

## SIGNIFICANT CONTRIBUTIONS OF LATE RAO BAHADUR DR. RAM DHAN SINGH (1891-1977)—AN OUTSTANDING PLANT BREEDER

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Late Rao Bahadur Dr. Ram Dhan Singh made great impact on agriculture in the Indian Sub-continent through development of improved varieties of wheat, rice, barley and pulses. The major achievements in cereals production and productivity during green revolution period in the states of Haryana and Punjab owe to the strong foundation of crop improvement programmes laid down by late Rao Bahadur Dr. Ram Dhan Singh. He was born on May 1st, 1891 in a peasant family of village Kilo, Distt. Rohtak (Haryana). He joined the Punjab Agricultural College, Lyallpur in 1909 with its first batch of students was awarded a Diploma of Licentiate in Agriculture (L. Ag.) in 1912. He worked with Sir Albert Howard at the Imperial Agricultural Research Institute, Pusa, Bihar from 1914 to 1919. Simultaneously he completed his Bachelor of Science Degree in 1919 from Patna University. Thereafter, he proceeded to Cambridge University, UK and obtained his M. A. degree in Natural Sciences (Tripos) and Diploma in Agriculture.

After returning from Cambridge University, he joined Punjab Govt. Service in 1925 as Fodder Specialist. But within a year in 1926 he shifted to the prestigious position of cerealist which he retained till his retirement in 1947 even when he got the coveted position of Principal, Agril. College and Research Institute, Lyallpur (now in Faisalabad in Pakistan in 1946).

Dr. Ram Dhan Singh developed and released the famous Punjab wheat varieties C-518 and C-591 for general cultivation during 1933-34. These varieties were famous for their wide adaptation, yield and disease resistance. These wheats were cultivated not only in the pre-independence United Punjab, North West Frontier Province, Sind and United Provinces (now U. P.), Central Provinces, Rajasthan and Gujarat but beyond the International Boundaries also in Canada and Mexico, Brazil, Soviet Union and other countries. The cultivar C-591, on account of its pearly and attractive rounded amber colour kernels with excellent chapatti making qualities, fetched a premium over other wheat varieties of those times. This variety was the most popular wheat of Punjab. It commanded about 80 per cent of the total area under wheat in Punjab and was also grown extensively in Uttar Pradesh, Northern Rajasthan and Madhya Pradesh. C-591 was the greatest success, within so short period of its release in 1934, it had eclipsed all the

old and the newer improved varieties and continued to occupy the largest area under single variety till 1965. Subsequently, he also developed wheat varieties through hybridization, namely, C-228 (1940), C-217 (1944), C-250 (1944), C-253 (1948), C-281 (1955), C-273 (1957), and C-285 (1960). It is surprisingly heartening to note that four varieties C-253, C-273, C-281 and C-285 were released by him even after his retirement. The famous **desi** wheat C-306 was also selected from the parents/populations developed by Late Rao Bahadur Dr. Ram Dhan Singh. WH 147 also resulted from crosses involving some of strains developed by him. Dr. Ram Dhan Singh was also involved in the development of the rice and pulses varieties; Basmati 370, Jhona 349, Mushkan 7 and Mushkan 41 and Palman Suffaid 246 for plain areas and Lal Nakanda 41, Ram Jawain 100 and Phool Pattas 72 for hilly areas. Among these varieties, Basmati-370 deserves special mention because of its superfine grain quality and fragrance, most prized rice grain in the world even today. Moong No. 54 and 305, mash No. 48 and barley T 4, T 5, C 138, C 141 and C 155 were outcome of his dedicated research work.

Under him, for the first time in India, a Modern Milling and Baking Laboratory was also started for testing the milling and baking quality of wheat varieties. This was probably the first laboratory of its kind in the whole of Asia. In 1934, he developed a rotary screen for complete elimination of weed seeds from wheat seed, which became common on the farms of the Department of Agriculture in pre-partition Punjab.

For his outstanding work on development of superior wheat varieties, Dr. Ram Dhan Singh was awarded the much coveted Sir Maynard Ganga Ram Prize and the title of Rao Bahadur on 2<sup>nd</sup> June, 1943. The recognition by Pakistan Government in 1961 of Dr. Ram Dhan Singh, an Indian Citizen, by presenting a gold medal at a special function held at Lyallpur, was a significant event. The Old Boy's Association of the Punjab Agricultural University, Ludhiana, awarded him Role of Honour in 1964. In recognition of his services as the most illustrious wheat breeder of India, the Punjab Agricultural University conferred on him the degree of Doctor of Science (Honoris Causa) at a special convocation held on 23<sup>rd</sup> Feb. 1970 and honoured him by naming its Plant Breeding Laboratory, at the Ludhiana Campus, after him.

Dr. Ram Dhan Singh had been a member of a good number of Agricultural Research and Development Committees. He had been a member of the Board of Management of Haryana Agricultural University, Hisar in Feb. 1971. A new Junior Faculty House of HAU has been named as Ram Dhan Singh House after him. Another distinction was bestowed upon him by Haryana Agricultural University, Hisar in the form of honoris causa degree of D. Sc. on 7 April 1973 at a special function in recognition of his work for uplifting the economy of the rural people of the state. In his honour a Gold Medal for Meritorious students of M. Sc. (Plant Breeding) is also awarded annually. A new 4000 acre farm of CCSHAU, Hisar has been named as RDS Seed Farm. The 4<sup>th</sup> Convention of the Association of All India Agricultural Universities was held on 7<sup>th</sup> April, 1973 at HAU, Hisar. On this very day the Third Annual Convocation of HAU was also held with great fanfare in the Hall of Giri Centre. At that time the university honoured three eminent scientists of India i. e. Dr. Ram Dhan Singh, Dr. B. P. Pal and Dr. M. S. Swaminathan. The Chief Guest, on the occasion, was Sh. Fakhruddin Ali Ahmed Union Minister for Food and Agriculture.

Dr. Ram Dhan Singh was known not only as plant breeder by his students and colleagues, but also as a practical field worker having a peculiar communion with plants. He had been a great educationist, writer and philanthropist. He was a fellow of Punjab Agril. University for four years during sixties when he earned special recognition from the then Vice-Chancellor by making very valuable contributions as a member of the Regulations Committee, for the framing of rules and regulations of the Punjab Agril. University. He was President of the Governing bodies of a number of Rohtak Educational Institutions for eight years.

Dr. Ram Dhan Singh has contributed numerous articles of scientific and popular interest on agricultural subjects to the press, both in English and Vernacular languages. Dr. Borlaug, Nobel Laureate, made a special call on Dr. Ram Dhan Singh at Sonapat in 1963, to pay his compliments. Later, in a letter to Dr. Ram Dhan Singh from Mexico, he wrote: "I recall the honour of meeting you at I. A. R. I. in 1963. Prior to that I had known you only through the excellent wheat varieties which you had produced, originally for the Punjab, but which subsequently were grown extensively throughout the Indian sub-continent as well as in many other countries". During interaction of Dr. Ram Dhan Singh with Dr. Borlaug in March 1971 in wheat research area at field of HAU, Hisar, Dr. Borlaug enquired about reason of great success of wheat varieties developed by him, he pointed out that repeated testing of genotypes at multilocations gave him desired results in terms of yield and stability. Borlaug supported his idea.

He trained a number of Wheat Breeders like Dr.

S. M. Sikka, Dr. L. S. Negi, Dr. K. S. Gill, Dr. Gurcharan Singh and Shri Dhani Ram Vasudeva. The contributions of his trainees are well known and all these scientists did pioneer work in wheat improvement during their life time.

Rao Bahadur Dr. Ram Dhan Singh, illustrious son of India, left for his heavenly abode on April 17, 1977 after doing his hard, dedicated and selfless service to agricultural sciences and farmers of India.

In the memory of late Dr. Ram Dhan Singh a series of lectures have been started by CCSHAU, Hisar and Directorate of Wheat Research (now IIWBR), Karnal. The first lecture was delivered by Dr. M. V. Rao, Ex. Project Director Wheat and the Vice-Chancellor of APAU, Hyderabad during birth centenary celebrations of late Dr. Ram Dhan Singh in August 1994 at PAU, Ludhiana. The second lecture was delivered by Dr. Raja Ram, Director, CIMMYT, Mexico during International Group Meeting on "Wheat Needs Beyond Year 2000" held at Directorate of Wheat Research, Karnal in August 1997.

CCS Haryana Agricultural University, Hisar also started a series of lectures by eminent scientists to commemorate the memory of Dr. Ram Dhan Singh. The first lecture was delivered by Dr. R. S. Paroda (Padam Bhusan) then Director General, ICAR and Secretary, DARE, Govt. of India, on Sept. 7, 1996. The proposal for creation of a Trust in the memory of late Dr. Ram Dhan Singh was mooted on this occasion. Consequently, the Trust was established with its objectives of development and transmission of functional technologies to the farmers fields.

A farmer's field day was held at his native village Kilo in Rohtak district on March 6, 2000, wherein a large number of farmers participated. They were acquainted with the latest crop production technologies by a group of scientists from CCSHAU, Hisar. The Hon'ble Chief Minister of Haryana, Ch. Bhupinder Singh Hooda also unveiled the statue of Dr. Ram Dhan Singh on January 30, 2007 in the Dr. Ram Dhan Singh Sport Stadium at village Kilo in Rohtak. Another farmer's field day was also held at village Kilo on March 17, 2012. Dr. K. S. Khokhar presided over the function and called upon farmers to follow the new technologies to have high production of various crops, fruits and vegetable. He also honoured the progressive farmers.

A chair in his memory has also been established by Board of Management, CCSHAU, Hisar in the Department of Genetics & Plant Breeding, CCSHAU, Hisar in its meeting held on 12 December 2012 and university budget was allocated during 2015-16.

Dr. Ram Dhan Singh will continue to be a great source of inspiration for hard, dedicated and selfless services to the cause of plant breeding in general and wheat breeding in particular and to the scientists, students and farmers of the country.