

Dr. Mangesh Pralhad Jadhav

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PROFESSIONAL SUMMARY:

- An ICAR NET qualified forward-thinking research and teaching professional with a strong background in plant genomics and molecular biology led to successful generation of improved peanut MABC lines, GM-Cotton events and publications in peer-reviewed journals.
- Proven skills and experience in Agricultural biotechnology, Genetics, Molecular biology, Genetic engineering, Bioinformatics and Plant tissue culture; gained knowledge in Biostatistics and Intellectual property.
- Proficient at performing lab and greenhouse experiments, planning and conducting field trials, data collection and statistics activities.
- Excellent at project management and proficient in clearly communicating and convincing the audience to complex topics build-up by award- winning scientific presentations and guest lectures in training program.
- A creative and self-motivated individual with easy-integration in a multicultural environment with the unique combination of detail-oriented mindset, driven personality, analytical skills and deadline oriented.

POSITION:

- **April 2022– Present:** Research Officer (Level 11), National Genomics and Genotyping Facility National Institute of Plant Genome Research, New Delhi, India.
- **June 2021 – January 2022:** Senior Research Associate, Plant Biotechnology Research Centre, Ajeet seeds, Aurangabad, Pvt. Ltd. India

ACADEMIC DETAILS

- **August 2016 – July 2021:** Ph. D. in Molecular Biology and Biotechnology from University of Agricultural Sciences, Dharwad, Karnataka, India.
Thesis Title: “High-Density Genetic Linkage Mapping and Marker-Assisted Breeding for Productivity and Quality Traits in Groundnut (*Arachis Hypogaea* L.)” **OGPA:** 8.3/10
- **June 2017 – July 2018:** PG. Diploma in Intellectual property Rights (Distance course) from Annamalai University, Chennai, Tamilnadu, India. **OGPA:** 7.75/10
- **August 2013 – March 2016:** M.Sc. Agri. in Molecular Biology and Biotechnology from University of Agricultural Sciences, Dharwad, Karnataka, India.
Thesis Title: “Genetic Transformation Studies in Cotton” **OGPA:** 8.3/10
- **August 2008 – June 2012:** B.Sc. Agri-Biotechnology from Mahatma Phule Krushi Vidyapeeth Rahuri, Maharashtra, India. **OGPA:** 8.0/10
- **August 2006 – June 2008:** H.S.C. from Jaikranti Junior College, Latur, Maharashtra, India.
Percentage: 70.33/100
- **August 2005 – June 2006:** S.S.C. from Chatrpati Shivaji High school, Osmanabad, Maharashtra, India.
Percentage: 71.86/100
- Qualified ICAR National Eligibility Test (NET) – 2018 conducted by Agricultural Scientists Recruitment Board (ASRB), New Delhi, India. **Percentage:** 60.22/100

OTHER ACADEMIC QUALIFICATIONS AND ACHIEVEMENTS:

1. January 2022 – April 2022: Completed online certificate course on ‘Introduction to the patent cooperation Treaty’- from world Intellectual Property Organization Academy, Geneva, Switzerland.
2. November 2018 – December 2018: Completed ‘Massive open online course on dynamics of teaching’- learning from Indian Council of Agricultural Research- National Academy of Agricultural Research Management Hyderabad, India.
3. Recipient of Council of Scientific and Industrial Research-Senior Research Fellowship - CSIR_SRF (2019-2021)
4. Best Poster award in National conference at University of Agricultural and Horticultural Sciences Shivamogga. (2019)

5. Visited Kazusa DNA Research Institute (KDRI, Japan) as a visiting scientist under Indo-Japan Project (2017)
6. Best Masteral Thesis Award during the conference organized by Science and Tech Society For Integrated Rural Development, Telangana. (2018)
7. Received All India Best Publication Award 2018 from Society for the Advancement of Human and Nature (SADHNA), Dr. YS Parmar University of Horticulture & Forestry, Solan 173230 Himachal Pradesh, India.
8. Recipient of Jawaharlal Nehru University New Delhi (JNU) Scholarship for M. Sc. 2013-2016
9. Secured All India 43th rank in Junior Research Fellowship exam, (Plant Biotechnology and Molecular Biology group) conducted by Indian Council for Agricultural Research, New Delhi during year 2013.

RESEARCH EXPERIENCE

Post-Doc Researcher Plant Biotechnology Research Centre, Ajeet seeds, Pvt. Ltd. Aurangabad, India (June 2021– January 2022)

- Led a plant tissue culture team and attempted successful transformation in some important crops and transgenic events characterization,
- Extended expertise in sgRNA designing, CRISPR/Cas9 based genome editing and bioinformatics analysis.
- Further, for a commercially important woody medicinal plant, an *in vitro* axenic culture and regeneration protocol has been established.
- Contributed in the planning of molecular breeding projects

Doctoral researcher: University of Agricultural Sciences, Dharwad, India. (August 2016– July 2021)

- Developed of backcross lines in peanut with enhanced oleic acid content selected superior lines with desired allelic combination using high-throughput genotyping using KASP assay, AS-PCR, and ddRAD sequencing and promoted to varietal release
- I have performed an extensive work on genotyping-by-sequencing using illumina 2500X platform, did high-resolution genetic mapping and discovered consistent genomic regions/genes for productivity and quality traits in peanut
- Also developed the foliar disease resistant and productive mutants from the introgression lines of peanut
- Trained in planning and executing field trials, performing breeding activities, analysis of large phenotypic and genotypic data sets with advanced software's
- Worked in a close association with national and international collaborators, supervised and monitored lab colleagues for their thesis dissertation

Postgraduate Research: University of Agricultural Sciences, Dharwad, India. (August 2013– March 2016)

- Performed successful transformation in cotton and transgenic events characterization
- Evaluated 278 cotton germplasms for important productivity traits and genotyping with 63K SNP chip and performed association mapping, also discovered SNP loci contributing to these important traits
- Involved in other projects and gained expertise in data analysis and report writing

SPECIAL ATTAINMENTS/ TECHNOLOGY DEVELOPED:

1. Development of high productivity and disease resistant mutant lines in peanut which are under multi-location trails: Please refer Joshi et al. 2019. doi: 10.1111/pbr.12762.
2. Development of backcross breeding lines with enhanced oleic acid content in peanut which are under multi-location trails: Please refer Jadhav et al. 2021. <https://doi.org/10.1002/csc2.20512>

MEMBERSHIP OF SCIENTIFIC SOCIETIES:

1. Voting Member of International Cotton Genome Initiative (ICGI).
2. Life Member (Life Membership No. LM2734) of Society for the Advancement of Human and Nature (SADHNA), Dr. YS Parmar University of Horticulture & Forestry, PO Nauni, Solan 173230 Himachal Pradesh, India.
3. Life Member (Life Membership No. M4150906110) of International Society for Research and Development (ISRD).
4. Life Member of Science and Tech Society For Integrated Rural Development, Telangana, India.

TRAINING PROGRAMME ATTENDED:

1. Five days training on Advance Digital and Biotechnological tools in Modern Agriculture, VNMKV, Parbhani, India (2021).
2. Ten days training on Genome-wide QTL detection and prediction of breeding values for precision crop breeding conducted by GKVK University of Agricultural Sciences, Bengaluru, India (2019).
3. Ten days training on Hands-on training on peanut genomics and transcriptomics. KDRI, Chiba Japan (2017).
4. Ten days training on High throughput genotyping and modern breeding approaches for groundnut improvement, ICRISAT, Hyderabad, India (2017).

POSTER AND ORAL PRESENTATION IN CONFERENCES:

1. *Agrobacterium* Mediated transformation studies in Cotton cv. Coker-312 (*Gossypium hirsutum* L.). Paper presented In: **ICRB-2015**, Ayya Nadar Janaki Ammal College Sivakasi Tamilnadu India.
2. Marker assisted breeding for high oleate containing Groundnut. Paper presented In: “**BPGRCF-2019**, University of Agricultural and Horticultural Sciences Shivamogga Karnataka, India.
3. Development and evaluation of biofortified Groundnut lines for productivity and quality traits. Paper presented In: “**NCIPBB-2019**, Indian Institute of Rice Research, Hyderabad, India.
4. Molecular breeding for enhancing oil quality in elite and confectionary groundnut genotypes. Paper presented In: “**NRCC-2020**, University of Agricultural Dharwad, Karnataka, India.

EXPERIENCE AND SKILLS:

Communication:

- Strong communication/presentation skills: presented data clearly and confidently to both small and large groups, at various conferences and seminars. Acquired skill of interpreting the content to the level of others knowledge and understanding.
- Strong synthesizing, writing, and reviewing skills: Wrote and published scientific articles in peer-reviewed journals, as well as the highly technical replies to the questions raised by the reviewers. Wrote book chapter, funding application and produced regular progression reports.

Management and organization:

- Managed several projects and collaborations in parallel, planned work to achieve goals and targets on time, set realistic objectives, developed creative solutions to problems.
- Used to seek and critically assess large amounts of information, to define the cause of problems, determine available options and to use my own experience and that of others to move things forward.
- Collaborated and communicated at all professional levels, and with people from diverse origins and cultures. Can work both independently and in team settings.
- Adapted to living different states, abroad, increased my command of English, learned perseverance and self-motivation.

Genomics and Bioinformatics Skills:

- Data analysis: SPSS, INDOSTAT, R-packages and Microsoft Excel
- Genomics and bioinformatics software's: R-packages, META-R, OPSTAT, TASSEL, Structure, ClicO-FS, Icimapping, JoinMap, QTL Cartographer, etc.
Good knowledge about NCBI, Cottongen, PeanutBase and KAZUSA Genome Database.
- Molecular Biology: Snapgene, CRISPR/Cas sgRNA designing tools, Clustal omega, Expasy, GGT 2, Primer3, Bioedit, FastPCR, etc.

Technical Skills:

- Breeding Skills: Planning and conducting field trials, maintaining germplasms, crossing in cotton, peanut, chilli, tomato and sorghum
- Molecular biology:
Vector design: primers design, digestions, ligations, cloning.
Cloning: transformation, RNA extraction, reverse transcription, PCR, DNA purification, DNA gel analysis, quantification and extraction.
- Microbiology: Handling liquid and solid culture of bacterias, isolation and transformation
Microscopy: confocal, fluorescence and light microscopy.
- Biochemistry: Southern blot, Western blot, ELISA and enzymatic assays.

ANNEXURE I

PUBLICATIONS:

- Tayade, A. D., Motagi, B. N., **Jadhav, M. P.**, Nadaf, A. S., Koti, R. V., Gangurde, S. S., Sharma, V., Varshney, R. K., M. K. Pandey and Bhat, R. S., 2022 "Genetic Mapping of Tolerance to Iron Deficiency Chlorosis in Peanut (*Arachis hypogaea* L.). *Euphytica*. 218(46):1-10 (NAAS: 7.83; IF: 1.83)
- **Jadhav, M. P.**, Sunil S. Gangurde, Anil A. Hake, Arati Yadawad, Supriya S. Mahadevaiah, Santosh K. Patatanashetti, M. V. Gowda et al. "Genotyping-by-Sequencing Based Genetic Mapping Identified Major and Consistent Genomic Regions for Productivity and Quality Traits in Peanut." *Frontiers in Plant Science*., (2021): 2034. (NAAS:11.75; IF: 5.75)
- **Jadhav, M. P.**, Malagouda D. Patil, Mahesh Hampannavar, Pavana Dattatreya, Kenta Shirasawa, Janila Pasupuleti, Manish K. Pandey, Rajeev K. Varshney, and Ramesh S. Bhat. "Enhancing oleic acid content in two commercially released peanut varieties through marker-assisted backcross breeding." *Crop Science* (2021). 61(4): 2435-2443. (NAAS: 8.32; IF: 2.32)
- Joshi, P*, **Jadhav, M. P***, Shirasawa, K., Yadawad, A. and Bhat, R. S., 2019, Foliar dis-ease resistant and productive mutants from the introgression lines of peanut (*Arachis hypogaea* L.). *Plant Breeding*., 139 (1): 148-155. DOI: 10.1111/pbr.12762. (***Combined first Authors**) (NAAS:7.83; IF:1.83)
- **Jadhav M. P.** and Katageri, I. S., 2018, *In planta* genetic transformation in cotton (*Gossypium* Spp.). *J. Farm Sci.*, 31(1): 27-31. (NAAS: 4.58)
- Yadav, S. A., **Jadhav, M. P.**, Adiger, S., Singh S., Solanke A. U., Katageri, I. S., and Vamadevaiah H. M., 2018, Expression studies of transcription factors under moisture stress in Cotton (*Gossypium hirsutum* L.). *Indian J. Genet.*, 78(3): 393-397. (NAAS:6.51; IF: 0.51)
- Sankeshwar, M., **Jadhav, M. P.**, Adiger, S., Patil, R. S. and Katageri, I. S., 2018, Mapping of QTLs for traits related to leaf pubescence, jassid resistance and yield in cotton (*Gossypium spp.*). *Indian J. Genet.*, 78(2): 252-260. (NAAS:6.51; IF: 0.51)
- Hande, A. S., Katageri, I. S., **Jadhav, M. P.**, Adiger, S., Gamanagatti, S., Padmalatha, G., Kanakachari, M., Kumar, P. A. and Reddy, V. S., 2017. Transcript profiling of genes expressed during fibre development in diploid cotton (*Gossypium arboreum* L.). *BMC genomics*, 18 (1): 675. (NAAS: 9.97; IF: 3.97)
- Handi S. S., Katageri, I. S., Adiger, S., **Jadhav, M. P.**, Lekkala, S. P. and Lachagari, V. B. R., 2017. Association mapping for seed cotton yield, yield components and fibre quality traits in upland cotton (*Gossypium hirsutum* L.) genotypes. *Plant Breeding*., 136:958–968. (NAAS: 7.83; IF: 1.83)
- Sudakara, R. S., Katageri, I. S., Mohan Kumar, N. V., **Jadhav, M. P.**, Adiger, S., Chakravartty, N., Vamadevaiah H. M. and Reddy V. B., 2017, Discovery of single nucleotide polymorphism in *Gossypium hirsutum* and *G. barbadense* through next generation sequencing approach. *Indian J. Genet.*, 77 (1): 126-133. (NAAS: 6.51; IF: 0.51)
- **Jadhav M. P.** and Katageri, I. S., 2017, *Agrobacterium tumefaciens* Mediated Genetic Transformation in Coker-312 (*Gossypium hirsutum* L.) Using Hypocotyls Explants. *Int. J. Curr. Microbiol. App. Sci.*, 6 (12): 2771-2779. (NAAS: 5.3)
- Mahawar, S., Katageri, I. S. and **Jadhav, M. P.**, 2017, Evaluation and Characterization of Genetically Modified Cotton *Gossypium herbaceum* var. Jayadhar for *Helicoverpa armigera* Resistance. *Int. J. Curr. Microbiol. App. Sci.*, 6 (12): 2780-2792. (NAAS: 5.3)
- Sahu A. K., Katageri, I. S., **Jadhav, M. P.** and Vamadevaiah, H.M., 2017, A Simple, Rapid and Effective Protocol for Extraction of Total Plant Proteins from Cotton Leaf. *Int. J. Curr. Microbiol. App. Sci.*, 6 (12): 2968-2975. (NAAS: 5.3)
- Divya T. C., Katageri, I. S., **Jadhav, M. P.**, Vamadevaiah, H.M., Adiger, S. and Olekar, n. S., 2017, Biochemical Constituents Imparting Resistance to Sucking Pest Aphid in Cotton (*Gossypium spp.*). *Int. J. Curr. Microbiol. App. Sci.*, 6 (12): 2749-2757. (NAAS: 5.3)
- Sangannavar, P. A., Katageri, I. S., **Jadhav M. P.** and H. M. Vamadevaiah., 2016, *In planta* genetic transformation in cotton (*G. hirsutum* L.). *J. Farm Sci.*, 29 (3): 318-321. (NAAS: 4.58)

BOOK CHAPTER:-

- Bhat R.S., Venkatesh, **Jadhav M.P.**, Patil P.V., Shirasawa K. (2022) Genomics-Assisted Breeding for Resistance to Leaf Spots and Rust Diseases in Peanut. In: Gosal S.S., Wani S.H. (eds) *Accelerated Plant Breeding, Vol.4 : Oil Crops* Springer, Cham. https://doi.org/10.1007/978-3-030-81107-5_8