A Tribute to Prof. Kameshwar S. Bhargava: An Indian Plant Virologist (1918–2010)

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Received: 16 January 2012/Revised: 6 March 2012/Accepted: 23 March 2012
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Prof. Kameshwar Sahai Bhargava was born in Rewari, Haryana in the family of Shri Janki Prasad Bhargava and Smt. Gayatri Devi. Both father and mother were highly religious, strict disciplinarians and much respected selfless social workers of the area. This influenced the childhood and formative years of Prof. Bhargava. His early education was at Rewari and St. Stephen's College, New Delhi. There after he joined University of Allahabad and graduated in 1937, earned M.Sc. (Botany) in 1939 and D.Phil. (Botany) in 1943. Prof. Bhargava was all through a meritorious student. He was awarded Empress Victoria Readership in 1940 for doing research work at University of Allahabad; S. A. Hill Memorial Award for best research work in the

Faculty of Science and E. G. Hill Memorial Award for best research work in the University. After serving for brief period at the University of Allahabad and Birla College, Pilani, Prof. Bhargava proceeded to England in 1945 on Central Government Overseas Scholarship, where he worked on properties of four strains of *Cucumber mosaic virus* and earned Ph.D. degree of the University of London in 1948. Thereafter he returned to India and served at the University of Allahabad, Banaras Hindu University and as Professor of Botany and Vice Principal at DSB Govt. College, Nainital. In 1958, University of Gorakhpur invited him as founder Professor and Head, Department of Botany. There he laid strong foundation of the Dept. of Botany and developed premier center of research in Plant Virology. Prof. Bhargava served this University till 1983 at positions of Dean, Faculty of Science; Dean, Faculty of Agriculture; Director, College Development Council; Pro Vice Chancellor and Vice Chancellor. He guided several Ph.D. students and published more than 150 research papers. He was a widely traveled person. His pioneer works on temperate fruits, ornamentals, vegetables and sugarcane were widely acknowledged. Prof. Bhargava strived hard to strengthen teaching program in Virology in India. In recognition of his meritorious services, he was elected Fellow of Indian National Science Academy, National Academy of Science, India, and National Academy of Agricultural Sciences, India. He was also Fellow of Indian Botanical Society, Indian Phytopathological Society and Indian Virological Society. Prof. Bhargava was elected President of Indian Botanical Society, Indian Phytopathological Society and Indian Virological Society. He served on various national and international committees. In his honor Indian Virological Society instituted "Prof. Kameshwar Sahai Bhargava Award" in 2007 which is annually presented to an outstanding scientist in the field of Virology. In his honor

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University of Gorakhpur has also instituted in 2012 “Prof. K. S. Bhargava Memorial Lecture” which will be delivered each year by an eminent scientist.

After establishing research work in Plant Virology in India, Prof. Bhargava for the first time studied and identified three virus diseases of temperate fruits viz. plum line pattern on plums, mosaic diseases on peach and mosaic disease on apple and identified four viral diseases on ornamentals viz. mosaic diseases of *Mirabilis*, petunias, garden nasturtium and rose in the country. Further to this he concentrated on virus diseases of cucurbits and reported *Watermelon mosaic virus* and *Cucumber mosaic virus*. In addition to cucurbits he identified mosaic and ring spot viral diseases on papaya and mosaic disease on tree tomato (*Cyphomandra betacea*) and Bermuda grass (*Cynodon dactylon*). He for the first time used sugar cane differentials in India and identified five strains of *Sugarcane mosaic virus*. Prof. Bhargava also for the first time reported association of mycoplasma like bodies (phytoplasma) with grassy shoot diseases of sugar cane. In epidemiological

studies, he reported perpetuation of *Watermelon mosaic virus* disease and *Sugarcane mosaic virus* disease in nature. He used various novel methods for the management of viral diseases which included antiviral activity of botanicals including pteridophytes, oil spray and inhibitory property of milk. He partially identified virus inhibitor from the leaf extract of fern (*Ampelopteris proliferata*). With his long experience of teaching and research in Plant Virology he helped to strengthen science of Plant Virology in particular and science of Virology in general in India.

After the demise of his wife Smt. Shakuntala Devi he moved to USA and lived with his son Shri Bharat Bhargava. Till to the last day he was very active in academics. Prof. Bhargava is survived by his son and daughter-in-law, two daughters and son-in-laws, and grand and great grand children. He will be fondly remembered as a committed scientist and teacher, a strict disciplinarian, an able administrator, for simplicity, punctuality, easy accessibility and qualities of head and heart. He has left behind a rich legacy of intellectual thought, inquiry and study.