

## **FACULTY PROFILE**



**1. Name:** Dr. K. Ramachandra Kini

**2. Designation:** Professor

**3. Qualification:** Ph.D. in Biotechnology

**4. Area of Specialization:** Plant Molecular Biology, Molecular Plant-Microbe Interactions, Genetic profiling of medicinal plants and their endophytes

### **5. Awards/Recognitions:**

- **Junior/ Senior Research Fellowship Award** from the Council for Scientific and Industrial Research (CSIR), Government of India for carrying out research work (1994-1998).
- **Young Scientist Award** in the Botany Section of the 86<sup>th</sup> Indian Science Congress held at Anna University, Chennai, India during Jan 3-7, 1999.
- **Guest Scientist Fellowship** from DANIDA, Denmark to carry out research in molecular aspects in mycology at the Danish Government Institute of Seed Pathology for Developing Countries (DGISP), Copenhagen, Denmark, for one year during June 2000 to May 2001.
- **BOYSCAST Fellowship** sponsored by Department of Science and Technology, Government of India for six months during April 2007 to September 2007, at Swammerdam Institute of Life Sciences, University of Amsterdam, The Netherlands.
- **Prof. H.C Dube Outstanding Young Scientist Award 2012** instituted by Indian Society of Mycology and Plant Pathology

### **6. Number of projects:**

<b>Sl. No.</b>	<b>Title of the project</b>	<b>Funding Agency</b>	<b>Amount (Rs. in lakhs)</b>	<b>Year (From-To)</b>
1	Induction of HRGP in pearl millet to develop resistance against downy mildew disease (Co-PI)	DST	24	2002-2006
2	Isolation of endophytic and nonculturable microorganisms from medicinal tree species and endothelin-receptor based screening system (Co-PI)	DBT	38	2003-2007
3	MAP Kinases in pearl Millet Defense Response Against Downy Mildew	UGC	11	2009 -2012

4	Genetic and Meabolic Profiling of Medicinal Plants from Western Ghats	MHRD/UGC	10	2009 -2012
5	Molecular Studies on Floral Malformations in Pearl Millet due to Downy Mildew Infection	UGC	14	2015-2018

**7. Number of Ph.D candidates successfully completed: 09**

**8. Number of Ph.D candidates currently working: 05**

**9. Number of M.Phil candidates successfully completed: 06**

**10. Publications: (Last five years: 2014onwards)**

1. Melvin P., Prabhu S A., Anup, C P., Shailasree S., Shetty H S. and **Kini K. R.** 2014. Involvement of mitogen-activated protein kinase signalling in pearl millet–downy mildew interaction. *Plant Science*, 214:29-37.
2. Ghaffari H., Jalali Ghassam B., Nayaka S.C., **Kini K. R.** and Prakash H.S. 2014. Antioxidant and Neuroprotective Activities of *Hyptis suaveolens* (L.) Poit. against Oxidative Stress-Induced Neurotoxicity. *Cellular and Molecular Neurobiology*. 34: 323- 331.
3. Ghassam B. J., Ghaffari H., Prakash, H.S. and **Kini K. R.** 2014. Antioxidant and hepatoprotective effects of *Solanum xanthocarpum* leaf extracts against CC<sub>14</sub> -induced liver injury in rats. *Pharmaceutical Biology* 52:1060-1068 [doi:10.3109/13880209.2013.877490]
4. Archana B., **Kini K. R.** and Prakash H. S. 2014. Genetic diversity and population structure among isolates of the brown spot fungus, *Bipolaris oryzae*, as revealed by inter-simple sequence repeats (ISSR). *African Journal of Biotechnology*. 13:238-244.
5. Raju R., Palapetta S.M., Sandhya V.K., Sahu A., Alipoor A., Balakrishnan L., Advani, J., George B., **Kini K.R.**, Geetha N.P., Prakash H.S., Prasad T.S.K., Chang Y., Chen L., Pandey A. and Gowda H. 2014. A Network Map of FGF-1/FGFR Signaling System. *Journal of Signal Transduction*, 2014: Article ID 962962 [http://dx.doi.org/10.1155/2014/962962]
6. Prabhu S.A., Singh R., Kolkenbrock S., Neerakkal S., El Gueddari N.E., Moerschbacher B.M., **Kini KR.** and Wagenknecht M. 2014. Experimental and bioinformatic characterization of a recombinant polygalacturonase inhibitor protein from pearl millet and its interaction with fungal polygalacturonases. *Journal of Experimental Botany* 65:5033-5047 [doi:10.1093/jxb/eru266]
7. Prakash H.S., Nayaka C.S., **Kini K.R.** 2014. Downy Mildew Disease of Pearl Millet and its Control. In: *Future Challenges in Crop Protection against Fungal Pathogens*. Goyal A. and Manoharachary C. (Eds) Fungal Biology, Springer Publishers. 109-129. (DOI: 10.1007/978-1-4939-1188-2\_4).
8. Majid BN., Roopa G., Sampath KKK., **Kini KR.**, Prakash HS., Abbagani S., Kiani M. and Geetha N. 2014. Establishment of an efficient explant surface sterilization protocol for *in vitro* micropropagation of *Salacia chinensis* L., an endangered anti-diabetic medicinal plant. *World Journal of Pharmacy and Pharmaceutical Sciences* 3:1266-1274.
9. Melvin P, Prabhu S.A., Veena M., Shailasree S., Petersen M., Mundy J., Shetty H.S. and **Kini K. R.** 2015. The pearl millet mitogen-activated protein kinase *PgMPK4* is involved in responses to downy mildew infection and in jasmonic-and salicylic acid-mediated defense. *Plant Molecular Biology*, 87: 287-302. [DOI 10.1007/s11103-014-0276-8]
10. Prabhu, S.A., Wagenknecht, M., Melvin, P., Kumar, B. S. G., Veena, M., Shailasree, S., Moerschbacher, B. M., and **Kini, K. R.** 2015. Immuno-affinity purification of *PgIPGIP1*, a polygalacturonase-inhibitor protein from pearl millet: studies on its inhibition of fungal

polygalacturonases and role in resistance against the downy mildew pathogen. *Molecular Biology Reports* 42: 1123-1138.

11. Anup CP., Melvin P., Shilpa N., Gandhi MN., Jadhav M., Ali H. and **Kini K. R.** 2015. Proteomic analysis of elicitation of downy mildew disease resistance in pearl millet by seed priming with  $\beta$ -aminobutyric acid and *Pseudomonas fluorescens*. *Journal of Proteomics*, 120:58-74
12. Roopa G., Madhusudhan M.C., Sunil K.C.R, Lisa N., Calvin R., Poornima R., Zeinab N., **Kini K.R.**, Prakash H.S., and Geetha N. 2015. Identification of Taxol-producing endophytic fungi isolated from *Salacia oblonga* through genomic mining approach. *Journal of Genetic Engineering and Biotechnology*, 13:119-127.
13. Ruma K., Sunil K., **Kini K. R.**, and Prakash H. S. 2015. Genetic diversity and antimicrobial activity of endophytic *Myrothecium* spp. isolated from *Calophyllum apetalum* and *Garcinia morella*. *Molecular Biology Reports* 42:1533-1543.
14. Veena M., Melvin P., Prabhu SA., Shailasree S., Shetty HS. and **Kini K. R.** 2016. Molecular cloning of a coiled-coil-nucleotide-binding-site-leucine-rich repeat gene from pearl millet and its expression pattern in response to the downy mildew pathogen. *Molecular Biology Reports*, 43:117-128.
15. Ramu V., Krishna V., Krishnappa P., Rajanna SKS., Deeplanaik N., Anup C P., and **Kini K. R.** 2016. Identification of Biomarkers for Resistance to *Fusarium oxysporum* f. sp. *cubense* Infection and *in Silico* Studies in *Musa paradisiaca* Cultivar Puttabale through Proteomic Approach. *Proteomes*, 4:9
16. Veena M., Melvin P., Shailasree S. and **Kini K. R.** 2016. Cloning, expression and purification of resistance gene analogue RGPM 301 from pearl millet in *Escherichia coli*. *Journal of Applied Biology & Biotechnology*, 4: 53-59.
17. Anup C. P. and **Kini K. R.** 2016. Analysis of Dynamics of Proteome in Resistant Cultivar of Pearl Millet Seedlings during *Sclerospora graminicola* Infection. *Journal of Applied Biology & Biotechnology*, 4: 67-71.
18. Ranjini P., Melvin P., Kumar S. J., Shailasree S., Kesagodu D., Shetty H.S. and **Kini KR.** 2016 . Chitosan and  $\beta$ -amino butyric acid up-regulates transcripts of resistance gene analog RGPM213 in pearl millet to infection by downy mildew pathogen. *Journal of Applied Biology & Biotechnology*, 4(5): 01-06.
19. Shetty, H S and Raj, S N and **Kini, K R** and Bishnoi, H R and Sharma, R and Rajpurohit, B S and Mahala, R S and Yadav, H P and Gupta, S K and Yadav, O P. 2016. *Downy Mildew of Pearl Millet and its Management*. All India Coordinated Research Project on Pearl Millet (ICAR), Jodhpur.
20. Bharathi, T.R. Shrishya, N.B., Sampath Kumara, K.K.; Saini, R.K.; Shashibhushan, N.B.; Kini, K.R.; Prakash H.S. 2016. Identification and genetic diversity analysis of Memecylon species using ISSR, RAPD and gene-based DNA bar coding tools. *Electronic Journal of Biotechnology*, 24:1-8.
21. Anup C. P. Melvin P. and **Kini K. R.** 2017. Reference gene selection and validation for gene expression studies in downy mildew infected pearl millet by quantitative real-time PCR. *Australasian Plant Pathology*. 46:441-452.
22. Sunil KCR., Rachel L., Bhavya .G, Swati K, Sridhar R.S., Kumar J S., **Kini K.R.**, Prakash HS, and Geetha N. 2017. Practiced Gram negative bacteria from dyeing industry effluents snub metal toxicity to survive. *Journal of Applied Biology & Biotechnology*. 5 (4):37-42.
23. Bagnazar M., Mahesh M.G., Saidi M., **Kini K R.**, Prakash H S. and Geetha N. 2018. Evaluation of genetic stability using FRAPD markers as novel method along with antioxidant and anti-diabetic properties of micropropagated *Salacia chinensis* L. *Acta Physiologiae Plantarum* 40:128
24. Bajpe S N., Bharathi T R., Marulasiddaswamy K M., Kumara K K S., Prakash H. S. and **Kini K R.** 2018. Efficiency of RAPD, ISSR and ITS markers in detecting genetic variability among *Salacia* species sampled from the Western Ghats of Karnataka. *Molecular Biology Reports*: 45:931-941. (doi.org/10.1007/s11033-018-4248-y)

25. Jose LR, Mahadeviah SN, Balamurugan V and **Kini KR**. 2018. Evaluation of an in-house LipL32 polymerase chain reaction for diagnosis of leptospirosis and its correlation with various serological diagnostic techniques. *Indian J Med Microbiol.* 36:385-390.
26. Mazur MJ., Kwaaitaal M., Mateos M A., Maio F., **Kini K R.**, Prins M. and van den Burg H A. 2019. The SUMO Conjugation Complex Self-Assembles into Nuclear Bodies Independent of SIZ1 and COP1. *Plant Physiology*. DOI: <https://doi.org/10.1104/pp.18.00910>
27. Bhat S. K., Kavya P., Kini K R., and Rao AG (2021) Design of mutants of GH11 xylanase from *Bacillus pumilus* for enhanced stability by amino acid substitutions in the N-terminal region: an *in silico* analysis. *Journal of Biomolecular Structure and Dynamics*, DOI: [10.1080/07391102.2021.1899988](https://doi.org/10.1080/07391102.2021.1899988)

## 12. Conference/Seminar organized:

Sl. No.	Status as organizer	Title of the conference/seminar	Date
1	Organizing Committee member	NABS National Seminar on “Biological products for Crop, Animal and Human Diseases- Problems and Prospects”	Aug 21-22, 2015
2	Organizing Committee member	One day National Symposium on “Perspectives in Plant Biotechnology”	Feb 9, 2018

## 13. Membership to professional Organization/Associations:

Sl. No.	Name of the Association/Organizations	Life member/Ordinary member
1	Indian Science Congress	Life member
2	Indian Society of Mycology and Plant Pathology	Member
3	Society of Biological Chemists (I)	Member
4	Indian Phytopathological Society	Member
5	Indian Botanical Society	Member
6	Association of Microbiologists (India)	Member