

MATERIAL FOR THE ADDRESS OF DR. B.P. PAL
ON 27-5-1967.

Today is a important landmark in the history of our crop improvement work since it symbolises the very important development in the genetic improvement of yield potential of two of our major crops wheat and maize. I am very happy that this function is being held on a day which is associated with the memory of our late Prime Minister, Shri Jawahar Lal Nehru, who was a source of a great inspiration and encouragement to scientists in India. He recognised that it is only through the application of science and technology that we will be able to increase agricultural and industrial production and thereby create conditions of economic well-being. Towards the end of his life he was particularly concerned about the slow pace of progress in crop improvement work and this is reflected by an oft quoted saying " Every thing can wait but agriculture cannot". We are very happy that on this occasion we have with us the Hon'ble Minister for Food & Agriculture, who from the very date of assuming his onerous port-folio has made it abundantly clear that only the application of scientific know-how can help us to transform our agriculture. Getting more data of irrigated lands as well as barani areas will all depend upon the extent to which science and technology are brought into agricultural scene. I am also happy that Shri V.K. Malhotra, Chief Executive Councillor, Delhi State is with us today since his presence is a symbol of his great desire to make Delhi an ideal city from the point of view of scientific agriculture. Being the Capital city Delhi attracts

people of various walks of life from all over the country as well as from all other nations in the world. Delhi, therefore, has an unique role to play in the dissemination of knowledge and information on the new agricultural technology. Delhi has ideal farms and highest level of per acre production. Not only ^{the} farmers of Delhi will benefit but also the farmers of other parts of the country to whom knowledge can be transmitted by the visitors. The Indian Agricultural Research Institute has been intimately associated with the development of agriculture in the Khanjawala Block of Delhi State from 1950 onwards. Two years ago it was decided that the Institute should be intimately associated with the scientific and planning aspects of Delhi's agricultural development programme. I am happy that this association is proving to be of immense benefit both to the farmers of the Delhi State as well as to the scientists of the Institute. The establishment of a feed-back relationship between the farmers and the scientists is very important for the growth of dynamic and effective research programme. Shri Malhotra has recently mentioned that he would like the I.A.R.I. to be even more closely associated with the agricultural development of the Delhi State and I am sure the staff of the Institute would welcome more challenges of this kind.

Wheat improvement work ~~has been~~ from the inception of this Institute has been its most important activity and achievement. Starting with NP-4, the first variety to be released in 1951 we have had a whole series of varieties developed and released by the Institute during the last

50 years. The NP-700 and NP-800 series of wheat in whose breeding ~~xxxxxx~~ the privilege of providing the leadership are well known both in India and abroad for their high degree of resistance to diseases such as rust and loose smut. After the establishment of Sindri Fertilizers Factory soon after independence we decided that we should develop varieties of wheat, which can grow wheat under conditions of good soil and fertility. The NP-323, N.P.-324 and NP-376 were a few products of this phase of the programme. In 1962 the Institute came to the conclusion that unless our varieties are made dwarf, it would not be possible to take full advantage of fertilizers and water. To save time in the development of dwarf varieties the Government of India at the instance of the I.C.A.R. made a request to the Rockefeller Foundation for seeds of the dwarf varieties of wheat developed in Mexico under the International Wheat Improvement Programme jointly sponsored by the Foundation and the Mexican Ministry of Agriculture. Dr. Norman. E. Borlaug visited India at our invitation in 1963 and sent a wide range of dwarf wheat material to the Institute in October, 1963. This material was distributed by the Institute even in the very first year to special other centres ^{such as} ~~the~~ Ludhiana, Pantnagar, Kanpur and Pusa in order to get information on the performance of the dwarf varieties and their disease resistance properties under a wide range of conditions. The data accumulated under All-India Coordinated trials showed that two of the Mexican wheats, Lerma Rojo and Sonora-64 are suitable for immediate release and they were approved for general cultivation by the Central Variety Release Committee of the I.C.A.R. The Government of India has also made large scale

import of seeds of these varieties and consequently nearly a million acres are expected to have been under these wheats during the past Rabi seasons.

Right from the beginning the I.A.R.I. as well as other cooperating stations have been engaged in making selections from the breeding material received from Mexico as well as in making crosses between Mexican varieties and local wheats. To-day four of the selections, which are being found very promising and which in addition to their fertilizer responsiveness also possess the type of grains, which ~~are~~ our farmers and consumers like, are being named by our Hon^lble Minister and released for cultivation to the Delhi State. Some of these like Sona-227 have already been released by the U.P. Government and a sister selection of Sona-227 made at Ludhiana and named there as Kalyan-227 has been released for cultivation in Punjab. We are happy to have some of our farmers, who have grown these varieties here today and we look forward to hearing them.

When the seeds of varieties like the Sonora-64 and Lerma Rojo were received at the I.A.R.I. in 1960, they were found to have red colour. They were immediately subjected to treatment with Gamma radiation. Mutation with amber grains and better protein contents were selected from the radiated material. These have been multiplied in the Nilgiris hills in South India during summers and at Delhi during the Rabi seasons and have been tested for their agronomic and disease-resistance properties. One of the mutants derived from

Sonora-64 has recently been approved by the Central Variety Release Committee under the name Sharbati Sonora. This is the first variety developed by the application of the atomic energy, which has been released for general cultivation in the country by the Central Variety Release Committee. We hope that the official naming and release of this variety is being done today by the Hon'ble Minister since this release is said another symbol of great contributions made by the late Shri Nehru in the development of facilities for the peaceful application of atomic energy in India. In 1957 the I.C.A.R. initiated in collaboration with the Rockefeller Foundation an All-India Coordinated Maize Improvement Project. This project involved collaboration between the Central and State Institutions and the effectiveness of such national and international collaboration would be obvious from the fact that by 1961 four double crossed maize hybrids could be released for cultivation. Since then 5 more hybrids suited for different parts of the country as well as special purposes such as starch manufacture have been developed and released. In the last few years the majority of scientists have also paid attention to the development of what are known as composite varieties. Great advantage of these varieties is that they possess more or less the same yielding ability as hybrids but their seeds need not be purchased year after year by the farmers. The Central Variety Release Committee has recently approved the release of 6 such composite varieties and I feel that the hybrids and composites together will enable us to cover the entire major area of 10 million acres with high yielding strains. Increase

in major production will be beneficial not only with reference to the food problem of our country but also for promoting the development of poultry farming and starch manufacture.

I have, therefore, great pleasure in associating myself with this function.