

PROFILE OF SCIENTIST/RESEARCH WORKER

Name: Dr. Rahul Lakshman Zanan (M. Sc., Ph. D.)

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Qualification: Ph.D. in Botany

Area(s) of Specialization: Indian Pandanaceae: Taxonomy, Phylogeny, Conservation and floral volatile diversity and its gene expression; Genetic diversity

Occupation/Designation: DST FAST-TRACK Young Scientist

Major Activities: Three new species of *Pandanus* namely *P. palakkadensis* and *P. mangalorensis* from South India (Nadaf et. al., 2010, Zanan and Nadaf, 2011) and *P. martinianus* from North-eastern India (Zanan and Nadaf, 2012) have been reported. The Indian Pandanaceae family is revised for the first time. Phylogenetic relationship among the Indian Pandanaceae genera has been established using chloroplast-DNA based non coding regions. This study has led to rearrange the family at section and sub genus level. The conservation status of Indian *Pandanus* species based on IUCN Red List Categories and Criteria has been assessed, and concluded that 6 species are falling under threatened category, 9 species are fall under Least Concern category and 2 species fall under Data Deficient category (Zanan and Nadaf, 2013). This work has been published by Springer publications in the form of book as "Indian Pandanaceae: An overview".

Submission of DNA Sequences to NCBI GenBank:

Species belongs to genus *Pandanus*: **39 sequences**

Species belongs to genus *Benstonea*: **6 sequences**

Total submissions: **45 sequences**

In addition,

Fragrance of South Indian *Pandanus* species by olfactory evaluation and found that fragrance of staminate inflorescences of *P. thwaitesii*, *P. kaida* and *P. palakkadensis* is comparable with the fragrance of commercially cultivated *P. odorifer* (Zanan and Nadaf, 2011).

Moreover, elite population of *P. amaryllifolius* for highest 2AP contents is identified by HS-SPME/GC-FID (Wakte et al., 2012). The genetic diversity among the clonal populations of *P. amaryllifolius* has been assessed using ISSR and AFLP molecular markers and found that the species is highly homozygous. (Wakte et al., 2012). The morphological and genetic diversity of 22 populations of *Gymnema sylvestre* from Western Ghats of Maharashtra has been assessed using RAPD and ISSR molecular markers and recorded high level of gene differentiation among the populations (Shahnawaz et al., 2012). Also the mechanism of 2-acetyl-1-pyrroline biosynthesis in *Bassia latifolia* flowers has been worked out (Wakte et al., 2011).

Awards/Recognitions:

Awarded Young Scientist research project entitled “**Assessing aroma volatile diversity and molecular tagging of principle aroma volatiles in South Indian *Pandanus* species**” by Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Government of India, New Delhi for Rs. 25 lakhs (2013-2016).

Received **Best oral presentation award** in the National Seminar on “Plant biodiversity for sustainable development” organized by Department of Botany, University of Pune (March 2011).

Award of **UGC Research Fellowships in Science for meritorious students** sponsored by **University Grant Commission** (Government of India), held at University of Pune, Pune from 1st December 2008 to 14th December 2011.

Award of Ph. D. **Research Fellowships in Science** sponsored by **University of Pune**, held at University of Pune, Pune from 1st January 2008 to 30th November 2008.

Received Best Poster presentation award (Third prize) in **SAP-DRS-II Seminar on “Emerging trends on Biodiversity Management”**, Organised by Department of Botany, University of Pune, Pune (March 2008).

Received Best Oral presentation award (Third prize) **in National Seminar on “In the role of care-takers of biosphere”**, organized by Department of Botany, Vidya Pratishthan, Baramati, (February 2008).

Selected for national level Workshop on **Taxonomy and Bioprospecting** sponsored by the Ministry of Environment and Forest (Government of India), held at University of Delhi, New Delhi from 28th January to 6th February, 2008.

Selected Publications:

1. Altafhusain B. Nadaf and **Rahul L. Zanan** (2013). **Indian Pandanaceae: An overview**. Springer Pub. Co. DOI: 10.1007/978-81-322-0753-5. ISBN: 978-81-322-0752-8 (hard copy), ISBN: 978-81-322-0753-5 (eBook).
<http://www.springer.com/life+sciences/ecology/book/978-81-322-0752-8>
2. **Rahul L. Zanan** and Altafhusain B. Nadaf (2013). Conservation Status of Indian Pandanaceae. *American Journal of Plant Sciences*, 4: 51-56 (<http://www.scirp.org/journal/ajps>).
3. **Rahul L. Zanan** and Altafhusain B. Nadaf (2012). *Pandanus martinianus* (Pandanaceae), a new endemic species from northeastern India. *Phytotaxa*, 73:1-7.
4. Kantilal V. Wakte, **Rahul L. Zanan**, Ajay Saini, Narendra Jawali, Ratnakar J. Thengane and Altafhusain B. Nadaf (2012). Genetic diversity assessment in *Pandanus amaryllifolius* Roxb. populations of India. *Genetic Resources and Crop Evolution* DOI 10.1007/s10722-012-9882-y.
5. **Rahul L. Zanan** and Altafhusain B. Nadaf (2012). *Pandanus mangalorensis*: A New species of Pandanaceae from Southern India. *Kew Bulletin* 67: 1 – 5. DOI: 10.1007/s12225-012-9366-4.
6. Kantilal V. Wakte, **Rahul L. Zanan**, Ratnakar J. Thengane, Narendra Jawali and Altafhusain B. Nadaf (2012). Identification of elite population of *Pandanus amaryllifolius* Roxb. for higher 2-acetyl-1-pyrroline and other volatile contents by HS-SPME/GC-FID from Peninsular India. *Food Analytical Methods*, 1-13. DOI 10.1007/s12161-012-9373-y.
7. Mohd. Shahnawaz, **Rahul L. Zanan**, Kantilal V. Wakte, Sarika V. Mathure, Trupti D. Kad, Subhash S. Deokule and Altafhusain B. Nadaf (2012). Genetic diversity assessment of *Gymnema sylvestre* populations from Western Ghats of Maharashtra. *Genetic Resources and Crop Evolution*, 59:125–134, DOI 10.1007/s10722-011-9757-7.
8. **Rahul L. Zanan** and Altafhusain B. Nadaf (2011). Some new records of *Pandanus* species from Maharashtra and Goa states of India. *J. Economic and Taxonomic Botany*, 35 (4): 809-815.
9. **Rahul L. Zanan** and Altafhusain B. Nadaf (2011). Collection, characterization and olfactory evaluation of *Pandanus* species in Southern India. *Plant Genetic Resources: Characterization and Utilization*, 1–3. DOI:10.1017/S1479262111000748.

10. Kantilal V. Wakte, Trupti D. Kad, **Rahul L. Zanan** and Altafhusain B. Nadaf (2011). Mechanism of 2-acetyl-1-pyrroline biosynthesis in *Bassia latifolia* Roxb. flowers. *Physiology and Molecular Biology of Plants*, 17(3):231–237. DOI: 10.1007/s12298-011-0075-5.
11. Altafhusain B. Nadaf, **Rahul L. Zanan** and Kantilal V. Wakte (2011). A new endemic species of Pandanaceae from India: *Pandanus palakkadensis*. *Kew Bulletin*, 66: 1-5. DOI: 10.1007/s12225-011-9265-0.
12. **Rahul L. Zanan**, Kantilal V. Wakte and Altafhusain B. Nadaf (2009). *Pandanus unipapillatus* Dennst.: A new record for Maharashtra and Goa. *Journal of Bombay Natural History Society (BNHS)*, 106 (1): 130-131.