



## Invitation for Dr. NGP Rao Memorial Life time Achievement Award Ceremony and First Dr. NGP Rao Memorial Lecture



**Dr. NGP RAO**

**5<sup>th</sup> September, 2021 (Sunday)**

**Chairperson: Dr. Jacqueline Hughes, Director General, ICRISAT**

**Co-Chair: Dr. Tilak Raj Sharma, Deputy Director General (CS), ICAR, New Delhi**

**Chief Guest: Padma Bhushan Dr. Raj Paroda**

**Former Secretary, DARE and Director General, ICAR, and Chairman, TAAS New Delhi**

### **Virtual Programme**

11.00 – 11.05 AM	Welcome and About Society for Millets Research	Dr. Vilas A Tonapi Director, ICAR-IIMR & General Secretary, Society for Millets Research
11.05 – 11.10 AM	Initial Remarks by Chair and Co-Chair	Dr. Jacqueline Hughes Dr. Tilak Raj Sharma
11.10 – 11.15 AM	About Dr. NGP Rao	Dr. Vilas A Tonapi
11.15 – 11.20 AM	Introduction of the Speaker	Dr. M Elangovan
11.20 – 11.50 AM	Dr. NGP Rao Memorial Lecture on "FUTURE OF SORGHUM AND MILLETS"	Padma Bhushan Dr. Raj Paroda
11.50 – 12.00 PM	Dedication of IIMR crop work facility as "NGP RAO CROP IMPROVEMENT CENTRE" & Conferment of "Dr. NGP RAO MEMORIAL LIFE TIME ACHIEVEMENT AWARD" by Dr. Raj Paroda, Dr. Jacqueline Hughes, Dr. TR Sharma, Dr. Bhupen Dubey	
	<ul style="list-style-type: none"><li>• Sorghum - Dr Bhanwar Singh Rana</li><li>• Small millets - Dr Annada Seetharam</li><li>• Pearl millet - Dr Kedar Nath Rai</li></ul>	

12.00 – 12.10 PM	Awardees Remarks	<ul style="list-style-type: none"> <li>• Dr. Bhanwar Singh Rana</li> <li>• Dr. Annada Seetharam</li> <li>• Dr. Kedar Nath Rai</li> </ul>
12.10 – 12.25 PM	Remarks by Guests of Honour	<ul style="list-style-type: none"> <li>• Dr. Bhupen Dubey, CEO, Advanta</li> <li>• Dr. Rajendra Prasad, VC-UAS,</li> <li>• Dr. Aravind Kumar, DDG, ICRISAT</li> <li>• Dr. NH Rao, Trustee, NGP Rao Foundation</li> </ul>
12.25 – 12.40 PM	Chairperson and Co-Chair Remarks	<p>Dr. Jacqueline Hughes Dr. Tilak Raj Sharma</p>
12.40 – 12.45 PM	Vote of Thanks	Dr. K Hariprasanna K

Virtual **Zoom** Link:

<https://us02web.zoom.us/j/86179638025?pwd=TGsrZU5zdnpJV0F1WkUvcTIRQUF4QT09>

Meeting ID : 861 7963 8025    Passcode : millets



Society for Millets Research Cordially invites you For



Dr. NGP RAO

**Dr. NGP Rao Memorial Life time Achievement Award Ceremony**



Dr. BS RANA  
(Sorghum)



Dr. ANNADA SEETHARAM  
(Small millets)



Dr. KEDAR NATH RAI  
(Pearl millet)

**NGP Rao Memorial Lecture on**  
*"FUTURE OF SORGHUM AND MILLETS" by*



Padma Bhushan **Dr. RAJENDRA SINGH PARODA**  
Former Secretary, DARE & DG, ICAR and Chairman, TAAS, New Delhi

## ABOUT DR. NGP RAO



Dr. Neelamraju Ganga Prasada Rao (1927-2016), has been acclaimed as the 'Father of Hybrid Sorghum', for leading the green revolution in sorghum (jowar) in rainfed semi-arid regions of India. Dr. Rao graduated with B.Sc. (Ag.) degree in 1949 from Agricultural College, Bapatla with second rank; and Post Graduate Associate Programme in Botany at Indian Agricultural Research Institute (IARI), New Delhi, in 1953, with a first rank and gold medal. He received his Ph.D. in 1968 from Bihar University. He served as Research Assistant at the Department of Agriculture, Hyderabad (1950-58), and Lecturer in Agricultural Botany, Osmania University, Hyderabad (1958-60), before moving to IARI (1961-78) where he served as Sorghum Botanist and Associate Coordinator, and Project Coordinator of the All India Coordinated Sorghum Improvement Project (AICSIP).

As the National Coordinator of the All India Coordinated Sorghum Improvement Project, he led the visionary research that transformed traditional risk prone subsistence sorghums in India to significantly higher productive and stable hybrids and varieties. The first commercial sorghum hybrid (CSH-1) was released in 1964, the shortest period ever for commercial hybrids in plant breeding history. The average yields of the rainfed hybrids could be stabilized at about 2000-2500 kg/ha against the national average of only 400-500 kg for the local varieties. Maximum yields of up to 7000kg/ha could be realized under optimal conditions. Between 1965 and 1978, nine commercial sorghum hybrids (CSH 1 to CSH 9) and eight high yielding varieties (CSV 1 to CSV 8R) were released for cultivation with profound impacts in the dryland areas of the States of Maharashtra, Karnataka, Telangana, Tamil Nadu, Rajasthan, Madhya Pradesh, and Uttar Pradesh, covering an area of over 8-10, mha.

In 1978, Dr. Rao was selected as ICAR Professor of Eminence and served at IARI Regional Station, Hyderabad up to 1980. Later, from 1980 to 1983, he served as Regional Sorghum Breeder for West Africa in ICRSAT at Ahmedu Bello University, Samaru, Zaria, Nigeria. During 1984-87, Dr. Rao was the Vice Chancellor of Marathwada Agricultural University, Parbhani, Maharashtra; and during 1987-92 he was Chairman, Agricultural Scientists Recruitment Board, ICAR.

Dr. NGP Rao was conferred many awards and titles in the course of his distinguished career. These included the prestigious national awards: CSIR's Shanti Swarup Bhatnagar Prize for Biological Sciences, 1964, and ICAR's Rafi Ahmed Kidwai Prize for Plant Breeding, 1974-75; Distinguished Scientist Awards of Andhra Pradesh Government (2003, 2008); Farmer Organization awards: National Tonnage Club of Farmers (1970); Karshak samaj (1978); Industry awards: VASVIK award (1979); AISMAN award (1986); and awards by Scientific Societies, Academies, and Universities. He served as President of the Indian Society of Genetics and Plant Breeding (1981, 1982) and Founder President of the Society for Millets Research (2004). He was also elected to the Fellowship of three National Science Academies: INSA, NAS and NAAS.

## **DR. NGP RAO LIFE TIME ACHIEVEMENT AWARDEES** (Citation and Cash Award of Rs. 1 lakh each)

**Dr. Bhanwar Singh Rana:** Born in Navi Nagar, Muzaffarnagar, Uttar Pradesh, India on 5 July 1941, Dr. Bhanwar Singh Rana is a revered Plant Breeder with outstanding contributions in novel breeding concepts and developing number of sorghum Hybrids and Varieties which doubled the sorghum productivity in 1990's. He completed his M.Sc.(Ag) in 1963 and Ph.D. in 1972 from Agra University. His specialization in biometrics, quantitative genetics, multivariate analysis, Farmer Participatory Research, Energy Crops Development and computer programming greatly benefited Sorghum researchers. He also evaluated world Sorghum germplasm collection and developed seed catalogue of > 8000 entries before joining sorghum project in 1970. Later he worked as Head, IARI Regional Research Station, Hyderabad (1984-87). He also contributed as Plant Breeder/ Agronomist in FAO/UNDP programme in Kenya (1981-82). He had opportunities to serve Internationally as FAO Consultant-Plant Breeding and Seed Production specialist in Myanmar, and also as IFAD Consultant-Agriculture and Principal Investigator of ACIAR and DFID Projects. He developed number of concepts, explored genetics and selection criteria for Sorghum improvement. To maximize yield, he optimized plant type, type of crosses in hybrids, impact of male and female parents on hybrid yield, type of mating systems and their recombination patterns in segregating generation, yield prediction models, coheritability and genetic advance, enhancing heterosis levels, genetics of adaptability and stability. He used height gene interaction in dwarf x mid height male to develop tall dual purpose hybrid like CSH 13. He has contributed to the genetics of protein quality (high lysine content), genetics of Fertility Restoration and utilisation of A2 cytoplasm. His pioneering research work in Sorghum is published in 150 papers in National and International journals during his 33 years of research career in sorghum in ICAR. His efforts in designing production systems, enhancing host-plant resistance and alternate uses make him a most distinguished sorghum scientist in India. He has guided nine students for M.Sc. and seven Ph. D. students. He was instrumental in establishing sorghum breeding and agronomic research at Busia (Western Kenya), Centre for Rabi Sorghum at Solapur, Off-season facility at Warangal, Multi-crop seed R&D in a Private Sector Company and Crop Science centre for energy crops at NFCL, Hyderabad. He is recipient of prestigious ICAR-Vasant Rao Naik National Award (1995) in recognition of his outstanding contributions to improve the productivity of dry land agriculture. He is also the elected Fellow of the National Academy of Agricultural Sciences, New Delhi. Recognizing his yeoman contribution in improving Food and Nutrition Security in drylands through Sorghum improvement, the Society for Millets Research, ICAR-Indian Institute of Millets Research, Rajendranagar, Hyderabad takes pride in awarding Dr. NGP RAO MEMORIAL LIFE TIME ACHIEVEMENT AWARD to DR. BHANWAR SINGH RANA, on this day of 5<sup>th</sup> September 2021.

**Dr. Annada Seetharam:** Dr. Annada Seetharam, born on 3 June 1943 in Harohally, Kanakapura, Bengaluru, Karnataka, obtained his bachelor's degree in 1963 from Agricultural college Bengaluru; Master's degree in Agricultural Botany from College of Agriculture, Dharwad in 1965 and Ph.D from IARI., New Delhi in 1968. He has served at UAS, Bengaluru from 1970 to 1979, and later in ICAR from 1979-2003 as Associate Coordinator (Minor millets), and as Project Coordinator (Small millets) and Emeritus Scientist, ICAR, from 2003-05. He has made notable contributions as Plant Breeder in the crop improvement of Small Millets and Sunflower. He was intimately associated for more than two decades in Small Millets' research and development in the country. A number of improved varieties in various small millets were released under his leadership benefiting large rural, tribal and hill farming communities which were left out of the green revolution technology. His outstanding contribution was on assembling one of the largest collections of six small millets germplasm exceeding 11000 accessions for which he was the curator; evaluating and making them available especially the elite genetic stocks to researchers all over the country; thus contributing to the conservation and improvement of India's old and native crop plants of considerable nutritional value that are of great relevance to the disadvantaged sections of society. He is well known for his contribution in hybrid research in sunflower in the country and released the first hybrid "Sunflower BSH-I" and the most

popular open pollinated variety "MORDEN" at the National level. He has guided 22 Ph.D. and 20 M.Sc. students with distinction. He has authored/edited 15 books and monographs and published more than 250 papers in leading research journals. His contributions to the field of crop improvement and agriculture were recognised by conferring "R.D. Asana Endowment Award" by the ICAR for outstanding research in Plant Breeding for Triennium 1977-80; Om Prakash Bhasin Foundation Research Award in 1998, Distinguished Alumni Award, UAS, 2003; Dr. Harbhajan Singh Memorial Life Time Achievement Award, ISPGR, New Delhi 2005-06. He served as Chairman of International Small Millets Steering Committee from 1986-1993 and Leader of Technology Mission of Govt. of India on Food and Nutritional Security in Tribal and Hilly areas of the country from 1998-2003. He is the Elected Fellow of National Academy Of Agricultural Sciences, New Delhi; Honorary Fellow, Indian Society of Oilseeds Research, Hyderabad; Fellow, Indian Society of Genetics and Plant Breeding, New Delhi and Fellow, Indian Society of Plant Genetic Resources, New Delhi. Recognizing his yeoman contributions in improving Food and Nutrition Security across drylands through Small Millets improvement, the Society for Millets Research, ICAR-Indian Institute of Millets Research, Rajendranagar, Hyderabad takes pride in awarding Dr. NGP RAO MEMORIAL LIFE TIME ACHIEVEMENT AWARD to DR. ANNADA SEETHARAM, on this day of 5<sup>th</sup> September 2021.

**Dr. Kedar Nath Rai:** Kedar Nath Rai, born on 1 June 1946, is a former Group Leader of Pearl Millet Improvement in the Dryland Cereals Program at ICRISAT, Patancheru, Telangana, India. He received his Master's degree in Genetics from the Indian Agricultural Research Institute (IARI), New Delhi, and Ph.D. degree in Genetics from the University of California at Davis, USA. After a brief period as a rice breeder at Banaras Hindu University, Varanasi, he joined ICRISAT as a Pearl Millet breeder in 1977, and till his superannuation he contributed immensely for Pearl Millet improvement research at ICRISAT. During this long innings of about 36 years in Pearl Millet improvement research, Dr. Rai has made tremendous contributions for improving Pearl Millet productivity in India, and also contributed for better understanding of the genetics, adaptation and nutritional features of this crop, and its implications in genetic improvement. More than 60 pearl millet hybrids marketed in India at any given time are based on the female parents developed by him, or included as parentage of improved breeding lines of others, which had been shared with all hybrid breeding programs in India and worldwide. He has developed and disseminated more than 125 male-sterile lines and published more than 180 research articles and bulletins, including a classical book on PEARL MILLET BREEDING that he co-edited with other experienced millet breeders from India and the USA. He has been instrumental in developing a very strong partnership with ICAR-All India Coordinated Pearl Millet Improvement Project, and with private sector through Pearl Millet Hybrid Parents Research Consortium. More recently, he developed and strengthened crop biofortification research activities of HarvestPlus, ICAR and DBT. His biofortification research efforts have led to a much better understanding of genetics, variability, and hybrid development strategy with respect to high-iron pearl millet. As a result, a high-iron variety "Dhanashakti" was released in 2013, marking it the first biofortified crop cultivar in public domain released in India. He supervised the dissertation research of two Masters students and five Ph.D. students, two of them recognized with the Jawahar Lal Nehru Award of the ICAR for best Ph.D. theses in plant breeding. For all the above efforts and contributions, Dr. Rai has been recognized with various individual and team awards and honours, nationally and internationally. The most significant among these include CGIAR Chairman's Excellence in Science Award, CGIAR's King Baudouin Award, Doreen Margaret Mashler Award, Jannareddy Venkat Reddy Prize, Seed Association of India Award, and Chaudhary Devi Lal Outstanding AICRP Award of the ICAR. Recognizing these yeoman contributions in improving Food and Nutrition Security across drylands through Pearl Millet improvement, The Society for Millets Research, ICAR-Indian Institute of Millets Research, Rajendranagar, Hyderabad takes pride in awarding Dr. NGP RAO MEMORIAL LIFE TIME ACHIEVEMENT AWARD to DR. KEDAR NATH RAI, on this day of 5<sup>th</sup> September 2021.