

Curriculum vitae

Dr. Rachayya M. Devarumath

Scientist

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Date of Birth: 17th June 1969

Nationality: Indian

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Education qualifications:

B. Sc.	April 1990	Botany, Zoology and Chemistry	JSS college, Dharwad	FIRST CLASS
M.Sc.	April 1992	Botany	Karnatak University, Dharwad	SECOND CLASS
Ph.D.	October 1997	Botany	Karnatak University, Dharwad	

Ph.D. Title of Thesis: “Genome homology and differentiation in *Eleusine coracana* and its wild species”

Awards: University Research Studentship for Ph.D.

Area of Interest: Plant Molecular Biology and Genetic Engineering

Recognition as external examiner and paper setter: Department of Biotechnology, Bharati Vidyapeeth Deemed University, Pune

Recognition as a Post-Graduate teacher of **University of Pune**, for guiding **Ph.D.** student in the subject of **Biotechnology**.

Recognition as a Post-Graduate teacher of Shivaji University of Kolhapur, for guiding **Ph.D.** student in the subject of **Botany**.

Employment History / Research Experiences:

Dec. 2004 - till date Scientist, Molecular Biology and Genetic Engineering Laboratory, Vasantdada Sugar Institute, Manjari (Bk) Pune 412 307 India

From Mar. 1997 to Dec. 2004. Worked as postdoc fellow in following projects Sanction to Prof. S. N. Raina, Department of Botany, University of Delhi, Delhi

Mar. 1997 - Feb. 1998. Research Associate, CSIR Project on “Ongoing genetic improvement of *Phlox drummondii* and *P. paniculata*”

Jan. 2004 - Dec. 2004. Research Associate, DBT Project on “Genetic profiling and pilot production of the identified elite species and quantification of the active bio-molecules”

Nov. 2002 – Dec. 2003. Research Associate, DBT Project on “Characterization and improvement of tea through biotechnological tool”

Nov. 1999 - Oct. 2002. Research Associate and Scientist, DBT Project on “Chromosome Fingerprinting and DNA Bank-net of Himalayan endangered species”

Mar. 1998 - Oct. 1999. Research Associate, DBT Project on “Assessment of molecular technologies for the study of genetic variation in tissue-cultured-derived plants”

Research project entitled: “Development of diagnostic tool for Sugarcane grassy shoot disease and sequence associated with Phytoplasma genome.” Sanctioned (Year 2006- 2008) from Department of Biotechnology, Government of India, New Delhi. It is ongoing project, as Co-Principal Investigator, Principal Investigator Dr. D. Theertha Prasad. (In collaboration with ICGEB, New Delhi.)

Summary of the Research work:

- Presently working on DNA fingerprinting and Genetic transformation of sugarcane.
- The extraction of active bio-molecules from the important medicinal plants like *Valeriana*, *Gentiana* and *Picrorhiza* species and studied the genetic diversity through molecular markers.
- Characterization and improvement of tea clones through biotechnological tools. The aim of project to characterize different tea clones through molecular markers.
- Chromosome fingerprinting and DNA Bank-net of Himalayan endangered and medicinal important plants like *Podophyllum*, *Aconitum*, *Dactylorhiza* species. Study the biodiversity, Cytogenetic analysis and Genetic Diversity through DNA markers like RAPD, ISSR, AFLP, RFLP (using nuclear & organellar probes) Physical localization of rDNA probes on chromosomes using Florescence In Situ Hybridization (FISH) and Genomic In Situ Hybridization (GISH) techniques.

- Genetic integrity of the several tissue culture raised plants like **Coffee (Rani. et al. 2000)**, **Tea (Devarumath et al. 2002)**, Teak, Piper, Small Cardamom, Large cardamom and Turmeric using different molecular markers like RFLP (using nuclear & organellar probes), AFLP, RAPDs and ISSR were studied.
- Cytogenetics and genetic improvement through tissue culture in *Phlox* an important ornamental plant of India.
- PCR cloning of Internal Transcribed Spacer (ITS) regions of nrDNA. Partial sequences were submitted to NCBI database as follows: *Arachis* spp. NCBI Accession No. AJ 549348 to AJ 549381 and AJ 555556 to AJ 555563, *Cicer* spp. NCBI Accession No. AJ 550308 to AJ 550327, *Carthamus* spp. AJ 969130 to AJ 969159, *Podophyllum* spp. AJ 717328 to AJ 717335, *Aconitum* spp. AJ 717336 to AJ AJ 717345
- During Ph.D. Program, work was concerned with genome relationship among cultivated species and their wild relatives of genus *Eleusine*.

Research Publications:

- Apekshita Singh, **R. M. Devarumath**, S. RamaRao, V. P. Singh and S. N. Raina (2008) Assessment of genetic diversity, and phylogenetic relationships based on ribosomal DNA repeat unit length variation and Internal Transcribed Spacer (ITS) sequences in chickpea (*Cicer arietinum*) cultivars and its wild. **Genetic Resources and Crop Evolution**. 55(1) 65-79
- Devarumath RM**, Doule RB, Kawar PG, Naikebawane SB and Nerkar YS (2007). Field Performance and RAPD Analysis to Evaluate Genetic Fidelity of Tissue Culture Raised Plants vis-à-vis Conventional Setts Derived Plants of Sugarcane **Sugar Tech**. 9(1): 17-22
- Devarumath RM**, Hiremath SC, Rama Rao S., and Arun Kumar (2005) Genome interrelationship in the genus *Eleusine* (Poaceae) as revealed through heteroploid crosses **Caryologia** 58(4): 300-307
- Devarumath RM**, Hiremath SC, Rama Rao S. Arun Kumar and Bewal S. (2005) Genome analysis of finger millet *E. coracana* by interspecific hybridization among diploid wild species of *Eleusine* (Poaceae) **Cytologia** 70(4): 427-434
- Devarumath RM**, Nandy S, Rani V, Marimuthu S, Muraleedharan N and Raina SN (2002) RAPD, ISSR and RFLP fingerprints as useful markers to evaluate genetic intergrity of diploid and triploid elite tea clones representing *Camellia sinensis* (China type) and *C. assamica* ssp. *assamica* (Assam type). **Plant Cell Reports** 21: 166-173
- Raina SN, Kojima T, Rani V, Ogihara Y, Singh KP and **Devarumath RM** (2001) RAPD and ISSR fingerprints as useful genetic markers for analysis of genetic diversity, varietal identification, and phylogenetic relationships in peanut (*Arachis hypogaea*) cultivars and wild species. **Genome** 44: 763-772

Rani V, Singh KP, Shiran B, Nandy S, Goel S, **Devarumath RM**, Sreenath HL and Raina SN (2000) Evidence for new nuclear and mitochondrial genome organizations among high frequency somatic embryogenesis-derived-plants of allotetraploid *Coffea arabica* L. (Rubiaceae). **Plant Cell Reports** 19:1013-1020

Publication communicated and in perprations:

Kawar PG, **Devarumath RM** and Nerkar YS (2008) Use of RAPD markers for assessment of genetic diversity in sugarcane cultivars. **(Communicated to Indian Journal of Biotechnology)**

Tawar PN, Sawant RA, Dalvi SG, Nikam AA, Kawar PG and **Devarumath RM** (2008) An assessment of somaclonal variation in micropropagated plants of sugarcane by RAPD markers. **(Communicated to Sugar Tech)**

Vaze A, **Devarumath RM** and Theertha Prasad (2008) Isolation and PCR amplification of Genomic DNA from Dry leaf samples of sugarcane. **(In Preparation)**

Doule RB, Kawar PG, Nerkar YS and **Devarumath RM** (2007) Field Performance of Promising Somaclonal Variants and RAPD Analysis to Assess Genetic Variation in Sugarcane (*Saccharum* spp.). **(Communicated to Indian Journal of genetic and plant breeding)**

Abstracts/ papers in Seminars/Symposium:

Vaze A, **Devarumath RM** and Theertha Prasad v (2007) Isolation and PCR amplification of Genomic DNA from Dry leaf samples of sugarcane **(Abstract accepted in International Plant and Animal Genome conference XV 2007)**

Nerkar YS, Pant NM, Tawar PN, Sawant RA, Dalvi SG, Nikam AA and **Devarumath RM** (2006). Protocol for the production and supply of quality seed in sugarcane using the micropropagation technology. Brain storming session on Developing standards for tissue culture raised planting materials of sugarcane at Vasantdada sugar institute, Pune June 9, 2006. pp 5-12

Ambika, Bisht T, Chauhan, SMS, Vaishnavi, S, **Devarumath RM**, Raina SN (2004) Isolation of iridoid glycosides from the roots and rhizomes of *Picrorhiza kurroa*. IUPAC International Conference on Biodiversity and Natural Products Chemistry and Medical Applications, New Delhi, p. P-23, 26-31, **(Abstract)**

Raina SN, Sharma S and **Devarumath RM** (2004) DNA fingerprinting, A prerequisite towards stablishing quality field performance of micropropagated plants of elite tea clones. International conference on O-CHA (Tea) culture and science, Nov. 4-6. 2004 Pr-0-16 pp. 141-144.

Joshi LD, **Devarumath RM** and Hiremath SC. Cytology of genus *Cymopsis* and origin of guar bean. One day seminar on Recent advances in Cytogenetic and Tissue Culture. Department of Botany, Karnatak University, Dharwad 27th Jan. 1998, p5

Articles in Bulletins/ training programs:

Devarumath RM (2007) Genetic fidelity of micropropagated plants, National level training programme on Quality seed production in sugarcane through tissue culture 4-6 Jan. pp C1-C2

Devarumath RM and Sheelavantmath SS (2007) Genetic Engineering of Chloroplasts. **VSI Bulletin** 7(3)

Vaze AM and **Devarumath RM** (2007). Sugarcane as Biofactory **VSI Bulletin** 7(4)

Devarumath RM (2006). DNA fingerprinting technique for varietal identification. Sugarcane Seed Certification Manual, 1st state level training programme for officers of Maharashtra state seed certification agency Akola at Vasantdada Sugar Institute Pune, 7-8 Feb. 2006. PP 55

Devarumath RM, Sheelavantmath SS, Kawar PG, Bhagwat PA and Nerkar YS (2006) DNA fingerprinting techniques in Varietal Identification and Genetic Fidelity Determination of Micropropagated Plants. **VSI Bulletin** 6(3) 17-18

Reference:

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