

PROFILE OF SCIENTIST / RESEARCH WORKER

Name : Dr. (Mrs.) Vinaya Shekhar Ghate

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Qualification: M.Sc. Botany (PPPR), Ph.D. in Botany

Area(s) of Specialization: Floristics, Taxonomy, Ethnobotany, Medicinal plants,
Biodiversity conservation

Occupation / Designation: Retired from Agharkar Research institute, (ARI) Pune as
Scientist-in-charge (Scientist E)

Major Activities :

- Joined Agharkar Research Institute (Previously known as Maharashtra Association for the cultivation of Science – Research Institute) as Junior Laboratory Assistant in 1975, immediately after getting M.Sc. Degree in First Class with Distinction. Subsequently, in 1979 secured position of Senior Laboratory Assistant and thereafter obtained position of Junior Scientific Assistant in 1982. In initial period, acquired knowledge of different research methodologies required for botanical work.
- Efforts were made to increase educational qualification during this period. Completed Work for M. Sc.(by Research) in 1979 and for Ph.D. in 1988. Research topics were as follows:
 - Aquatic Flowering Plants of Greater Pune area.
 - Arboreal Flora of Pune and neighbouring districts with special reference to Social forestry.
- Assisted Dr. Vartak V. D. in number of research projects in thrust areas of Taxonomy and Floristics in the capacity of S.L.A. and subsequently as J.S.A. Participated in DOEn sponsored project on Sacred Groves, Floristic studies on Karnala and Kanakeshwar.
- Small projects on Taxonomic revision of genus *Elaeocharis* R.Br. (family Cyperaceae), Lower glume studies in genus *Arthraxon* (Family Poaceae), Exotic ornamental herbs, live hedges, rock breaking species were completed under guidance of Dr. V.D. Vartak and data was published in the form of research papers.
- Various facets of tree flora like indigenous fuel yielding species, established exotic trees, tree giants from Sacred groves, medicinally important trees for amenity plantation, germination studies and seedling morphology of important economic trees were studied in the project floristic and socioeconomic studies on tree flora of Western Maharashtra.

All these efforts helped to understand flora and resources of local use value and develop the base of systematic studies.

- In 1990, joined as Scientist B and subsequently promoted as Scientist C, Scientist D and E1 in 1995, 2000 and 2005 respectively. With the basic training and expertise developed in the field of floristics, ethnobotany and taxonomy, since 1993 onwards projects related to biodiversity, germplasm studies and evaluation of medico-botanical resources are being handled under various institutional and sponsored programmes.
- **Assessment of biodiversity with reference to development :**
 - Urban development and flora – Pune Case study
 - Critical survey vegetation in ILS Law college Campus with respect to road development (Contract project)
 - Industrial development – Assessment of PCMC diversity (Worked as Expert member in the team of Technology Park, Pune)
 - Enrichment through man-made plantations and impact on native flora and fauna-Smritiwan studies (Guide – Summer training)
 - Assessment of sacred groves – for species diversity and changes over a period (Guide – Summer training)
 - Anthropogenic developments in rural areas and assessment of flora – Taluka Junnar (Guide – Ph.D. work)
 - Forest fires and flora –Dang - Nasik case (Contract project)
 - Assessment of eco-sensitive zones – Rock outcrops of Mahabaleshwar-Panchgani-Kas areas (Contract project)

Work experience and outcome of these projects is valuable to understand the losses or gain of species in peculiar habitat niches. The data is useful to take strategic steps towards conservation of species and save the endangered habitats.

- **Distribution, Diversity and Germplasm studies in endemic plants, medicinal plants and other valuable species.**
 - RET species studies – 40 species studied through sponsored (MOEF project) and in-house projects (*ex-situ* efforts)
 - Medicinal plants – Root drugs group (Safed musali, Bruhat panchmul, Semul) and other species – 25 (+)
 - Seed and seedling morphology of high valued medicinal plants.

Propagation methods using simple nursery techniques have been developed for these endemic rare species as well as over-exploited medicinal plants. The results are directly applicable for large scale multiplication of species.

- **Bioprospecting :**

Assessment of inter- intra-specific diversity in economic species specially medicinal plant complexes using modern tools of pharmacognosy, chemo-profiles and DNA assessment.

- Evaluation of crude drug samples commonly used in Dhutpapeshwar Ayurvedic industry using simple macroscopic characters.
- Work on High valued Medicinal plants – Chirayat, Shankhapushpi, Kutki, Safed musali, Moringa, Bombax complexes
- Diversity in *Carissa* - Evaluated nutritional in elite potentials types and studied genetic relationships using DNA tools. Exploring possibilities of its medicinal utility.

The outcome of these studies bring on record new elite type of use value resources as well as authenticate the proper species in the complex particularly the medicinal plants with common commercial name.

Membership of Professional Societies :

Name of society	Class of membership
Society of Tree Sciences, Solan	Life member
Society of Ethnobotanists, Lucknow.	Life member
Indian Women Scientists Association, Mumbai	Life member
Indian Association of Angiosperm Taxonomy, Calicut	Life Member
Marathi Vidnyan Parishad, Pune.	Life member
Vriksha Samwardhini, Pune	Life member
Nisarga-Sevak, Pune	Life member

Publications (*Numbers only*) :

- Books : One (Edited), One (manual) Three (In Marathi – for popularization of science)
- Research Papers : 65
- Proceeding papers and book chapters : 15
- Technical Reports : 9

Activities of Social Relevance :

- Worked as Coordinator for two courses viz. Certificate course in Home gardening and Certificate course in field botany for 6 years.
- Over 70 articles have been written mostly in local language (Marathi) related to botany and biodiversity for popularization of science.

Awards / Recognitions :

- Fellow of Society of Ethnobotanists - Awarded by Society of Ethnobotanists
- Technical co-operation training fellowship was awarded in 1995 by British Council under Colombo Plan to attend 12 week training programme on planning of projects for biodiversity conservation.
- Recipient of Dr. Ekbote prize
- Recipient of V.D. Vartak Vanamitra puraskar