

V. S. Rama Das (1933–2010)

V. S. Rama Das, an eminent botanist and plant physiologist passed away at the age of 77 years, on 9 December 2010 in Vijayawada, Andhra Pradesh (AP), following a brief illness. With his demise, botanists, particularly plant physiologists of our country, have lost an eminent scientist and excellent teacher. His unique strength was his knowledge of not only plant physiology, but also plant systematics and morphology, which is a rare combination of expertise.

Vallabhaneni Sita Rama Das (popularly known as Rama Das in India and Das abroad), was born on 5 February 1933 in Gudlavalleru village, Krishna District, AP. He had his early education at the Hindu College, Machilipatnam, AP, and obtained his B Sc (with botany, zoology and chemistry) at Andhra University, Waltair in 1951. He joined the University of Delhi to receive his M Sc degree in botany in 1953. He then moved to Sweden to work as a Research Fellow with the renowned mycorrhizal expert, Elias Melin, for about a year, and to University of Oxford, UK to work with the internationally acclaimed plant physiologist, W. O. James, known for his pioneering work on plant respiration. Rama Das was awarded D Phil (1957) for his classic work on isolated chloroplasts. He could not only isolate, for the first time, functional chloroplasts from spinach leaves, but also demonstrated that they do not respire as mitochondria do¹.

After returning to India from Oxford, Rama Das started his professional career as an Assistant Professor in the Department of Botany, University of Allahabad during 1957–1959. The urge for contemporary research made him go to University of California, Berkeley Campus, USA (1959–1960) to work with Daniel I. Arnon, a legendary photosynthesis expert, famous for his unequivocal demonstration of photosynthetic electron transport and photophosphorylation in isolated chloroplasts. Rama Das came back to India in 1960 to join as a lecturer in the Department of Botany at Sri Venkateswara University (SVU), Tirupati, AP, and was promoted as a Reader in Botany in 1967. During 1967–1969, he took leave to be an Associate Professor at the Memorial University, Newfoundland, Canada. Rama Das returned to India to assume charge as Reader and Head of the

Department of Botany (1969) and later became Professor and Head of the Department Botany at SVU. He was Dean of the School of Biology and Earth Sciences; Vice-Principal, College of Science and Rector of SVU. As the senior-most professor, Rama Das guided his colleagues in the Department as well as in SVU with his spirited advice. He had an excellent academic career, spanning almost three decades (1960–1988) at SVU.



The later part of his career was at the School of Life Sciences, University of Hyderabad (UoH). In 1978, Rama Das joined as Professor at UoH, but returned to SVU after two years (1980). He then took a major decision of leaving SVU to rejoin UoH in 1988 as a professor in the School of Life Sciences, where he spent more than a decade. After his formal superannuation (1993), he continued to be in UoH as CSIR Emeritus Scientist and later Professor Emeritus until 1999. He was the Director of the CSIR Complex (later renamed as Institute for Himalayan Bioresource Technology) at Palampur for a short period of one year during 1991–1992.

Rama Das was a successful researcher with his excellent contributions to research in the fields of plant physiology, plant biochemistry and agriculture. He has more than 200 research publications to his credit. In recognition of his contribution to the field of plant physiology, Rama Das was bestowed with several awards and recognitions. He was elected Fellow of Indian Academy of Sciences

(1975), Indian National Science Academy (INSA; 1978) and founder fellow of the National Academy of Agricultural Sciences (1991). He was twice National Lecturer of the University Grants Commission (during 1978–1979 and 1985–1986) and was the recipient of the Meritorious University Teacher Award 1981 by the Government of Andhra Pradesh. He received the J. J. Chinoy Memorial Medal of the Indian Society for Plant Physiology (1978), Birbal Sahni Medal of the Indian Botanical Society (1985), Jagadish Chandra Bose Award of University Grants Commission (1991), S. M. Sircar Memorial Medal of University of Calcutta (1986), Honor summs Medal of Watumull Foundation, USA, (1987) and Prof. S. B. Saxena Memorial Award of INSA (1996). He was the editor of the *Indian Journal of Plant Physiology* and served on the editorial board of the *Proceedings of the Indian National Science Academy* and the *Proceedings of the Indian Academy of Sciences*.

The major contributions of Rama Das were in the areas of C₃, C₄ and CAM photosynthetic systems, stomatal movement and physiology of herbicidal action. The most notable among his findings are: discovery and characterization of several C₄ plants in local flora², the direct role of chloroplasts in the pathway of rubber biosynthesis in guayule³, occurrence of CAM in non-succulent shrub species, discovery of novel growth-regulatory substances, phenolics in lower plants and bioenergetics of guard cells in relation to stomatal function. At UoH, he developed a fascination for heliotropic leaf movements in plants, which he perceived as an important adaptation to optimize photosynthesis under high light stress.

Rama Das would be remembered for his establishment of one of the strongest schools of plant physiology in India, particularly in photosynthesis, first at the Department of Botany at SVU, and later at UoH. With his diverse skills in science, teaching and research supervision, he was one of the most sought-after research supervisors for Ph D students. Twenty students obtained Ph D under his supervision, mostly from SVU, and a few from UoH. We (A.S.R. and A.R.R.) had the great fortune of joining his laboratory for Ph D, which was a crucial turning point in our careers. The major strengths,

that we both derived from him are frequent visits to the library, continuous update of the literature and the use of innovative, simple techniques for research.

After his superannuation and moving away from UoH, Rama Das continued to lead an active academic life and maintained his intense reading habit. He moved to Nagarjuna University as INSA Honorary Scientist and Visiting Professor and taught the M Sc students for several years. During these years, he also published a book titled *Photosynthesis: Regulation Under Varying Light Regimes*⁴. Despite his fragile health, Rama

Das visited SVU and delivered the keynote address during the International Seminar on Medicinal Plants and Herbal Products during March 2008. This was perhaps the last major public event that he attended. The plant science fraternity in India has indeed lost a great scientist. Rama Das leaves behind his wife, son, daughter and their families, besides several students/associates.

1. James, W. O and Das, V. S. R., *New Phytol.*, 1957, **56**, 325–343.
2. Raghavendra, A. S. and Das, V. S. R., *Photosynthetica*, 1978, **12**, 200–208.

3. Reddy, A. R., Suhasini, M. and Rama Das, V. S., *Plant Physiol.*, 1987, **84**, 1447–1450.
4. Das, V. S. R., *Photosynthesis: Regulation Under Varying Light Regimes*, Science Publishers, Enfield, USA and Plymouth, UK, 2004.

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