

R. N. Tandon – An obituary

Ram Narayan Tandon was born in November 1903 in his ancestral town in Shikohabad (then in Dist. Mainpuri), UP. He received all his education at Allahabad. His interest in Botany began very early when he came under the influence of W. Dudgeon at the Ewing Christian College. He joined the Allahabad University in 1923 and obtained the B Sc (1925) and M Sc (1927) degrees. He stood first in the University in M Sc and joined the faculty as a Demonstrator immediately after.

His interest in mycology and plant pathology was stimulated by J. H. Mitter. In 1937 he joined the Imperial College of Science, London to work with William Brown. He returned in 1939 after obtaining DIC and Ph D. He progressively rose to be the Professor and Head of the Department of Botany from which position he retired in 1965.

Starting his researches on fungal taxonomy in 1927, he systematically studied the flora of different regions of the country. An exhaustive list of fungi found in plains and hilly regions of Uttar Pradesh and neighbouring states was prepared. More than 60 new fungal reports were made from India during 1928–1980. Many of these were new taxa.

Studies on fungal diseases, especially those responsible for causing damage to crop plants and fruit trees, yielded interesting results. The emphasis of his work was on the post-harvest diseases. The effects of many physical and environmental factors responsible for rapid deterioration of fruits and vegetables under different field and storage conditions were evaluated and control measures were suggested. Extensive studies on the storage diseases of a number of important fruits like mango, banana, guava, apple, pear, litchi, papaya, tomato, sapota, etc. were conducted and the role of different plant pathogens responsible for spoilage was assessed. The nature and potentiality of different cell wall degrading enzymes, with special reference to cellulolytic and pectolytic enzymes, were examined. Detailed studies on the extracellular enzymes

secreted by the species of *Fusarium*, *Alternaria*, *Helminthosporium*, *Curvularia* and *Pestalotiopsis* were undertaken.

Studies relating to fungal physiology and nutrition were conducted on different strains and species of about 45 pathogenic genera of fungi responsible for storage diseases of fruits and vegetables and the leaf spot diseases. These studies not only helped in giving a better understanding of the life processes of the organisms, but also established that it was not proper to accept various



types of classifications based only on nutritional studies of fungi. Loss of fertility of fungal cultures was studied and it was found that different isolates and even different ascospores of the same ascus differ in fertility and the subsequent behaviour depended on the inoculum taken during subculturing. The role of synthetic transient oligosaccharides in carbohydrate metabolism in fungi was examined. It was found that the synthesis of such oligosaccharides *in vivo* was of great advantage to the pathogen in the conservation and proper utilization of the carbohydrates present in the host tissues.

Post-infection changes brought about in fruits and vegetables under pathogenesis were examined. It was found that the pathogens not only modified greatly the organic acid contents of their respective hosts but also brought about drastic changes in carbohydrates of host

tissues, thereby setting in the rot. The infection induced rapid decline in ascorbic acid contents of different fruits like guava, mango, papaya, bittergourd, chilli, etc. resulting in lowering of their food value. Control measures against a number of diseases was recommended.

He published more than 250 papers in well-known Indian and foreign journals. Nearly two dozen students obtained their Ph D under his guidance and many of them rose to occupy important positions in various universities and research institutes.

Tandon was a dedicated teacher, much loved by his pupils who showered their love and affection to him throughout his life. This in spite of the fact that he was known to be a strict disciplinarian. He attributed this trait to the influence of his own teachers like J. C. Powell-Price and R. S. Weir, whom he held in great admiration. He was uncompromising in his principles and always willing to serve the cause of the University in whatever duties he was assigned. He was the President of the Athletic Association, Principal of the IAS Training School, Chairman of the delegacy and member of the Executive Council.

He was a Fellow of the Indian Academy of Sciences, Indian National Science Academy, Indian Academy of Agricultural Services, Phytopathology Society of India, Botanical Society of India, Mycology Society of India. He was the President of the Botany section of the Indian Science Congress Association. His association with the National Academy of Sciences started soon after it was established. He was elected its Fellow in 1941 and served it in various capacities as General Secretary, Foreign Secretary, Treasurer, Vice President and President.

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