

Brief bio-data of Dr. P. N. Sivalingam,

Characterized begomoviruses causing leaf curl disease in tomato in India, discovered recombinant begomovirus, *Tomato leaf curl Rajasthan virus*. The role of betasatellite molecule associated with a bipartite begomovirus, *Tomato leaf curl New Delhi virus* in pathogenesis for the first time in the world. Identified diverse betasatellite molecules associated with tomato leaf curl disease (TomLCD) in India and identified betasatellite originating from northern parts of India are more diverse than the betasatellite from central and southern parts of India. These findings have been utilized for the deployment of resistance genes to manage TomLCD in India. Developed diagnostic probes to differentiate species and strains of begomoviruses infecting tomato, chilli, potato, mungbean, cowpea and cotton in India. Developed two new techniques; Dilution End Point-PCR and agroinoculation to measure virulence of viruses and resistance of the host. Identified alternative hosts to the begomoviruses infecting tomato and cotton. Characterized new virus species; Croton yellow vein mosaic virus. *Citrullus colocynthis*, native to Thar Desert, identified as genetic resource in developing viral resistance in watermelon against *Poty*-, *Tospo*- and *Cucumo*-viruses. *Ziziphus nummularia*-Jaisalmer genotype found highest tolerance to drought, 43,766 unique transcripts and genes, and tolerance mechanisms identified during drought. Characterized germplasm lines of arid horticulture crops *Prosopis cineraria*, *Cordia myxa*, *Z. mauritiana*, *Citrullus* species by biological and molecular markers. Developed molecular markers specific to *khejri* variety Thar Shoba for its protection and F₁ hybrids of *C. lanatus* and *C. colocynthis* for Marker Assisted Selection. Identified 72 Plant Growth Promoting Rhizobacteria (PGPR) from hot arid region of India for growth promotion and disease suppression in the arid horticultural crops. Developed tissue culture protocol for date palm cv Halawy & Khuneizi for its multiplication.

For the above contributions, he has been awarded several awards, important are Gold Medal and Best Student of the Year 2006 award from ICAR-IARI, Jawaharlal Nehru Award for Post-Graduate Agricultural Research 2007 from ICAR, Prof. M.J. Narsimhan Academic and Merit Award from Indian Phytopathology, NASI-Young Scientist Platinum Jubilee Award (2010) for Biological Sciences from National Academy of Sciences, India. He has published more than 30 research papers having NAAS impact factor of more than 6, edited two books are the notable contributions.

Presently at ICAR-NIBSM, he is working on characterizing begomoviruses infecting pulses and vegetable crops in Chhattisgarh, developing agro-infectious clones of begomoviruses affecting economically important crops, identifying mechanisms of host susceptibility factors contributing for the infection and non-host resistance factors to these begomoviruses and identifying stress induced promoters involving in resistance to fungal, bacterial and virus infection in crop plants.