**CURRICULUM VITAE**

Dr. Supriya Babasaheb Aglawe

Ph. D. Agriculture (Molecular Biology and Biotechnology)

**Personal Details:**

Address for Correspondence

Biotechnology

ICAR-National Research Centre for Grapes  
P.B. No. 3, P.O. Manjari Farm, Solapur Road  
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**Long-term goal:**

To translate my intellect, talent, experience, knowledge, skill and abilities in to the value for farming community and human resource development

**Educational Background:**

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| --- | --- | --- | --- |
| **Examination Passed** | **Name of Institution** | **Year of**  **Passing** | **Percentage**  **(%)** |
| **Ph.D. (Agri)**  Molecular Biology & Biotechnology | Professor Jayshankar Telangana State  Agricultural University, Rajendranagar, Hyderabad, Telangana | 2017 | 87.80 |
| **M.Sc (Agri)**  Plant Biotechnology | University of Agricultural Sciences,  Dharwad, Karnataka | 2010 | 81.50 |
| **B.Sc (Agri)** | Mahatma Phule Krishi Vidyapeeth,  Rahuri, Maharashtra | 2007 | 80.60 |
| **H.S.C. (XII Class)** | Maharashtra State Board of Secondary  And Higher Secondary Education | 2003 | 72.33 |
| **S.S.C. (X Class)** | Maharashtra State Board of Secondary  and Higher Secondary Education | 2001 | 72.26 |

**Research Experience:**

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| --- | --- | --- | --- | --- | --- |
| **Employer** | **Designation** | **From date** | **To date** | **Experience** | **Research work** |
| **National Research Centre for Grape (NRCG), Pune** | Junior Research Fellow | March-2021 | Till date | 9 months | Cloning and tissue culture of grape |
| **Indian Institute of Science Education and Research**  **(IISER) Tirupati** | Post Doctorate  Research Fellow | Aug- 2019 | Feb- 2020 | 6 months | Study effect of priming on rice against abiotic stresses |
| **Indian Institute of Rice Research (IIRR),**  **Hyderabad** | Senior Research Fellow | March- 2017 | Jully- 2019 | 2 years, 4 months | Optimization of CRISPR/Cas tool for rice |

# M. Sc Thesis Project:

During post graduation I worked on project named as **“Monitoring the expression of selected drought responsive transcription factor genes in sorghum”**, under the guidance of Dr. B Fakrudin, Associate Professor, Institute of Agri-Biotechnology (Presently working as Professor and Head, Department of Biotechnology, Post Graduate Centre, UHS Campus, GKVK Post). Objectives of investigation were expressional quantitation of selected transcription factor genes in root and leaf tissues of sorghum under drought and well water conditions and optimization of protocol for *in situ* hybridization and staining of selected transcription factor genes in root and shoot tissues of sorghum. This study was also included DIG-labeled riboprobe synthesis by *in vitro* transcription.

# Ph. D. Thesis Project:

For Ph.D. thesis project I worked on **“Molecular mapping of blast resistance gene(s) in Akhanphou, an unique land race of rice from North-East India”** under the guidance of Dr.

M. Sheshu Madhav, Principal scientist Indian Institute of Rice Research, Rajendranagar, Hyderabad. In this study I worked with objectives: 1) development of mapping population and study genetics of blast resistance in Akhanaphou. 2) identification of known gene(s) of blast resistance in Akhanaphou through gene profiling. 3) mapping of newly identified gene(s) for blast resistance. 4) validation of the markers linked to the blast resistance genes in alternate population.

# Post PhD research experience:

I worked as a **Senior Research Fellow (SRF) at Indian Institute of Rice Research, Rajendranagar, Hyderabd** with Dr. S. K. Magrouthia, Senior scientist for a period of **2 year 4 month.** I worked on **standardization of CRISPR/Cas tool for rice plant**. We targeted CWIP gene which is involved in heat stress response in rice. I designed two gRNA targeting CWIP gene and cloned in CRISPR vector separately. I optimized *in vitro* regeneration protocol for rice at our lab conditions for Nagina 22 genotype. I could able to generate transgenic plants which were screened for edits.

Presently I am working as a **Junior Research Fellow (JRF)** at **ICAR-National Research Centre for Grape, Pune** with Dr. Anuradha Upadhyay, Principal Scientist, Biotechnology. I am working under the project of exploring the resistance potential of pseudo R-genes to evolve fungal resistance in Vitis vinifera (SERB). I am working on optimization of grape regeneration protocol by various methods and genetic transformation of grapes. This work also involves cloning and expression studies.

# Post-Doctorate Research Experience:

I worked as a **Post-Doctorate Research Fellow** at **Indian Institute of Science, Education and Research (IISER), Tirupati** under the guidance of **Dr. Annapurna Devi Allu** Assistant professor from Biology for six months. In this project, I was working toward understanding the stress memory of rice plant. I started my work for understanding the effect of priming in rice genotype Nagina 22. We also studied the memory and transgenerational memory of rice. We also evaluated effect of priming on yield and yield related traits in field conditions. During this period I also got involved in lab management including ordering/indenting chemicals and instruments *etc*. This was great period for me to learn lab management and maintenance.

During research work I got acquainted with **experimental design and setup, data analysis, evaluation and interpretation of results, learning new techniques, working in a team and defining future strategies.**

**Technical Skill:**

* **Genome Editing and CRISPR/Cas Technology:-** Selection of suitable gene/locus for editing, Designing of gRNAs for targeted genes/locus, Cloning of gRNA and CRISPR/Cas construct development, Genetic transformation of plants with developed construct, Molecular evaluation of transgenic plants, Phenotypic evaluation of transgenic plants.
* **Molecular Breeding Techniques:-** Genotyping, Phenotyping, Crossing experiments, Population development and maintenance, Plant selection, Marker assisted selection, Study of genetics of trait, Genetic map construction and QTL mapping, Advanced backcross QTL mapping, Fine mapping of QTL and candidate gene approach, Gene tagging, Gene pyramiding, Marker assisted backcross breeding (MABC), Association studies, Diversity studies, Gene and allele mining, QTL Seq and MutMap approach *etc.*
* **Molecular Biology Techniques:-** Techniques such as DNA isolation, RNA isolation, protein isolation, plasmid isolation, PCR, qRT-PCR, cDNA preparation, genomic and cDNA library construction, ELISA, *in vitro* transcription, *in situ* hybridization, yeast two hybrid.
* **Gene Cloning and Expression Studies:-** Cloning of genes/DNA in different type of vectors such as restriction based cloning, Gateway cloning, Blunt end cloning, TA cloning *etc*. Cloning and expression in *E. coli*, yeast and plant.
* **Genetic Transformation and Plant Tissue Culture:-** Development and optimization of regeneration protocol for crop plants, *Agrobactrium* mediated transformation, Agroinfilteration assay, *in planta* transformation, Development of transgenic plants and their molecular evaluation at different levels. I had working experience particularly in rice, tobacco and grape tissue culture.
* **Basic Bioinformatics Work: -**Multiple Sequence Alignment and Sequence Analysis, Homology search, Primer designing, Allele mining, Analysis of gene and functional annotation.
* **Experience of working in MS Office** (Word, Excel and Power point).

**Awards and Fellowships:**

1. Achieved Post Doctorate fellowship of IISER, Tirupati in Biology for 2019-2020.
2. Qualified ICAR-SRF exam in Agriculture Biotechnology with all India 3rd rank in 2012 and recipient of ICAR-SRF for 2012-2015 for perusing PhD program.
3. Qualified Jawaharlal Nehru combined entrance examination for admission to M.Sc. (Agricultural Biotechnology) with all India 40th rank in 2007. Received DBT-JNU fellowship during 2007-2009 for pursuing M. Sc. (Agri) Plant Biotechnology.

**Other Academic Achievements:**

1. Received first best poster presentation award in the International e-Conference on

‘Advances and Future Outlook in Biotechnology and Crop Improvement for Sustainable Productivity’ organized by the Department of Biotechnology and Crop Improvement, College of Horticulture, Bengaluru during 24-27th November, 2020.

1. Qualified NET exam conducted by ICAR in the discipline of Agriculture Biotechnology with 76 % score in 2016.
2. Qualified SET (Life Science) exam conducted by Maharashtra government through Pune University in 2013.

**Research Publications:**

1. **Aglawe, S. B**., Fakrudin, B., Patole, C. B., Bhairappanavar, S. B., Koti, R. V. and Krishnaraj, P. U., 2012. Quantitative RT-PCR analysis of 20 transcription factor genes of MADS, ARF, HAP2, MBF and HB families in moisture stressed shoot and root tissues of sorghum. *Physiology and Molecular Biology of Plants.* 18(4): 287-300.
2. Singh, M. A., Devi, E. L., **Aglawe, S. B**., Kousar, N. and Behera, C., 2013. Estimation of heterosis in different crosses of bread wheat (*Triticum aestivum* L.). *The Bioscan*. 8(4): 1393-1401.
3. S.J.S. Rama Devi, B. Umakanth, B. Vishalakshi, **Aglawe, S. B.**, V. Ravindra Babu and Maganti S. Madhav, 2016. Insights on Diversity of Leucine-Rich Repeat (LRR) Domain among Major Blast Resistance Genes of Rice. *Journal of Genomes and Exomes*. 5:1-7.
4. **Aglawe, S. B.**, B., Umakanth, S. J. S., Rama Devi, B., Vishalakshi, Vijay Pal, Badana, Susheel Kumar Sharma, P. K. Sharma, Sudhir Kumar, M.S., Prasad and Maganti Sheshu Madhav, 2017. Identification of novel QTLs conferring field resistance for rice leaf and neck blast from an unique landrace of India. *Gene Reports.* 7:35-42.
5. **Aglawe, S. B.**, B., Umakanth, S. J. S., Rama Devi, B., Vishalakshi, Vijay Pal, Badana, Susheel Kumar Sharma, Sudhir Kumar, M.S., Prasad and Maganti Sheshu Madhav, 2018. Characterization of Akhanaphou an unique landrace from North-East India and its RIL population for rice leaf and neck blast. *Current Trends in Biotechnology and Pharmacy*. 12(2): 118-127.

**Review Articles:**

1. Mamta Singh, **Aglawe, S. B.,** E. Lamalakshmi Devi, Nagma Kousar, Chandana Behera

and S.K. Verma, 2013. Bio-safety concerns and regulatory framework for transgenics.

*Research Journal of Agriculture and Forestry Sciences*. 1(11): 1-7

1. **Aglawe S. B.**, Kalyani M. Barbadikar, Satendra K. Mangrauthia, M. Sheshu Madhav. 2018. New Breeding Technique “Genome Editing” for Crop Improvement: Applications, Potentials and Challenges. *3 Biotech*. 8: 366.
2. Wani S. H., Kumar V., Khare T., Tripathi P., Shah T., Ramakrishna C., **Supriya Aglawe**, Satendra Kumar Mangrauthia. 2020. [miRNA applications for engineering abiotic stress](http://links.email.frontiersin.org/ls/click?upn=talz5vqx2OBI6pER72-2FwHLnsp7c4rM6b0ocVBfnzV5Em4-2Fl6CRI7Ix9rguognvoAM3iZzesGod7aW8RofCbzWhIZzspcntfrOzSCIqXbXwRFnCITGJuH-2FMhLLP56clraHLCwp3VPFuDwfCMpQcP31tEA1xVPpXFoCNK6nRil77xt6n1cQtkciG1ODHHjubaXeRCerewa1ucR75AwaPMta3eSii4s3g-2BX8mX-2F6jtt3h-2FPhPmd4zMJe2vjqNfWjsHLTJOnCb3VYVHtHiAmoN8rLbdOSX2TNOX0sdCNNQpM-2BcM-3DvYmc_bhnBGWeIgC2MF4SAmgP-2FLv7xGuD07alJzxoBt-2B9sExFlzBDg0OD-2FOw4h6-2BIEPChGkgS9bpVKoyqIkh1GB4JOrVQOc7bAtRiAUYdBkbDVtnwizmYMxqxRcSpwIVqU5dN1v6-2FTRC46E9HjudFfkZSKCdjnuMr7A1I-2Fa3w9dClT0oQi5i-2FYyaMO4ukmYncfWrzDHyDXIkvnZBSPeC0CHkqbG-2Bia6JGIYacUd2uNFkjhPMUa3kogDtnu941poVSzAyMYmBJT5bDNhyVj6bzG2zqAMm81c5KzqFvDkGGPKNV6UzJ9NRC0sjp51Q3qCkzgCK7mQdA8-2BCbncnI5tXywfRXqZv7ucfEVWofxhcyX-2F5GFPl21uX1pdumw1sC0yQlhkgDtb9uEcETyiFd9XCr4zr2bea5paLPRhjg1xgrhA18kR014-2FiVcUPRywEEmxj2SuNEg) [tolerance in plants.](http://links.email.frontiersin.org/ls/click?upn=talz5vqx2OBI6pER72-2FwHLnsp7c4rM6b0ocVBfnzV5Em4-2Fl6CRI7Ix9rguognvoAM3iZzesGod7aW8RofCbzWhIZzspcntfrOzSCIqXbXwRFnCITGJuH-2FMhLLP56clraHLCwp3VPFuDwfCMpQcP31tEA1xVPpXFoCNK6nRil77xt6n1cQtkciG1ODHHjubaXeRCerewa1ucR75AwaPMta3eSii4s3g-2BX8mX-2F6jtt3h-2FPhPmd4zMJe2vjqNfWjsHLTJOnCb3VYVHtHiAmoN8rLbdOSX2TNOX0sdCNNQpM-2BcM-3DvYmc_bhnBGWeIgC2MF4SAmgP-2FLv7xGuD07alJzxoBt-2B9sExFlzBDg0OD-2FOw4h6-2BIEPChGkgS9bpVKoyqIkh1GB4JOrVQOc7bAtRiAUYdBkbDVtnwizmYMxqxRcSpwIVqU5dN1v6-2FTRC46E9HjudFfkZSKCdjnuMr7A1I-2Fa3w9dClT0oQi5i-2FYyaMO4ukmYncfWrzDHyDXIkvnZBSPeC0CHkqbG-2Bia6JGIYacUd2uNFkjhPMUa3kogDtnu941poVSzAyMYmBJT5bDNhyVj6bzG2zqAMm81c5KzqFvDkGGPKNV6UzJ9NRC0sjp51Q3qCkzgCK7mQdA8-2BCbncnI5tXywfRXqZv7ucfEVWofxhcyX-2F5GFPl21uX1pdumw1sC0yQlhkgDtb9uEcETyiFd9XCr4zr2bea5paLPRhjg1xgrhA18kR014-2FiVcUPRywEEmxj2SuNEg) *Biologia*. 7: 1063-1081. doi: 10.2478/s11756-019-00397-7.
3. **Supriya Babasaheb Aglawe**, Amit Kumar Verma, Atul Kumar Upadhyay. 2020. Bioinformatics tools and databases for genomics assisted breeding and population genetics of plants: A review. *Current Bioinformatics*, 16(6):766-773 DOI: 10.2174/1574893615999200831144028.

**Short Communication:**

1. **Aglawe, S. B.,** Mamta Singh, Jyotika Purohit, Dipti Singh, 2015. Role of biotechnology in conservation, evaluation and utilization of agricultural biodiversity. *Asian Agri- History*. 19(2): 151-156.
2. Bansode Rohini, Kumar Sandeep, **Aglawe Supriya**, 2015.Application of nanotechnology in agrivulture. *Trends in Biosciences,* 8(10): 2647-2649.
3. Mamta Singh, **Supriya Babasaheb Aglawe**, Niveditha S, Vikenderkaura, Pavan Kumar Malava, Latit Aryaa and Sushil Pandeya, 2020. Finger Millet: Genetic Diversity and Resources, *Kerala Karshakan e-journal*, 38-42.

**Book Chapters:**

1. E. Lamalakshmi Devi, Nagma Kousar, Meenakshi Joshi, **Aglawe, S. B.,** Mamta Singh, Chandana Behera, Ch. Premabati Devi, Jyotika Purohit and S. S. Verma, 2014. “New plant breeding techniques in crop improvement” in book “New plant breeding techniques” compiled by Shabir H. wani and C. P. Malik, Aavishkar Publishers, Jaipur.
2. Mamta Singh, E. Lamalakshmi Devi, Nagma Kousar, **Aglawe, S. B.,** Chandana Behera and S. K. Verma, 2014. “Reverse breeding: an emerging plant breeding technique” in book “New plant breeding techniques” compiled by Shabir H. wani and C. P. Malik, (Aavishkar Publishers, Jaipur).
3. Kalyani M. B.", **Aglawe S. B."**, M. Sheshu Madhav, Satendra Kumar Mangrauthia, Prashant Jeevan Kumar ("equally contributed) 2018. Genome editing: New breeding technologies in plants in book “OMICS-Based Approaches for Plant Biotechnology” published with Wiley-Scrivener Publishing House, Austin, USA. Pages: 245-285
4. **Supriya B. Aglawe**, B. Fakrudin and Mamta Singh 2020. Optimization of mRNA *In situ* Hybridization Protocol Using DIG-labeled Probe for Detection of Transcription Factor Gene expression in Sorghum. Agriculture and Rural Development: Spatial Issues, Challenges and Approaches. Publication Date10 August 2020, ISBN 978-81-946685-8-9.
5. **Supriya B. Aglawe**, Mamta Singh & Ruchi Bansal 2020. Enhanced Utilization of Crop Wild Relatives in Crop Improvement Through Technological Interventions. Agriculture and Rural Development: Spatial Issues, Challenges and Approaches, Publication Date 10 August 2020, ISBN 978-81-946685-9-6.
6. SJS Rama Devi and **Supriya Babasaheb Aglawe**, 2021, Social acceptance and regulatory prospects of genomics in addressing food security in the book Omics Technologies for Sustainable Agriculture and Global Food Security (Vol-I). Editors Anirudh Kumar, Rakesh Kumar, Pawan Shukla, Manish K. Pandey, published with Springer Nature Singapore. eBook ISBN 978-981-16-0831-5. DOI 10.1007/978-981-16- 0831-5. <https://doi.org/10.1007/978-981-16-2956-3_13>
7. **Supriya Babasaheb Aglawe,** Mamta Singh, SJS Rama Devi, Dnyaneshwar B. Deshmukh and Amit Kumar Verma, 2021, Genomics assisted breeding for sustainable agriculture: meeting the challenge of global food security in the book Bioinformatics for agriculture: High-throughput approaches. Editors Atul Kumar Upadhyay and Sowdhamini, published with Springer Nature Singapore. ISBN: 978-981-334-791-5.
8. [Lalit Arya,](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!) [Monika Singh,](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!) [Manjusha Verma,](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!) [Mamta Singh,](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!) [**Supriya Babasaheb**](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!)[**Aglaw**](https://www.sciencedirect.com/science/article/pii/B9780128200896000069?via%3Dihub&!)**e**, 2021, Molecular studies on millets and pseudocereals in the book “Millets and Pseudo Cereals :Genetic Resources and Breeding Advancement, published with science direct, Pages 65-117. ISBN:978-0-12-820089-6.
9. **Supriya Babasaheb Aglawe**, Nakul D. Magar, Yogi Dhawane, Deepak Bhamare, Priya Shah, SJS Rama Devi, S. P. Jeevan Kumar, Kalyani M Barbadikar, 2021, Genome editing crops in food and futuristic crops. Springer Nature Singapore Pte Ltd. (Proof reading stage)

**Conference attended and abstract presented:**

1. Participated in “Indian science congress association-HYD chapter” held at Hyderabad in 2012
2. Participated and presented poster entitled “Biotechnology for conservation, evaluation and utilization of agricultural biodiversity” in national conference on agro-biodiversity management for sustainable rural development held at NAARM, Hyderabad in 2013
3. Participated and presented poster entitled “Genetic engineering of plants for phytoremediation” in national symposium on current trends in biotechnology held at Hyderabad in 2013
4. Participated and presented poster entitled “Plant breeding techniques to combat drought” in national seminar on enhancing water productivity held at Varanasi in 2013
5. Participated in 5th international conference on emerging trends in applied biology, biomedicine and bioforensics held at Hyderabad in 2013
6. Participated and presented poster entitled “Bioinformatics for Plant Biotechnology” in national seminar on applications of bioinformatics in agriculture held at Kasaragod in 2013
7. Participated and presented poster entitled “Mycorhiza: a useful plant-microbe interaction” and “Mitigating abiotic stress in crop plans by rhizospheric microorganisms” in national conference on plant microbe interaction held at Hyderabad in 2014
8. Participated and delivered oral presentation entitled “Molecular mapping of blast resistance gene(s) in Akhanaphou, a unique land race of rice from north-east India” in Asian plant science conference held at, at Lumbini, Nepal in 2014
9. Participated and given oral presentation on “mRNA *in situ* hybridization protocol using dig-labeled probe for detection of transcription factor gene expression in sorghum” in international conference on nano, bio and material sciences held at Hyderabad in 2014
10. Participated in national conference on “New insight in to pharmacogenomics, drug development and personalized medicine” held at Hyderabad in 2014
11. Participated in conference on “Integrating genomics with phenomics in crop improvement learning from commercial perspective” held at Hyderabad in 2015
12. Participated and two poster presented in the International e-Conference on ‘Advances and Future Outlook in Biotechnology and Crop Improvement for Sustainable Productivity’ organized by the Department of Biotechnology and Crop Improvement, College of Horticulture, Bengaluru during 24-27th November, 2020.

Poster 1: Functional analysis of selected drought responsive transcription factor genes through qRT-PCR and *in situ* hybridization in sorghum.

Poster 2: QTLs mapping for rice leaf and neck blast from a unique landrace of India.

**Popular Articles:**

1. “Circadian rhythms in plants” published in AgroBios in 2011
2. “Biotechnology and sustainable agriculture” published in Indian farmer digest in 2013
3. “Genetically modified crops coping with climate change” published in Indian farmers digest in 2013
4. “Transgenic crops to overcome water stress” published in AgroBios in 2013
5. “Biotechnology methods for conservation of plant germplasm” published in AgroBios in 2014

**References:**

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| --- | --- | --- |
| **Dr. M. Sheshu Madhav** Principal Scientist Biotechnology,  Crop Improvement, Indian Institute of Rice Research, Rjendranagar,  Hyderabad-500 030  email: [sheshu24@gmail.com](mailto:sheshu24@gmail.com) Mobile:+91 9581239979 | **Dr. B. Fakrudin**  Professor & Head, Dept. of Biotechnology & Crop Improvement,  Post Graduate Centre, UHS Campus, GKVK Post,  Bangalore-560 065  email: [bfakrudin@gmail.com](mailto:bfakrudin@gmail.com) Mobile:+91 9480369274 | **Dr. Anuradha Upadhyay** Principal Scientist, Biotechnology, ICAR-National Research Centre for Grapes, Manjari farm, Pune-412307  email:[aupadhyay.nrcg@gmail.com](mailto:aupadhyay.nrcg@gmail.com)  Mobile:- +91 8484964394 |

**Declaration:**

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

Place: Pune yours sincerely

Date: 23.12.2021 (Supriya Babasaheb Aglawe)