

Profile of Scientist



1. Name of the Scientist : Dr. D. Sanjeeva Rao
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2. Personal Bio-data

a) Position/Designation : Scientist (Senior scale)
b) Joining date in ICAR : 23 January, 2012
c) Discipline and Specialization : Biochemistry-Plant Sciences (ARS)
d) Training/advance exposure in the area of work :

- Three months professional attachment training from 10-01-2013 to 16-04-2013 at National Institute of Nutrition, Hyderabad.
- Participated in a two days workshop on National Fund for Basic, Strategic and Frontier Application Research in Agriculture on 12th and 13th August, 2013.
- Participated in two days workshop on Micronutrient Analysis training for Wheat and Rice Biofortification at Department of Breeding and Genetics, Punjab Agricultural University, Ludhiana, from 26-27 August 2013.
- Twenty one days training programme on “Current Biochemical & Molecular Techniques for Nutritional Enhancement and Stress Tolerance in Crop Plants” from 1st November, 2012 to 21st November, 2012 at IARI, New Delhi.
- Attended 95th FOCARS training at NAARM, Hyderabad, from 23rd January, 2012 to 21st April, 2012.
- Participated in the “Training Programme on Principles and Applications of Bioinformatics in Biology” held during 14-15 November 2009 at Department of Marine Living Resources, Andhra University, Visakhapatnam under DBT – BIF Programme

- Participated in “21 day Refresher Course on Plant Biotechnology” conducted in Biotechnology Division, Andhra University, Visakhapatnam, during May, 2005. This was funded by APNLBP (Andhra Pradesh Netherland Biotechnology Programme).

e) Contribution to the scientific advancement :

(in about five bullets)

- Isolated and characterized 07 yeast strains from natural sources for ethanol fermentation studies. One promising isolate, *Saccharomyces cerevisiae* R3DSC5, was submitted to IMTECH, Chandigarh.
- Standardized paddy processing protocol for Fe and Zn estimation in ED-XRF. Since Dec 2012, this protocol is being used for AICRIP biofortification trial, various biofortification projects, national and international quality training programmes and several students submitted thesis (MSc or PhD). Also standardized XRF for the estimation of Fe and Zn in sorghum samples.
- Developed method for the estimation of starch components and protein contents in single rice kernel.
- Developed method for the quantification of chalky area in individual rice grains and also determined its relationship with starch components.
- Identified gaps in grain quality and nutrition analysis.

3. Future Planning of research (in bullets) :

- Molecular and phenotype studies on rice grain quality and nutrition analysis- starch metabolism and accumulation, glycemic index, bran oil, etc to obtain novel grain quality indicators.
- Molecular and phenotype studies on starch, lipids and protein in relation to various physiological stresses.

4. Publications (best five) :

- D. Sanjeeva Rao, Suneetha Kota, G. S. Varaprasad, M. M. Azam and V. Ravindra Babu. 2014. Optimization of cooking temperature and time in rice. *Progressive Research*. Vol.9. (Part-I) pp. 194-196.
- Sanjeeva Rao D., Mohan D.T., Girijashankar G., Prabhakar T., Venkateswara Rao Y. and Subba Rao M.V. 2014. Optimization of fermentation parameters for R3DSC5 and R3DPMP strains for ethanol production. *Int. J. Bioinformatics and Biological Sci.* 2(1&2), 71-83.
- D. Sanjeeva Rao, D. Subramanyam, K. Suneetha, M.M. Azam and V. Ravindra Babu. 2014. Different methods of amylose estimation and their comparison. *The Journal of Research, ANGRAU*, 42(3 & 4):53-59.
- D. Sanjeeva Rao, P. Madhu Babu, P. Swarnalatha, Suneetha Kota, V.P. Bhadana, G.S. Varaprasad, K. Surekha, C.N. Neeraja and V. Ravindra Babu. 2014. Assessment of grain zinc and iron variability in rice germplasm using Energy Dispersive X-ray Fluorescence Spectrophotometer (ED-XRF). *Journal of Rice Research*. 7: (1 & 2)45-52.

- Sanjeeva Rao Durbha, Surya Santosh Mohan Dev Tavva, Girijashankar Guntuku, Prabhakar Tadimalla, Venkateswara Rao Yechuri, Someswara Rao Nittala, Venkata Subba Rao Muktinutalapati. 2016. Ethanol production from the biomass of two marine algae, *Padina tetrastromatica* and *Sargassum vulgare*. *American Journal of Biomass and Bioenergy*, Vol. 5 No. 1 pp. 31-42. doi:10.7726/ajbb.2016.1003
- D. Sanjeeva Rao, C. N. Neeraja, R. Madhu Babu, B. Nirmala, K. Suman, L. V. Subba Rao, K. Surekha, R. Raghu, T. Longvah, R. Surendra, Rajesh Kumar, V. Ravindra Babu and S. R. Voleti. 2020. Zinc Biofortified Rice Varieties: Challenges, Possibilities, and Progress in India. *Original Research*. Vol.7. (Article-26) pp. 1-13.

5. Other relevant activities of Scientist :
(in bullets)

- AICRIP works
- Helping institute administration as member of committees
- As reviewer for scientific journals
- Guidance to MSc or PhD students