Dr. Harisha R. *M.Sc., Ph.D.*
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Central Muga Eri Research & Training Institute
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Education Qualifications

Ph.D. (Genetics and Plant Breeding) | OGPA - 8.48

Indian Agricultural Research Institute (IARI), New Delhi, India — 2019-2023

Thesis title: "Assessment of the effect of compositional factors on chapati quality and marker assisted transfer of glutenin alleles to Indian wheat *(Triticum aestivum L.)* Variety".

Master of Science (Genetics and Plant Breeding) | OGPA - 8.62 — 2017-2019

Professor Jayashankar Telangana State Agricultural University, Hyderabad, India

Thesis title: "Development of SSR based DNA Barcodes and Molecular Finger Printing of Important Rice varieties of Telangana"

Bachelor of Science (Agriculture) | OGPA - 8.27

College of Sericulture, Chintamani, University of Agricultural Sciences, Bengaluru, India — 2013-2017

Awards/honour/Fellowship

1. ICAR- Junior Research Fellowship for Master's degree — 2017-2019
2. All India ICAR- IARI PhD (Genetics and Plant Breeding) Entrance examination — 2019
3. ICAR- Senior Research Fellowship for Doctoral degree — 2019
4. Junior Research Fellowship by Council of Scientific and Industrial Research (CSIR-JRF) for Doctoral degree — 2021-2023
5. ICAR-National Eligibility Test (NET) in Genetics and Plant Breeding — 2022
6. Best M.Sc. Thesis Award at International conference on Innovative approaches in Agriculture, Horticulture & Allied Sciences organized by SGT university, Gurugram, ISAHRD, Chandigarh — 2023
7. Best Research Scholar Award at International conference for Award winners in Engineering, Sciences and Medicines, Pondicherry, India — 2023
8. Best Poster Presentation award in 6th National youth convention on Innovation and Agricultural Reforms towards Farmers prosperity held at Hyderabad — 2021

9. Best Oral Presentation at 3rd International conference on Innovative approaches in Agriculture, Horticulture & Allied Sciences organized by SGT university, Gurugram, ISAHRD, Chandigarh	2023
10. Life member of the Indian Society of Genetics and Plant Breeding (ISGPB)	2023

Conferences/Workshop/Trainings Attended

1. International Bioinformatics Workshop on "Genome Informatics" organized by Decode life sciences, India	2020-21
2. International Conference of Virology on "Evolution of Viruses and Viral diseases" (VIROCON) at Indian National Science Academy (INSA), New Delhi, India	2020-21
3. Participated in 6th National Youth Convention on "Innovation and Agriculture Reforms towards Farmers Prosperity" at Professor Jayashankar Telangana State Agriculture University, Hyderabad, Telangana, India	2021
4. Workshop on "Gene Editing and Phage Therapy" at Division of Biochemistry ICAR-IARI, New Delhi, India	2021
5. International webinar on "Translating Physiological Tools to Augment Crop Breeding" at ICAR-IIWBR, Karnal, Haryana, India	2021
6. Symposium on Tending Mendel's Garden for a Perpetual and Bountiful Harvest Commemorating Birth bicentenary of Gregor Johann Mendal at IARI, New Delhi, India	2022
7. International Workshop on "Bioinformatics, Genomics, Transcriptomics, Microbiome and NGS data analysis" organized by Nextgenhelper, New Delhi India	2023

Sports Awards and Extra-curricular Achievements

1. Secured **Gold Medal** (Kho-Kho) in XVI All India Inter Agriculture Universities Sports and Games meet held at Tamilnadu Agriculture University (TNAU) Coimbatore, Tamil Nadu, India	2015-16
2. Participated in **South Zone** (Kho-Kho) Competition held at Mangalore University Karnataka, India	2017
3. Participated in XVIII All India Agri-Sports meet (Basket Ball, Kho-Kho and Athletics), held at GKVK, University of Agricultural Sciences (UAS), Bengaluru, India	2017-18
4. Participated in XIX All India Inter Agriculture Universities Sports and Games meet (Basket Ball and Athletics), held at Punjab Agriculture University (PAU), Ludhiana, India	2018-19
5. Participated in XX All India Inter Agriculture Universities Sports and Games meet (Basket Ball, Kho-Kho and Athletics), held at Sri Venkateswara Veterinary University, Tripathi, Andra Pradesh, India	2019-20

Positions of Authority held In School/College

1. **Class representative** in higher primary school and High school 2006
2. Served as **'Team leader'** during RAWEP (Rural Agricultural Work Experience Programme) at College of Sericulture Chintamani¸ UAS, Bengaluru, Karnataka, India 2017
3. Served as **'Games and Sports Secretary'** in Post Graduate school student's union, ICAR-Indian Agricultural Research Institute, New Delhi, India 2020-2021
4. Served as **Member** in **'IARI Placement Cell Committee'** in Post Graduate school student's union, ICAR- Indian Agricultural Research Institute, New Delhi, India 2020-2021

Research Experience

1.Indian Agricultural Research Institute (ICAR-IARI), New Delhi, India Aug 2019 – Sep 2023

PhD Thesis | Chairperson: Dr. Anju Mahendru Singh, Head and Principal Scientist, ICAR-NBPGR, New Delhi

Studied the relationship among the physico-chemical, rheological and biochemical quality traits and chapati quality in diverse wheat genotypes. Identified stable genotypes for grain, flour, and chapati quality traits among the multi-location evaluated genotypes. Developed the near isogenic lines (NILs) of genetic background of HD2967 (High yielding variety) with combination of glutenin genes (null, 20, 2+12 (High Molecular Weight) and i (Low Molecular Weight) from donor parent C306 (Known for good chapati quality) by using marker assisted back cross breeding program (MABB) and studied their effect on quality traits and end product chapati quality.

2.Professor Jayashankar Telangana State Agricultural University (PJTSAU), Hyderabad, India June 2017- July 2019

MSc. Thesis | Chairperson: Dr. D. Bhadru, Principal Scientist, Agriculture Research Institute (ARI), Professor Jayashankar Telangana State Agricultural University, Hyderabad

Studied on DUS characterization and Molecular fingerprinting of rice genotypes. Based on the morphological traits variation, DUS fingerprints were developed using 21 informative traits. The resulting allelic variations of SSR markers for the genotypes were converted to DNA barcode profiles by separating the allele size from each SSR locus by sorting the allele size data from the lowest to the highest. Combination of DUS/morphological traits and DNA fingerprinting of genotypes are very important for identification of adulterated seeds at field and lab level. During this period the skills such as, DUS characterization, isolation of genomic DNA, genotyping using SSR markers, barcodes construction based on DUS trait variation and SSR data, Multiplexed PCR and bioinformatics analysis were done.

List of Publications

Research Paper

1. **Rajappa Harisha,** Bhadru, D., Vanisri, S., Gourishanakar, V., & Satish, L. (2021). SSR and morphological traits based fingerprints and DNA barcodes for varietal identification in rice. ***Biotechnology & Biotechnological Equipment***, *35*(1), 1461-1473.
2. **Rajappa Harisha**, Bhadru D, Bhargava K, Vanisri S, Gourishankar V, Adithya P Balakrishanan, Manoj Gowda M, Shailey Singhal (2022). Assessment of Variability and Genetic Diversity for Elite Rice (*Oryza sativa* L.) Genotypes of Telangana and Andhra Pradesh. ***International Journal of Environment and Climate Change***, *12*(11), 3612-3622.
3. **Rajappa Harisha,** Bhadru D, Vanisri S, Gourishankar V, Bhargava K, Adithya P. Balakrishnan and Rathan N. D. (2022). Delineating the association of component traits and their effect on yield in elite rice genotypes of Telangana and Andra Pradesh. ***International Journal of Economic Plants*** *(*2022), 9(4):310-315
4. **Rajappa Harisha**, Sumit Kumar Singh, Arvind Kumar Ahlawat, Sneh Narwal, J. P. Jaiswal, J. B. Singh, Rajeev Ranjan Kumar, Shaily Singhal, Adithya P Balakrishnan, Priyanka Shukla1, Beera Bhavya, Arpita Agrawal, Sanjay K Singh and Anju Mahendru-Singh (2023). Elucidating the effects of Poly Phenol Oxidase activity and allelic variation of Poly phenol oxidase genes on dough and whole wheat derived product color parameters. ***International Journal of Food Properties***, *26*(2), 2716-2731.
5. Manjunatha PB, **Harisha R**, Kohli M, Naik PK, Sagar SP, Shashidhar BR, Patel MK, Ganesh BT, Madhusudhan BS, Chethan Kumar KB, Kumar S (2023). Exploring the World of Mungbean: Uncovering its Origins, Taxonomy, Genetic Resources and Research Approaches. ***International Journal of Plant & Soil Science***, *35*(20), 614-635.
6. Patel, M.K, Tiwari, D, Sharma, V, Ola, M.P., Saroj, R, Kumar, S, **Harisha, R**. and Singh, D. (2023). Deciphering the Genetic Variability for Seed Yield Components in Sesame (*Sesamum indicum* L.). ***International Journal of Environment and Climate Change***, *13*(10), 1118-1126.
7. **Rajappa Harisha**, Arvind Kumar Ahlawat, Sneh Narwal, Rajeev Ranjan Kumar, Sumit Kumar Singh, Shaily Singhal, J. P. Jaiswal, J. B. Singh, Adithya P Balakrishnan, Beera Bhavya, Priyanka Shukla, Arpita Agrawal, Sanjay Kumar Singh and Anju Mahendru-Singh. Unraveling the effects of genotype, environment and their interaction on quality attributes of diverse wheat (*Triticum aestivum* L.) genotypes. ***Indian Journal of Genetics and Plant Breeding*** (Accepted).

<u>Popular Articles</u>

1. **Harisha R,** Adithya P Balakrishnan, Govinda Rai Sarma and Kadthala Bhargava. Hypoimmunogenic Gluten: A Way Out for Wheat Gluten Intolerance. **AgriCos e-Newsletter** E-ISSN: 2582-7049**.** Volume: 03 Issue: 11 November 2022.
2. **Harisha R,** Manoj Gowda M, Adithya Balakrishnan P, Shaily Singhal, Kadthala Bhargava. Land Races: Challenges and Opportunities for Plant Breeding. **Krishi Science –eMagazine** E-ISSN: 2583-4150. Volume: 03 Issue: 11 – November 2022.
3. **Harisha R,** Shashidhar B. R, Kadthala Bhargava, Manoj Gowda M. Double Haploids in Maize: Challenges and Opportunities. **Agriculture and food: e-Newsletter** E-ISSN: 2581-8317. Volume: 04 Issue: 12 December 2022**.**
4. Manjunath P B, **Harisha R**, Shivaprasad K M and Shaily Singhal. A systematic approach to controlling the frequency and distribution of crossovers in Plant Breeding. **Krishi Science -eMagazine** E-ISSN: 2583-4510. Volume: 04 Issue: 01 January 2023**.**
5. Manoj Gowda M, **Harisha R**, Kadthala Bhargava and Adithya P Balakrishnan. Mutants in Starch Biosynthesis Pathway, Characterization and Application in Corn Breeding. **Just Agriculture multidisciplinary e-Newsletter** E-ISSN: 2582-8223. Volume: 04 Issue: 03 November 2022.

6. Shivaprasad K.M, ShashidharB. R, **Harisha R** and Pavan Kumar Naik N. QTL Seq: In Delineation of Loci Governing Flowering Time. **Just Agriculture multidisciplinary e-Newsletter** E-ISSN: 2582-8223. Volume: 04 Issue: 03 November 2022.
7. Shaily Singhal1, **Harisha R**, Adithya P Balakrishnan, Almas Zehra Abbas and Pooja. Stubble Burning: A Prolonged Tussle between Farmers, Government and Environment**. Just Agriculture multidisciplinary e-Newsletter** E-ISSN: 2582-8223. Volume: 04 Issue: 03 November 2022.

Book chapters

1. Krishna K, Babithraj goud G, Vijaykumar K and **Harisha R** (2020-2021). "Genomic Approaches for crop Improvement". **Published book entitled 'Recent Advances in Molecular biology and Plant physiology'** (Volume 01) Akinik Publications. E-book, ISBN: 978-93-90420-76-6.
2. Bhargava K, Sadhana P, Ravali S, Hima Bindu P and **Harisha R** (2022). "Genome Editing: A Way Forward for Crop Improvement". **Published book entitled 'Advances in Agricultural Biotechnology'** (Volume - 5). Akinik Publications. E-book, ISBN 978-93-5570-234-0.
3. **Harisha R,** Chetan Kumar K.B, Adithya P Balakrishnan, Kadthala Bhargava (2022). Book chapter titled "Detection, Identification and Salvaging Techniques against Insects and Mites in Quarantine" of published book entitled **'Advances in Genetics and Plant Breeding'** (Volume – 20), ISBN 978-93-5570-529-7.

Affiliations

1. Central Silk Board, Ministry of Textiles – Govt. of India
2. ICAR-Indian Agricultural Research Institute, New Delhi
3. University of Agricultural Sciences, Bengaluru
4. Professor Jayashankar Telangana State Agricultural University, Hyderabad, India

(Dr. Harisha R.)