computer (BMS, GenStat)

❖ Computer skills:

- CCC (course on computer concepts)
- MS-Word
- MS-Excel
- MS-Power Point
- Internet along with efficient typing skills

Knowledge and expertise of Molecular Biology and Plant Breeding Techniques

- Polymerase chain reaction (PCR), poly-acrylamide gel electrophoresis & agrose, DNA isolation; Cytology and light microscopy; development of SSRs, high throughput genotyping using various molecular marker systems like simple sequence repeats (SSRs).
- Data analysis skills: Population genetic and phylogenetic analysis using numerous statistical (univariate and multivariate by Biplot Analysis) packages.
- Conducting filed experiments for conventional breeding using different designs (e.g. CRD, Alpha Lattice, RBD and LSD), emasculation, pollination and use of breeding methods, recording the data on phenotypic traits, progeny test for breeding value, development of RILs, NILs and mapping populations.

Academic projects

- **Title of Ph.D. thesis:-**

  "Biometrical analysis of yield and its attributing characters in wheat (*Triticum aestivum* L.)"

- **Title of M.Sc. thesis:-**

  "Antimicrobial activity of silver nano particles against *Alternaria humicola*"

Publications

- **Kumar A**, L Verma, AP Singh, S Singh, K Babu and Soyal Kumar (2023). Quantitaive trait loci associated with biotic and abiotic resistance in maize (Zea Mays). International Journal of Plant and Soil Science, 35 (18), 1-9.
- DK Saini, Y Chopra, J Singh, K Sandhu, **Kumar A**, S Bazzer and P Srivastava (2022). Comprehensive evaluation of mapping complex traits in wheat using genome-wide association studies: A review. *Molecular Breeding*, Springer, 7, 1-52.
- **Kumar A,** A Yadav, PS Dhanda, AK Delta, M Sharma and P Kaushik (2022). Salinity Stress and the Influence of Bioinoculants on the Morphological and Biochemical Characteristics of Faba Bean (Vicia faba L.). Sustainability: MDPI, 1:15.
- **Kumar A,** SDY Naqvi, P Kaushik, E Khojah, M Amir, P Alam and BN Samra (2022). Rhizophagus irregularis and Nitrogen Fixing Azotobacter Enhances Greater Yam (*Dioscorea alata*) Biochemical Profile and Upholds Yield under Reduced Fertilization. *Saudi Journal of Biological Sciences*.1-32.
- **Kumar A**, N Longmei, P Kumar and P Kaushik (2022). Molecular Marker Analysis of Genetic Diversity in Maize: A Review. OBM Genetics, LIDSEN. 1-21.
- **Kumar A,** S. H. Wani, L. Singh, S. V. Singh, Z. A. Dar, J. A. Lone, A. H. Lone, M. S. Dar, Saba Mir, Shakir Ayoub and Audil Gull (2022). Line × tester Study in Bread Wheat (*Triticum aestivum* L.) for the estimation of correlation and path coefficients for important morphological and biochemical Traits. Biological forum. 14(3): 267-273.
- **Kumar A** and VP Singh (2020). Wheat Heat Tolerance: Mechanism, impact and quantitative trait loci associated with heat tolerance. *Int. J. Curr. Microbiol. App. Sci*., 9(2): 893-914
- **Kumar A** and VP Singh (2020). Maize Genetic Diversity: Utilization of Molecular Markers in Genetic Diversity. *Int. J. Curr. Microbiol. App. Sci*., 9(02): 1948-1959
- **Kumar A**, R Chhaya and VP Singh (2020). Genome mapping: Utilization of molecular markers in genome mapping. *International J Chemical Studies*, 8(1): 3060-3065
- **Kumar A**, R Chhaya, VP Singh and L Singh (2020). Exploitation of heterosis for grain yield and quality traits in wheat. *J Pharmacognosy & Phytochem*, 9(2):1465- 1468
- **Kumar A**, L Singh, SV Singh, S Kumar, CB Singh Gangwar and AK Singh (2021). Estimation of genetic variability in wheat (*Triticum aestivum* L.). *International J Chemical Studies*, 8(5): 2032-2034.

- **Kumar A**, L Singh, SV Singh, S Kumar, AK Singh, K Yadav, R Kumar and A Jaiswal (2021). Study of genetic variability in wheat (*Triticum aestivum* L.). *Int. J. Curr. Microbiol. App. Sci*.,9 (10) 2523-2527.
- K Yadav, M Singh, L Singh, **Kumar A** and A Jaiswal (2021). Inter characters relationship in Indian mustard. *J Pharmacognosy & Phytochem*. 10(1): 2411-2413
- **Kumar A** and Prashant Kaushik (2021). Heat Stress and its Impact on Plant Function: An Update. MDPI (Communicated and paper under review).
- A Shankar and **Kumar A** (2021). In the fight against the tomato leaf curl virus in tomato: Contenders and scenarios. *The Pharma Innovation Journal*,10(8): 1844-1850.
- A Shankar, M Sharma, **Kumar A** and A K Delta (2021). Visiting taro from a botanical and phytochemical perspective. *The Pharma Innovation Journal*, 10(8): 1446-1451

Book Chapters

- **Kumar A**, P Kumar and L Singh (2019). Nanotechnology: Emerging role of silver nano particles in agriculture. Climate smart agriculture
- **Kumar A** and L Singh (2021). Genome editing: An emerging tool for plant breeders. High tech crop production and pest management. Biotech books.
- **Kumar A** and P Kaushik (2022). Advances and Milestones of Radish Breeding: An Update. Intech open, 1-22.
- **Kumar A** and P Kaushik (2022). Biofortification of Wheat Landraces: Recent QTL Mapping Advances. Intech open, 1-18.

Popular articles

- Saini DK, VK Singh and **Kumar A** (2018). Stubble Burning: Either farmers to be punished or technology need to be improved. Biomolecule Reports ISSN: 2456-8759.
- **Kumar A**, P Singh and M Parmar (2020). Agriculture needs participation of women. Biomolecules Reports ISSN:2456-8759
- **Kumar A**, P Kumar, L Singh and S Kumar (2020). Organic plant breeding: Opportunities and Challenges. Biomolecules Reports ISSN: 2456-8759
- **Kumar A**, V Singh and M Parmar (2020). Global Warming: Causes and Impact on agriculture. Biomolecules Reports ISSN:2456-8759
- **Kumar A,** DK Saini and DK Arya (2020). Genomic Selection: A Promising Tool for plant Breeders. Agriculture & food: e-Newsletter ISSN: 2581 - 8317

- **Kumar A**, K Sandhu and DK Arya (2020). Stress and their Management for Farmers through CRISPR. Agriculture & food: e-Newsletter ISSN: 2581 - 8317
- Arya DK, DK Saini and **Kumar A** (2020). Transgenic Crops: Better Die a Satisfied Appetite than an Empty Stomach. Agriculture & food: e-Newsletter ISSN: 2581 – 8317
- **Kumar A,** L Arora and DK Arya (2020). Biofortification in Wheat: Methods and Application. Agriculture & food: e-Newsletter ISSN: 2581 – 8317
- L Arora and **Kumar A** (2021). Plant Genetic engineering: a better tool than conventional breeding. Just Agriculture ISSN: 2582 – 8223

Book published/Edited

- S Kumar, **Kumar A**, M Kumar and SK Singh (2023). Question Bank of Genetics and plant Breeding. International Books and Periodicals Supply Service, New Delhi.
- DM Mahala, CM Parihar, C Prakash, C Lahkar, **Kumar A**, D Awasthi, K Patra, HS Nayak, SL Jat, B Kumar, CG Karjagi, SB Suby, K Kumar and YS Shivay (2022). Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity. Maize Technologists Association of India (MTAI) Pusa Campus, New Delhi 110012 (India)

Paper published in seminar/symposium/conference

- **Kumar A,** R Kaushik, DK Saini, S Mishra, S Yadav and SS Gaurav (2018). Integrated Pest and Disease Management: An Approach for Securing the Future of Agriculture. International Conference on Global Research Initiatives for Sustainable Agriculture & Allied Sciences organized by RARI, Durgapura, Jaipur, Rajasthan (Abstract)
- **Kumar A** and P Kaushik (2022). A novel technique high throughput phenotyping for maize (*Zea Mays* L.). National conference on Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity organized by Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.
- **Kumar A** and P Kaushik (2022). Application of molecular markers analysis for genetic diversity in maize (*Zea Mays* L.). National conference on Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity organized by Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.
- **Kumar A** (2022). Genome wide association studies in maize (*Zea Mays* L.). National conference on Maize for Resource Sustainability, Industrial Growth and Farmers'

Prosperity organized by Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.

- CG Karjagi, SJ Rachel, O Kumar , A Pandey , V Singh, MB Pandit, V Patel, A Kumar, SB Singh, J Kumari , S Srivastava, HK Yadav, U Kapoor, S Neelam, S Pandey, A Kumar, D Awasthi, **Kumar A**, K Singh, and S Rakshit (2022). Characterization of entire set of maize germplasm conserved at National Genebank (NGB) of India. National conference on Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity organized by Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.

Poster presentation in conference/ seminar/symposium

- Presented Poster entitled as 'Stress and Their Management for Farmers through CRISPR under COVID 19' in NATIONAL WEBCON organized by the CSA University of Agriculture & Technology, Kanpur (Poster presentation).
- Presented Poster entitled as 'A novel technique high throughput phenotyping for maize at National conference on Maize for Resource Sustainability, Industrial Growth and Farmers' Prosperity (Poster Presentation).

Internship programme

Attended two months internship programme on **Basic molecular techniques for crop improvement on 'DST-SERB PROJECT'** at Indian institute of Maize Research, Ludhiana (Punjab).

Training programmes-

- Participated in 10 days training programme on 'Training cum exposure visit' to ICAR-IARI-RS, Karnal (Haryana); ICAR-IIWBR, Karnal (Haryana); ICAR-IARI-RS, Katrain (HP); Dr. YSPUH&F, Solan (HP); IIMR, Solan (HP); ICAR-IARI-RS, Tutikandi Shimla (HP); ICAR-IIWBR-RS, Flowerdale Shimla (HP); ICAR-CPRI Shimla; ICAR- CPRS, Kufri, Shimla (HP).
- Participated in one day Training programme on 'Hi-Tech nursery raising technology for vegetable'

- Participated in two days National Training Programme on ‘Recent advances in nutrient management in vegetables under protected cultivation’
- Participated in seven days training programme on ‘Mushroom research and development centre’

Seminar/symposium/conference/ workshop

- Attended in national workshop on ‘Research ethics plagiarism and references management’
- Attended in national seminar on ‘Challenges in Plant Science: Now and Then’
- Attended in national seminar ‘Challenges of climate change and green environmental solutions’
- Attended in national conference ‘New developments and challenges in protection of intellectual property’
- Attended an International conference on ‘Advances in Agricultural and Biodiversity Conservation for Sustainable development”
- Attended an International conference on ‘Advances in agricultural, biological and applied sciences for sustainable future’
- Attended an International conference on ‘Global Research Initiatives for Sustainable Agriculture & Allied Sciences’
- Attended in national conference on ‘Organic farming for sustainable agriculture and livelihood security under changing climatic condition’
- Attended in national webcon ‘Agriculture production & support system managing Covid-19 pandemic’
- Attended Live Webinar in the series of ‘Next Generation Genomics and Integrated Breeding for Crop Improvement (VII-NGGIBCI) on Genomics for food, health and nutrition’
- Participated in quiz competition on ‘National Seed Project’
- Participated in quiz competition on ‘COVID-19 Awareness Quiz’
- Attended at one-day national webinar on ‘Career opportunities in agriculture: An interactive session for agri-graduates’

- Participated in quiz competition on ‘COVID-19 Awareness Quiz’
- Participated in quiz competition on ‘Entrepreneurial Development’
- Participated in quiz competition on ‘World environment day’
- Attended in national webinar on ‘Improving crop production under climatic changes: Issues and Challenges’
- Participated in quiz competition on ‘Climate change: its vulnerability, mitigation & adaption’
- Attended in international webinar on ‘Food system and immunity facing challenges during COVID-19’
- Attended at two-day national webinar on ‘Biotechnology for crop improvement’
- Attended to an online survey on ‘Knowledge, attitudes and practices towards COVID-19 among Indian residents’
- Attended at one-day national webinar on “Secondary Agriculture for Agriculture Income Enhancement’
- Attended at one-day national webinar on “Impact of Covid-19 on Aspects of Organic Farming, Soil Health and Food Security”
- Attended at one-day national webinar on “Sustainable Food Production: Myths and Realities”
- Attended at one-day national webinar on “Secondary Agriculture for Agricultural Income Enhancement”
- Attended at one-day national webinar on “Management of Biotic and Abiotic Stresses in protected Agriculture”
- Attended at one-day national webinar on “Crop Improvement in Fruit Crops Hurdle and Prospects”
- Participated in quiz competition on ‘AARI World Environment Day’
- Attended in one-day national webinar on ‘Preparation for Flood Risk Mitigation’
- Attended in one-day national webinar on ‘Conservation of Agro biodiversity for EnsuringFood and Nutritional Security in India’
- Attended in one day online workshop in pursuance of National Education Policy (NEP 2020)” on the topic “Multiple Entry & Exit”

- Attended in one day online workshop in pursuance of National Education Policy (NEP 2020)" on the topic "National Skills Qualifications Framework (NSQF)"
- Participated in quiz competition on "Space cooling through optimum temperature settings of ACs".
- Participated in quiz competition on "Swaraj Quiz".
- Participated in quiz competition on "Online financial fraud"
- Participated in quiz competition on "Indian traditional Knowledge"
- Participated in quiz competition on "Shoonya-Zero-Pollution mobility campaign in India".
- Participated in quiz competition on "Divyangjan Sashaktikaran: Kitne Jagruk hai hum Quiz 2.0".
- Participated in quiz competition on "Centre for high technology-Swachh Bharat quiz".
- Participated in quiz competition on "Dekho apna desh webinar: Historic city Kozhikode and Vasco da gamma".
- Participated in quiz competition on "Har Ghar Tiranga".

Additional Information (during teaching)

- Involved in report writing and documentation committee on Farmers day
- Involved in NAAC accreditation criteria
- Involved in IIAST assets optimization & management committee
- Involved in ICAR accreditation
- Role and responsibilities during teaching (Collection, completion & tabulation of data along with proper documentary, evidence of the same
- Invigilator role in examination

Subjects taught

To undergraduate Students

- Fundamentals of genetics
- Principles of plant breeding
- Principles of seed technology

- Crop improvement (Rabi crops)
- Crop Improvement (Kharif crops)

➢ To postgraduate Students

- Fundamentals of genetics
- Principles of plant breeding
- Principles of quantitative genetics

Membership of societies

Member of Astha foundation (GRISAAS) (Reg. No.GRISAAS / 18 / ABS/371) from 21th September – 2018

Team game/sports/NCC/NSS/Hitch-Hiking/Mountaineering

Attended in NCC at Amar Singh Post Graduate College Lakhaoti (Bulandshahr)

Interests/Hobbies

- Playing guitar, listening to music
- Playing chess
- Reading/Watching about Innovative, Influential peoples and
- Artists, Fitness, Yoga, Pranayama and Meditation

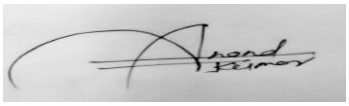
Personal Information

Date of Birth	26th August 1996
Father's Name	Mr. Sarvesh Kumar
Mother's Name	Smt. Sant Kumari
Marital Status	Unmarried
Languages known	English, Hindi and Punjabi
Permanent Address	Vill: Vishnu Baher, Post: Gharthaniya, District: Lakhimpur (Kheri), Pin Code: 262802

Mailing Address	**Dr. Anand Kumar**, Village: Vishnu baher, Post: Gharthaniya, District: Lakhimpur (Kheri), Pincode: 262802
Email	anandkumar002014@gmail.com, anand@csauk.ac.in
Mob. No.	+917572070757; +916386483345

Declaration

I hereby declare that all the information furnished above is true to best of my knowledge.



Signature