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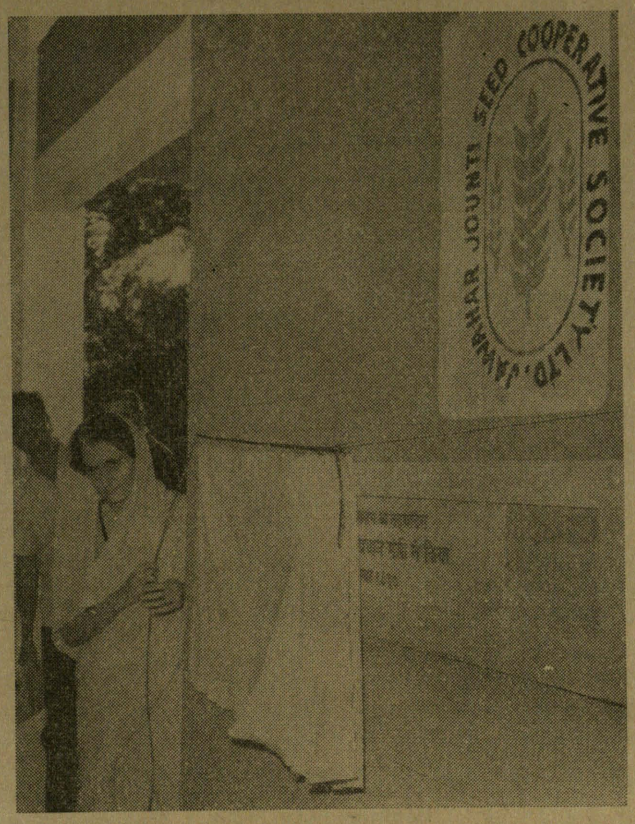

The Prime Minister opening the seed processing building of the Jawahar Jounti Seed Cooperative Society

The Evolution and Significance of

JOUNTI SEED VILLAGE

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DURING the last few years we have been witnessing a rapid shift from a static to a scientific agriculture in our country. This shift gained greatly in momentum during 1967, since favourable weather conditions and high price levels provided conditions conducive to creating the motivation necessary for maximising farm production. The catalyst in this "New Frontiers' Movement" in our agriculture is the high yielding variety. The dramatic increase in yield and income which the new varieties of rice and wheat and hybrids of jowar, bajra and maize bring about, when they are grown with adequate quantities of fertilizers and other inputs, has helped to raise the sights of the farming community and has led to the interest now evident in the seeds of new strains.

It is growingly realised that when conditions for the growth of a crop plant are improved, the chances for the survival amd spread of pests and pathogens are coincidentally better. Just as no man is resistant to all diseases, no plant variety possesses immunity to all pests and diseases. What is possible is only the development of a variety which is reasonably resistant to the spectrum of pathogens occurring at a particular time. When resistant varieties are released, the strains of pests or pathogens which were unimportant at the time of the release of the new varieties, start building up preferentially in population size and become important in a year or two. Thus, resistance-breeding is a continuous process with both the breeder and the

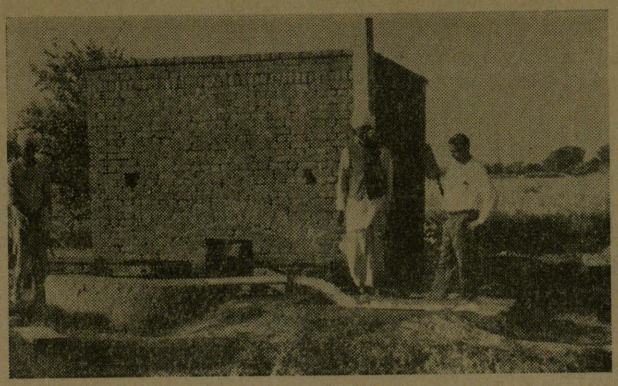
pathogen all the time striving to keep ahead of each other.

The probability of a severe outbreak of an epidemic increases when a single variety is grown in large, contiguous areas. Therefore, varietal diversity as well as a rapid replacement of varieties are both essential in order to sustain productivity at a high level over a long period. For example, in Mexico where the average yield of wheat has reached nearly three tonnes per hectare, the following nine varieties were released during 1966-67 : Tobari 66, Jaral 66, Inia 66, Noroeste 66, Siete cerros 66, Norteno 67, Ciano 67, Azteca 67 and Bajio 67. . The acreage under wheat in Mexico is only 10 per cent of that in our country. Varietal diversity is also important to avoid large scale seed movement over widely separated areas. If seeds produced in one part of the country are moved frequently into another, there is the possibility of spreading through seeds, new diseases. If a very effective seed sanitation programme does not exist, this possibility could pose serious dangers to crop production.

Seed Production Chain

From the foregoing, the role of an efficient seed multiplication machinery, capable of producing speedily and in adequate quantities seeds of the new varieties emerging from the breeders' assembly-line, in maintaining food production at a high level on a sustained basis would be obvious. There are three important links in the seed production chain. First, the "nucleus of breeders' seed" has to be produced by the research institution where the breeder who developed the variety works. Secondly, the nucleus seeds should be sown, preferably in state or state-controlled seed farms for the production or "foundation seed". These foundation seeds should be distributed to registered growers, who are progressive farmers, for the production of certified seed. The certified seed is distributed among farmers for raising crops for consumption. Competent technical guidance and supervision are essential at all these stages in order to ensure that the cultivator gets seeds of high quality and purity and free from infection. Largely due to the lack of adequate technical manpower, the pace of progress in seed multiplication has been very slow during the first three Plan periods. Therefore, an experimental project aiming to convert a whole village into a seed producing unit was started in November 1964 in the Jounti village of the Khanjawala Block of Delhi state. The project was taken up by the staff and students of the Division of Genetics of the Indian Agricultural Research Institute in memory of our late Prime Minister, Shri Jawaharlal Nehru, who gave the country the motto "Everyting else can wait but agriculture cannot".

Rogueing in progress



An old well fitted with electric motor. (Right) A view of the wheat fields in April, 1967 in the Seed Village. Very little lodging was caused by the March rains.

A few of my colleagues and I visited several other villages in the Delhi state during June-September, 1964 before going to Jounti but at all these places the farmers wanted to know the amount of subsidy that will be given to them for agreeing to produce seeds. Only at Jounti the farmers agreed to take to seed production on scienific lines and subject their plots to field inspection. In the rabi season of 1964-65, about 15 Jounti farmers sowed about 70 acres with high-yielding varieties of wheat. The farmers had been told that they should work for a minimum yield of 40 maunds per acre (about four tonnes per hectare), and though sceptical, they were responsive and carried out the cultural operations in accordance with the technical advice given. Two farmers harvested over 45 maunds per acre with the varieties Sonora 64 and Lerma Rojo and this generated much enthusiasm among the others for taking to the cultivation of the dwarf wheat varieties. Also, off-types could be easily detected and removed in the dwarf wheat population and hence the operation of roguing essential to maintain the purity of the seeds, was not found by the farmers to be difficult.

Seed Cooperative Society

The Jounti village has about 1000 acres of land under wheat, which were until recently irrigated mostly by wells fitted with persian wheels operated by camels or bullocks. Delhi State has over 30,000 acres of wheat grown with irrigation and hence over 30,000 maunds of high quality seeds would be needed every year to cover the Delhi area with high yielding varieties. It was anticipated that if the entire Jounti village takes to seed production, the needs of the Delhi state for seeds of wheat can be met by this village alone. The farmers of the village became receptive to this idea after the wheat harvest in May 1965 and decided to organise a co-operative seed producing and marketing society. This society named the Jawahar Jounti Seed Cooperative Socity Ltd., was opened in November 1965 by the then Chief Commissioner of Delhi, Shri V. Viswanathan. From that time the village has taken rapid strides not only in extending the area under quality seed production but also in improving the agricultural technology in all its aspects. Thus, while there was not a single tube well in the village in 1965, there are presently 20 shallow cavity tube wells and one deep tube well. Where there was not a single tractor, there are several now. The membership of the society has grown to 54, practically encompassing all the farming families in the village, having a total area of 850 acres. Unnecessary trees, which used to harbour birds and shade

The rich harvest tied in bundles

the crop, have been removed, roads have been widened, houses electrified and grain storage improved. Double cropping which was the exception before, has become the rule now. During 1966 and 1967 farmers took a crop of hybrid bajra during kharif and dwarf wheat during rabi. Yields of 100 maunds per acre per year from the two crops have become common.

Seed Processing Building

During 1966, the farmers decided to put up a small seed processing and storage building in order to facilitate scientific processing of seeds. This building was

completed early in 1967 and has facilities for grading the seeds, treating them with fungicides, bagging them in alkathene-lined gunny bags and storing in a fumigated room. The Seed Processing Building of the Society was opened by the Prime Minister, Shrimathi Indira Gandhi, in September, 1967. Thus, within three rabi seasons, a whole village has become skilled in seed production.

The Members of the Jawahar Jounti Seed Co-opertive Society have also experimented with the production of hybrid bajra seeds during the months February to May, after the harvest of sugarcane. This procedure has great possibilities since there will be perfect isolation during this period. Bajra, being a heat-resistant crop, produces good seed during May. These can be sown during the regular season in July. Thus, farmers with small holdings and poor means have shown that, given the necessary technical guidance, they can transform quickly a traditional and static agriculture into a scientific one. From the technical angle a Seed Village, which really implies the concentration of registered growers in one compact area, has the great merit that maximum advantage can be taken of limited resources of technical manpower.

In the years to come, new varieties with greater yield potential and better quality will be available in nearly all crops in rapid sequence. The extent of benefit that the country itself will derive from the work of our plant breeders will however depend upon the speed with which seeds of the new strains are produced and distributed. The Seed Village concept is, therefore, a worthwhile seed for being sown at numerous places in our country. Not only will we get seeds of high quality and purity in this way, but a new outlook conducive to farming becoming a skilled profession can be generated. Jounti farmers describe what has happened in their village as a "miracle" but this miracle is man-made and can be repeated where there is a will.