



Dr. S.K. Chakrabarti

(b. March 5, 1958)

Dr. Swarup Kumar Chakrabarti was born on 5<sup>th</sup> March, 1958 at Gopinathpur, Paschim Medinipur, West Bengal. After his graduation in agriculture from Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal he moved to Indian Agricultural Research Institute, New Delhi and obtained his M.Sc. and Ph. D. degrees in Plant Pathology in the year 1983 and 1987, respectively. He also did post-doctoral research work at Waksman Institute, Rutgers, USA; CIRAD, France; and NRC on Plant Biotechnology, New Delhi. Dr. Chakrabarti started his career as Scientist (ARS) at ICAR-Central Potato Research Institute, Shimla in the year 1986 and continued in that position till 1991; as Scientist (Sr. Scale) till 1998; and Senior Scientist from 1998 to 2006. He was selected as Principal Scientist (Plant Biotechnology) at ICAR-CPRI, Shimla in the year 2006 and became Head, Division of Plant Protection of the same institute in 2009. He joined as Director of ICAR-Central Tuber Crops Research Institute, Thiruvananthapuram, Kerala in April, 2012 and continued in that position till 26th January, 2016. He then joined as Director of ICAR-Central Potato Research Institute in January, 2016 and continued till his superannuation in 2020. Besides, Dr. Chakrabarti was also the Project Coordinator (Actg.) of All India Coordinated Research Project on Potato running in 25 different centres spread all across India. He is the Fellow of National Academy of Agricultural Sciences, New Delhi; Indian Phytopathological Society, New Delhi; Indian Potato Association, Shimla and Confederation of Horticultural Associations of India, New Delhi. He is the recipient of Hari Om Ashram Trust Award of ICAR for the biennium 2016- 17, Shri L.C. Sikka Endowment Award of NAAS, Dr. S. Ramanujam Award of ICAR-CPRI, IPA-Kaushalaya Sikka Memorial Award (twice), Biotechnology Overseas Associateship of DBT, Biotechnology National Associateship of DBT, Prof. JP Verma Memorial Lecture Award of Indian Phytopathological Society, and Recognition Award for potato genome sequencing by ICAR-CPRI, Shimla. He has been nominated as Adjunct Faculty of Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal. He also served as a Member, Sectional Committee on Horticulture Sciences of National Academy of Agricultural Sciences (NAAS), New Delhi during 2018-20; Expert Member of the Academic Council of Tamil Nadu Agricultural University, Coimbatore from 2013-16, Member, Institute Management Committee, of NRC on Mushroom, Solan during 2005-08, Member, Institute Management Committee, of Indian Institute of Vegetable Research, Varanasi during 2004-07, Member Secretary, Institute Biosafety Committee of ICAR-Central Potato Research Institute, Shimla during 2005-09, Member Secretary, Institute Animal Ethics Committee of ICAR-Central Potato Research Institute, Shimla during 2009-12. He was the President of Indian Potato Association (IPA) during 2016-20; Zonal President of Indian Phytopathological Society for the year 2013-14; Secretary of IPA during 2008-09; Joint Secretary of IPA during 1998-2001; Councilor, South Asia of International Society for Tropical Root Crops, UK during 2013-16; and Councilor of International Society for Plant Pathology, USA during 2010-15. He took lead role in organization of International Conference on “Tropical root and tubers for sustainable livelihood under changing agro-climate” in the year 2013 and Global Potato Conclave in the year 2020 as Organizing Secretary. He was the Principal Investigator of three international projects, i.e. (i) USAID funded project “Engineering late blight resistance in susceptible commercial potato cultivars”, (ii) Potato Genome Sequencing Consortium consisting of 26 laboratories from 14 countries, and (iii) Indo-European networking project “PotBio: generating biomarkers for breeding healthy potatoes”.

He also facilitated the Indo-Swiss Collaboration on Biotechnology (ISCB) project “IndoSwiss Cassava Network” as Director of ICAR-CTCRI, Thiruvananthapuram. He was the Principal Investigator/Co-PI of several externally funded projects, like DBT sponsored project on “Smart Agriculture: Farmer Zone”, ICAR Network project on molecular breeding, ICAR network project on transgenics in crops etc. Dr. Chakrabarti took a pioneering role in application of biotechnology for need-based potato improvement at ICAR-CPRI, Shimla. He was the Country Leader of the Potato Genome Sequencing Consortium (PGSC) consisting of 26 international institutes belonging to 14 countries, who deciphered the 727 Mb long potato genome in the year 2011. Availability of potato genome sequence enabled scientists of ICAR-CPRI to take up meaningful functional genomics work on agronomically important traits like tuberization, nutrient use efficiency, dry matter content, heat/drought tolerance, and late blight durable resistance. His group also deciphered the genomes of *Fusarium sambucinum* Fckl. F-4., *Rhizoctonia solani* Anastomosis Group 3, phylotype I, II, IV of *Ralstonia solanacearum*, mitogenome of *Phytophthora infestans* A2 mating type, potato leaf roll virus, and Tomato leaf curl New Delhi virus-[potato]. Besides, genomes of wild potato species *Solanum pinnatisectum*, dihaploid of *Solanum tuberosum*, Indian strain of *Phytophthora infestans*, aphid species *Aulacorthum solani*, Indian strain of cyst nematode *Globodera rostochiensis* have been sequenced by his group. He also initiated functional genomics studies for better understanding of biotic and abiotic stress tolerance in potato. He facilitated development of effective transgenic potato with durable resistance to potato late blight, potato apical virus disease, potato tuber moth and with enhanced protein quantity and quality in potato. He also led extensive research on application of molecular markers for diversity analysis, fingerprinting of cultivars, QTL mapping, marker assisted selection etc. The marker for PVY extreme resistance validated by his team was used to develop a unique parental line with the desired *Ryadg* gene in triplex state. The DNA fingerprints of potato cultivars developed under his leadership are regularly being used for identification of doubtful samples as well as genetic fidelity testing of tissue culture materials. He also initiated molecular diagnostic work of potato pathogens in the institute. The diagnostic protocols standardized under his leadership enhanced the capability of the institute to intercept and detect a large number of pests and pathogens of potato enabling it to issue phytosanitary certificates. It also facilitated recognition of the institute as the ‘Accredited Test Laboratory’ by Department of Biotechnology, Government of India for testing and certification of tissue culture raised potato microplants and minitubers under NCS-TCP scheme. Dr. Chakrabarti also contributed in development of 12 potato varieties such as Kufri Lima, Kufri Ganga, Kufri Neelkanth, Kufri Sahyadri, Kufri Karan, Kufri FryoM, Kufri Kesar, Kufri Sukhyati etc.; development of 3 unique germplasm that have been registered with NBPGR; and 4 patents, i.e. “RNAi based pesticide composition” (Appl. No. 201811003339), “A composition for managing potato cyst nematode infestation” (Appl. No. 201811008478), “Aeroponic nutrient solution, and applications thereof” (Appl. No. 201911011277), and “Recombinant constructs for controlling gene expression and implementations thereof” (Appl. No. 201911041086). He published more than 300 research articles; guided 6 Ph. D. students and visited several countries including Australia, Austria, Bangladesh, China, Indonesia, France, The Netherlands, New Zealand, Philippines, Singapore, UK, and USA.