V. Santhanam (1925–2019)

Among the scientists who have made noteworthy contributions to cotton yield improvement through Mendelian breeding, late Dr V. Santhanam was unquestionably first among the equals. I first met Santhanam in 1959 while doing my Master's degree in Genetics and Plant Breeding at the Madras Agriculture College and Post-graduate Institute, Coimbatore, where he was Reader. The faculty of the Post-graduate Institute including Santhanam held me in inexplicable kindness and affection, probably because I was the youngest and my father was a class/batchmate of several of them.

Santhanam would arrive riding on his bicycle punctually at 8 a.m. at the post-graduate block. He would wish the field staff and research scholars with a smile. This smile was a cover for his deep-seated seriousness. After settling down at his table and signing a few papers, he would go to the field and spend most of the forenoons. He was totally a field-oriented researcher and that probably was the reason for his remarkable achievement in developing high-yielding, disease-resistant and short-term varieties of cotton. The field experience that Santhanam had gained was immense and it equipped him with such an insight into the genetic architecture of cotton that no textbooks or research papers of that time had revealed. The saying that an ounce of practical experience is far more useful than a ton of theoretical knowledge.

Santhanam had received all his academic degrees, viz. B Sc Ag; M Sc Ag and Ph D from the Madras Agricultural College, then affiliated to the University of Madras. He obtained M Sc and Ph D degrees by research on genetic improvement of cotton varieties. Between 1946 when he obtained the B Sc Agriculture degree and 1957 when he had obtained the Ph D degree, Santhanam had devoted nearly a dozen years in gaining deep insight into the genetic architecture of cotton species and varieties, and how the useful genes could be recombined for improving the yield and incorporating several desirable traits such as short duration, disease resistance, etc.

Santhanam interacted with research scholars working in crops far different from cotton, and also in varied aspects such as cytogenetics, male sterility in sorgum, etc. Despite being a senior, Santhanam would visit all the junior faculty and interact with them whenever he had free time. On one such occasion, when I was showing some microscopic slides to my supervisor, Santhanam walked in and wanted to know what was being observed under the microscope. I told him they were the chromosomes of groundnut (*Arachis* hypogaea), brightly stained with feulgen. He then looked at the chromosomes and remarked smilingly that studying whole plants was better than just parts of them. He also complimented me for choosing a tough crop to deal with. He obviously meant that emasculation and pollination in a crop that spreads/crawls on the ground is a daily physical endurance test.

With the appointment of Santhanam in 1960 as Head of a project for the intensification of regional research on cotton, oilseeds and millets (PIRRCOM) – under the Indian Council of Agricultural Research (ICAR), New Delhi, he quit the post of Reader at the Post-graduate Institute. His responsibilities of crop improvement were extended to millets and oilseeds, in addition to the fibre crop. Santhanam became quickly adapted to the breeding requirements of sorgum and oilseeds. He played a significant role in developing hybrid sorgum which registered dramatic yield improvement. He also deviced breeding strategies for several of the self-pollinated oilseeds. By 1961, I had left Coimbatore for doing my Ph D at the Indian Agricultural Research Institute, New Delhi. With this my personal contact with Santhanam and other faculty at the Post-graduate Institute, Coimbatore came to an abrupt end. However, through his publications I kept following Santhanam's accomplishments.

Santhanam is known for having introduced the concept of ideal plant type for increasing productivity and early maturity in Indian cotton breeding programme. He is also known for developing Indian long staple cotton varieties. Impressed with his successes, the UNDP entrusted Santhanam with the task of studying the agronomic practices for improving cotton production in Myanmar. He rose up to the expectation by achieving 50% increase in cotton production between 1975 and 1982. The Director General of UN FAO commended Santhanam's outstanding contribution for dramatic increase in the production of cotton in Myanmar and placed on record his deep appreciation. His service to FAO as a long-time resident expert and Project Team Leader (1975–1983) in Myanmar and then as Senior Advisor in Myanmar and Vietnam during 1984–1987 reveals how much Santhanam had been sought after for crop improvement in developing countries. The Government had also deputed him to erstwhile USSR and Egypt for studying cotton development programmes in those countries.

Despite the fact that Santhanam was more a field-oriented researcher (which does not provide scope for publishing a large number of papers), he has published many significant papers mostly based on his research on cotton. In 1974, he was elected Fellow of the Indian Academy of Sciences (FASc), Bengaluru due to his noteworthy scientific publications. His contributions to cotton improvement were recognized with the Rafi Ahmed Kidwai Memorial Prize by ICAR in 1967, FASc, Bengaluru in 1974, Fellowship of the Indian Society for Cotton Improvement, Mumbai in 2002, Life Time Achievement Award from the University of Agricultural Sciences, Dharwad in 2004, and Life Time Achievement Award from Cotton Development and Research Association, Haryana in 2005.

Santhanam was born on 31 July 1925 at Tiruvarur in Tamil Nadu to T. S. Vaidyanathaswamy and Meenakshi Ammal. He was married to Rajammal and the couple were blessed with two sons and two daughters. He expired on 5 June 2019.

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