BETTER SEEDS

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CONTENTS

1. INTRODUCTION

Why do we all desire a higher standard of living? Because it means better food, more clothes, ampler living space and greater amenities of life generally. To achieve all this we must, however, produce more wealth. And in a country like India where nearly three-quarters of the population is directly dependent upon agriculture, it means that, in the main, greater production must come from the land.

How is this objective to be achieved?

There are many ways of increasing production from the land. It can, for example, be increased by better farming, greater use of fertilisers and better seeds, the consolidation of holdings, the extension of irrigation facilities, co-operative farming, etc. All this sounds simple enough, but in practice, it is not so. The present state of agriculture in our country is far from satisfactory. The yield, both in quality and quantity, compares very unfavourably with other advanced countries. If the production from the land is to be increased, it will therefore require immense effort on the part of the cultivators and the State.

Of late, the Government has been doing much to help cultivators in raising the yield of crops. It has, for example, extended irrigation facilities in the country. You must have heard of the names of the Bhakra-Nangal, the Damodar Valley, the Hirakud, the Tungabhadra and the

Mayurakshi projects. All these achievements fill us with pride. The Government has also undertaken the construction of tube-wells and other minor irrigation works. Among the other measures taken by the Government to the same end are the abolition of the zamindari, the consolidation of holdings, extension of credit facilities, the setting up of fertiliser factories, the encouragement to co-operative farming, the improvement of the cattle and the popularisation of better methods of farming.

All these efforts have already borne fruit, though much still remains to be done. During the last few years, partly because of good monsoons and partly on account of planned efforts of the people, production has risen by about a quarter and we have achieved near-self-sufficiency in food. This does not, however, mean that we can now sit back. Far from it. The position of food and agriculture in India needs to be watched constantly. Failure of the monsoon or any other natural calamity like floods may upset all calculations. We have, therefore, to build up adequate reserves of food by a further increase in production. More food is also needed for our growing population which is increasing at the rate of some 5 million every year.

2. IMPROVED SEEDS

One of the simplest and most effective ways of increasing production from the land is to have improved seeds. By using them the output is easily increased from 10 to 20 per cent. In some cases it is even higher.

How does this happen?

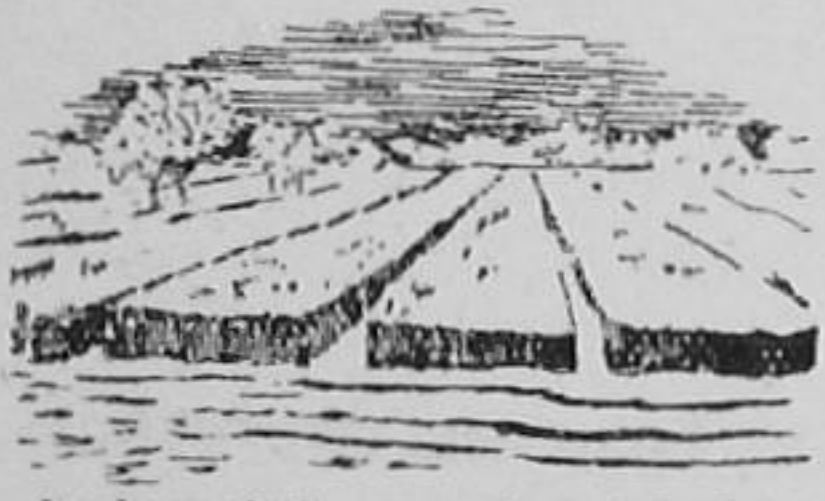
We all know that healthy children are born of healthy parents. Weak and diseased parents give birth to sickly progeny. So it is with agricultural produce. If the seeds sown in the fields are of good quality, the harvest will naturally be good and healthy. Unfortunately, until recently, adequate arrangements for supplying good seeds did

not exist and the farmers had to use non-descript and inferior quality seeds. No wonder, the yield from such seeds was poor and disease-ridden. During the last few decades, the State Departments of Agriculture have done much to educate the farmers in the use of better and improved varieties of seeds. The pioneering research of the Indian Agricultural Research Institute founded in 1905 at Pusa in Bihar and now located in New Delhi, needs special mention in this connection. This institute has not only helped in the selection of better seeds but also evolved a large number of new strains of crops which have resulted in higher yields, early maturity and resistance to disease.

3. SELECTION OF IMPROVED SEEDS

Now, what are good seeds and how are they selected? The answer to the first part of this question is simple enough. Good seeds are seeds which give a high yield, produce grains of superior quality and are resistant to various plant diseases and pests. The selection of such seeds, however, is by no means easy. You may have been bringing seeds from the market for years, and securing from them good, bad or indifferent crops, but how can you make sure that the crop you raise from your seeds will be the very best possible? This is a subject for the expert, and you would do well to rely in this matter on the advice of the Agricultural Officer of your area. If you discuss this matter with him, he will tell you that not every seed is suitable for every soil and climatic condition. Even when the crop to be sown is the same, different varieties of seed may have to be recommended for particular areas. One variety of seed may, for example, grow best in a certain type of soil, another in a different type. One may require very little water, another may want a large amount of water. One may not be able to stand much heat, another may thrive in it.

The scientists have studied the characteristics of different types of seed sown all over the world and by a series of experiments discovered what seeds possess a constant character and are best suited to a given kind of soil, temperature and humidity. This method is technically known as 'Selection'. There is another method of evolving good seeds in which two seeds of the same crop but with different qualities are crossed with each other so as to produce a new variety with the good qualities of both. This method is known as 'hybridization'.



A view of the experimental plot in which wheat varieties are undergoing trial

Suppose a scientist thinks that he has in stock a particular variety of seed which grows well in the hot climate but needs more water. He also has another variety which needs less water, but grows in a cool climate. A cross between two such seeds may produce a new strain which will grow well in a hot climate and need less water.

By carrying out such experiments over long periods of time, the scientists have evolved thousands of new strains to suit any normal condition of soil and climate. These have been given technical names like N.P. 700, H.R. 5, C.H. 10, and so on. We shall have to say more about these names later. In the meantime we must tell you that the work of evolving new seeds is not over yet. It continues in many forms. Attempts are being made to develop new varieties of seed which, while promising richer yields, may also prove resistant to plant diseases and pests.

Talking of plant diseases, we know that about 10 per cent of our agricultural produce is destroyed by insect pests every year. In some cases, the extent of damage is much

larger. In North-West India, for example, about 50 per cent or more of the yield of orchards is destroyed by fruit pests. The rusts and smuts in wheat crops weaken the plants and destroy a considerable portion of the produce. In sugar-cane the red rots and wilt have proved deadly enemies.

The scientists, after years of research, have evolved special seeds which are resistant to many crop diseases. The New Pusa 700-series of wheat varieties, for example, are said to be highly resistant to rust attacks and smut diseases. The N.P. 789 and N.P. 790 are practically immune from the attack of all types of black rust, N.P. 783 and N.P. 784 are

New varieties of wheat

resistant to brown rust and N.P. 786 to yellow rust. These strains have provided the basic material for further cross-breeding with a view to combining in one variety resistance to all three rusts. Already, research on these lines has produced a variety, N.P. 809, which has shown a good measure of resistance to the three rusts and given excellent performance in the hilly north-western tracts. Three other strains, N.P. 797, 798 and 799, have shown good results in the plains. Similar research has been carried out for the other crops also.

We give below some important varieties of seed, suitable for particular areas, for some major crops.

4. IMPROVED SEEDS OF SOME MAJOR CROPS

Wheat

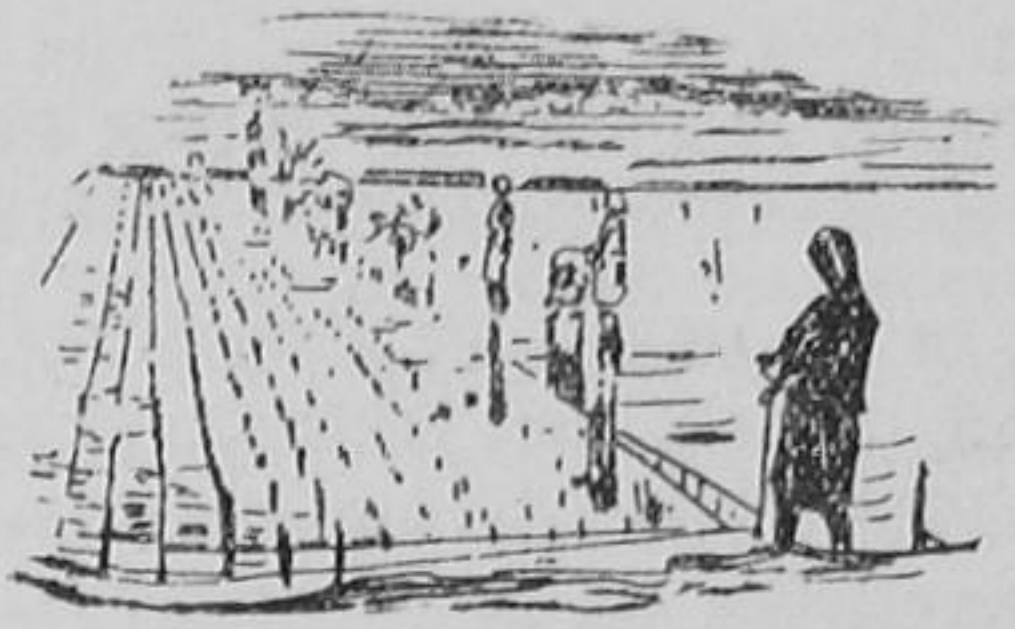
The earliest researches in India were carried out in wheat breeding. In the first decade of the present century, pioneering work was done by the Howards at Pusa. It was soon followed up in different wheat growing States. The result was that a large number of improved seeds suitable for different areas were evolved. Among the outstanding varieties are N.P. 4, N.P. 52, N.P. 125, N.P. 165 of the Indian Agricultural Research Institute, Kanpur, 13 of Uttar Pradesh, AO 68, AO 90, and AO 115 of Madhya Pradesh, Bansi 224, Jay, Vijay, Niphad-4 and Kenphad of Bombay and 8-A, 9-D, C-518, C-281, C-282 and C-591 of the Punjab.

These varieties, however, showed little resistance to plant diseases. Hence, as pointed out before, fresh experiments had to be undertaken at the Pusa Institute to evolve new strains. The result was the now famous NP-700 series referred to earlier.

Among the improved wheat varieties developed recently in some other States mention may be made of C-217 found suitable for cultivation under *barani* conditions in the Punjab, C-250 for humid regions like Gurdaspur, C-253 for the Kangra Valley and C-281 for the Hariana tract.

Paddy

Rice is the most important food crop grown in India. Research on this crop has been conducted at the I.C.A.R. and the Central Rice Research Institute at Cuttack. Owing to the varying soil and seasonal conditions and irrigation facilities in the different rice tracts, a large number of improved strains have been evolved. The total number is estimated at about 284. Of these, 27 varieties have been produced by hybridization. These are early, medium and late growing rice varieties as also some strains which are flood and disease resistant. Early maturing varieties have been imported from Russia, China, Japan and other countries. Two Chinese varieties have been found to be well



Line planting of rice

adapted to higher altitudes in the Kashmir Valley, where they have given yields of 5,000 to 6,500 lb. per acre. Among some popular varieties are Dular, Nagra 41/14 and Indrasail in Bengal, 370 Basmati, 100 Ram Jawain and 72 Phulpattas in the Punjab and T 9, 17, 22, 23, 36, 43, 136 in Uttar Pradesh.

Barley

Barley is an important cereal in Northern India, especially in Uttar Pradesh. It matures earlier and can be grown in soils which are not good for wheat. There are 24 varieties of improved barley strains. Popular amongst these varieties are NP 21 for Eastern U.P. and Bihar, C-251 for U.P. and NP 13 for Delhi, Rajasthan, Punjab and West U.P. A green fodder barley, C 144, has been found to require less water and can thrive on alkaline lands.

Pulses

Pulses are grown in about one-seventh of the cultivated area in this country. They are good for crop rotation to help in restoring fertility to the soil. They supply the major share of protein in vegetarian diet and some are vital cattle feed. Among the important pulses are gram, *arhar, urd, masur, moth* and *matara.*

Improved strains of pulses have been developed both by selection and hybridization. Among the outstanding varieties are :

Gram : BR 17, 65 and 77 for BIHAR, and T 87 for UTTAR PRADESH. Other IARI varieties are NP 17, 25, 28, 53 and 58. NP 58 does well in dry conditions.

Arhar : BR 13, 59, 60, 65, 71 and 172 for BIHAR, SA 1 for MADRAS T1 and 17 for UTTAR PRADESH. NP C 15 has done well in Bihar, U.P., Delhi and Rajasthan.

Urd: BR 10, 11, 68 and ST 8 for BIHAR, VZM 1 for MADRAS, S 1601 for ORISSA, T 9 and 27 for UTTAR PRADESH. NP 4, 6, 7 and 14 are other high yielding varieties for general cultivation.

Moong: BR 1, 2, 3, 4, 5, 8 and ST 7 for BIHAR, Krishna 11, Khachrod 5 for MADHYA BHARAT, CO 1 in S. MADRAS, S 150 for ORISSA and T 1 for UTTAR PRADESH. NP 18, 23 and 28 have attractive seed size and are recommended for general cultivation.

An arhar plant of improved variety

Matara (Pea) : BR 2, 12, 118, 178 for BIHAR, T 19 and 163 for UTTAR PRADESH. The last has brought more than double in money return as compared with the local variety. NP 29 of IARI has gained much popularity.

Masur : NP 11 and NP Hyb. 1 are early, high yielding and bold seeded types.

Oil Seeds

A number of oil seed crops are grown in India. The more important are groundnut, rape, mustard and linseed.

Groundnut : The groundnut is believed to be of Brazilian origin and is supposed to have been brought to India in the 16th century. It now occupies 10 million acres or about 41 per cent of the total area under oil-seeds. Of the world production, about 40 per cent is grown in India. Madras, Hyderabad and Bombay are the principal groundnut producing States.

The most important work for the improvement in the quality of groundnut has been done in Madras. Four new strains of the crop, viz., TMV. 1 to TMV. 4, are drought and pest resisting and promise about 25 per cent extra yield.

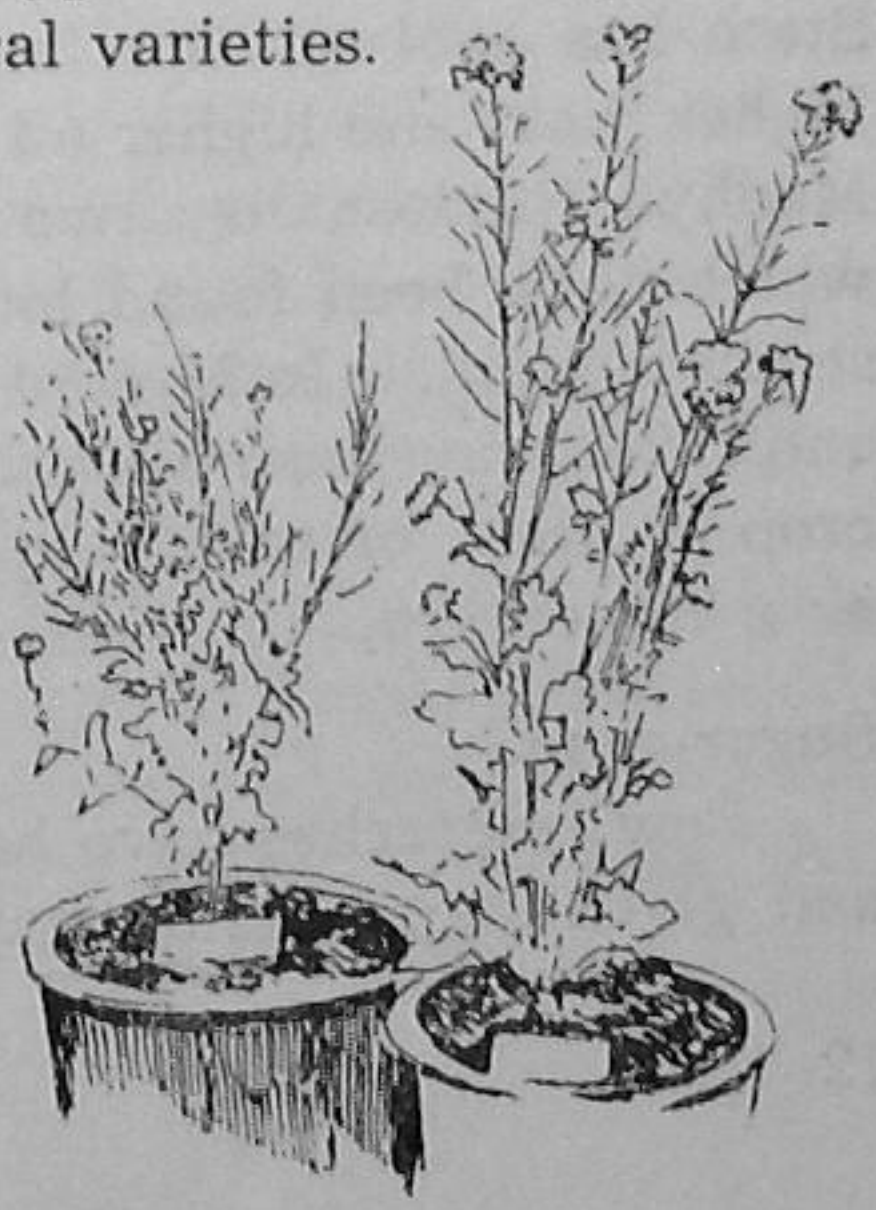
In Bombay and Hyderabad, Spanish peanut No. 5, Spanish Improved, Kopargaon 3, Pondicherry 8 and Kopargaon 1 have proved popular.

Rape and Mustard : Next to groundnut in importance come rape and mustard. These are mainly grown in U.P., Bihar, the Punjab, Assam and West Bengal.

In Uttar Pradesh three strains, viz., Rai T-4, T-11 and L-16, have been found to be early yielding. For mixed cropping with wheat strain, Rai ET 3|2 has been found suitable. Muzaffarnagar sarson is suited for the western tracts.

In West Bengal, Toria No. 7 and Rai No. 5, have proved popular.

In Assam, Type No. 8 and Type No. 22 have given 50 per cent extra yield over the local varieties.



A giant tetraploid toria produced by treating the common diploid toria with colchicine

Linseed : This is grown chiefly in Madhya Pradesh, Uttar Pradesh, Bihar and Hyderabad.

In Madhya Pradesh, two strains, No. 3 and No. 55, have recorded higher yields in rust free years. For the latter periods, strains IP 135 and IP 328 have given better results.

In U.P., T. 1193-2 and T. 477 and in Bihar BT No. 2 and BR No. 2 have proved popular.

The I.A.R.I. have evolved Types NP (RR) 5, 9, 38 and 45. NP (RR) 5 is suitable for North Bihar, NP (RR) 9 for Delhi, Madhya Bharat and U.P., NP (RR) 38 for West Bengal and NP (RR) 45 for Delhi, Rajasthan and Bihar.

Castor : This is another important oil-seed crop. Almost half the acreage under this crop is in Hyderabad State. The other States which grow castor on a large scale are Madras and Bombay. In Madras State three important strains of castor viz., TMV-1, 2 and 3 have been evolved in addition to a perennial high yielding strain CO1 which has a high oil content of 55 per cent. The important strains have given increased yields of 15-80 per cent over the local castors. In Hyderabad State four high yielding strains viz., HC1, HC2, HC3 and HC4 have been evolved. Of these, HC 1 is the best in yield and oil content. Three other strains HC 5, HC 6 and HC 7, combining high yield, oil content and seed type similar to the local varieties, have also been evolved. The Hyderabad strains have also done well in Punjab, Uttar Pradesh, Mysore and Rajasthan. Bombay State has evolved one improved strain viz., S. 20 giving higher yield and higher oil content than the local varieties. Madhya Pradesh has two strains viz., EB 16 and EB 31 which have been found locally superior to the Hyderabad strain in yield. In Mysore State two improved strains, L 53 and L 242, have been recommended for cultivation as a pure crop in areas of scanty rainfall, and L 73, L 74 and L 77 as a mixed crop in areas of medium rainfall.

Sugar-cane

Few researches have been so enthusiastically taken up and given such useful results as the improved sugar-cane

varieties bred at the Coimbatore Institute. This Institute was established in 1912 as a sub-station of I.A.R.I. By a process of cross-breeding with the wild relatives of sugar-cane, this Institute has evolved strains like CO 312, 313, 419, 421, 453, 630, which have increased by more than half the sugar-cane yield per acre and given birth to harder, longer and sweeter canes. The phenomenal development of the sugar industry in India during the last twenty-five years has been possible mainly because of these new seeds. To cater for the demands of the sugar industry, special types of early CO 630, CO 644, CO 659 and CO 686 and late CO 331 maturing varieties have been evolved which will ensure regular supplies to the mills in the crushing season. Practically the whole of the area under sugar-cane, in U.P., Bihar and other States is now under improved seeds.

Cotton

Research of far-reaching importance has also been done by the Indian Central Cotton Committee and the State Governments in evolving improved strains of cotton seed. Practically all the major States of India are now covered by improved varieties of cotton. The production of cotton has shown a record increase in the last few years and the country has more than made up the loss brought about by Partition.

There are three species of Gossypium which are under cultivation in India. Gossypium Arboreum and Gossypium Herbaceum are local varieties and have short and medium staples. Gossypium Hirsutum is American and is a long staple cotton. Among desi cottons, 35/1 of Uttar Pradesh, Jarila H 420 of Madhya Pradesh, Suyog, Vigaya, Virnar and Jaydhar of Bombay; Gaorani-6 and 12 of Hyderabad; Coconada-1, Westerus-1 and Rayalasima-1 of Andhra; and Karungani-2 and 5 of Madras are the important varieties recommended for cultivation. The American varieties viz., Punjab 216 F, L.S.S., Punjab 320 F of the East Punjab, Buri 0394 of Madhya Pradesh, Laxmi of Bombay, Parbhani-American of Hyderabad, Madras-Ugenda-1 and 2 of Madras State, have given high yields and better quality of lint.

All the varieties mentioned above are well known to both the cotton trade and the textile mills.

In addition, 134-C02 and 170-C02, which are long staple cottons, have given good results in Bombay and Saurashtra

Jute

During the last 25 years a great deal of research has been done on jute for the improvement of its quality and yield per acre. The quality of jute fibre depends on its length, strength, colour, lustre. and fineness. To import these qualities to the crop, the Jute Agricultural Research Institute has evolved a large number of improved strains Prominent amongst these are O-632, O-753, O-620, C-212 and C-321. All these strains are suitable for different areas, give higher yields and produce fibres of the best quality.

Tobacco

It is said that tobacco was introduced in South India by the Portuguese about the year 1605. From there it spread to the north.

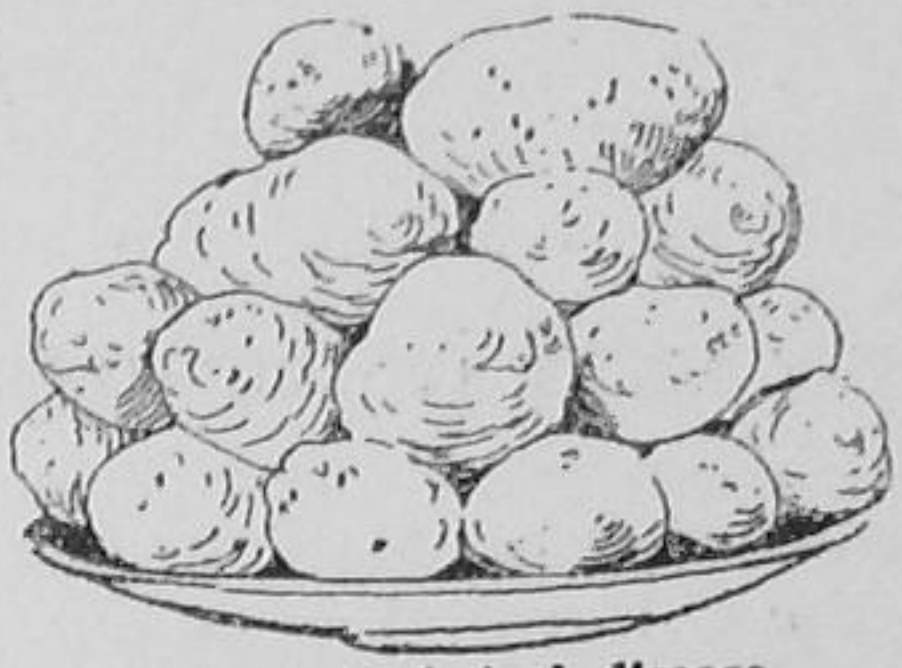
Attempts to improve the quality of tobacco were made in the last century by the Agri-Horticultural Society of India and in the present by the I.A.R.I. The latter has evolved new strains called NP 28 and NP 63, which have proved popular as chewing tobacco. These give yields ranging from 1,000 to 1,200 lb. per acre.

Two other selections, NP 70 and S. 20, have proved popular for biri-making. Attempts are being made at present at the Central Tobacco Research Institute, Rajahmundry, to control the diseases to which this crop is subject. In recent years, the I.A.R.I. has evolved two rustica varieties viz., NP 219 and 220 which have given high yields of cured leaf.

Potato

Research on potatoes has been done at the Central Potato Research Institute. Attempts are being made to cross the local varieties with foreign strains to secure higher yields. Among the Indian varieties, the popular ones

are Phulwa, Darjeeling and Red Round, and among the European ones the Gola, Magnum Bonum, Up-to-date and Great Scot. In addition, there are some varieties evolved by I.A.R.I. viz., Nos. 45, 208, 209 and 2885 which are high



A good seed stock disease-free strain of potato

yielding and produce quality tubers of good size and shape. The European varieties have proved successful in hilly regions and have yielded rich harvests. Under a five year scheme, a Central pool of disease-free potato seeds will be maintained and multiplied in suitable places in the hills and the plains.

Vegetables

Majority of the vegetable production and distribution work in this country has largely been in the hands of private commercial concerns.

Of late, the I.C.A.R. has given the problem thought and initiated a number of research schemes for the improvement of vegetables. In 1950, a Vegetable Breeding Station was established at Naggar in the Kulu Valley for work on temperate vegetables like cabbage, knol khol, beet, carrot, radish, turnip, beans, etc.

Good work has also been done at I.A.R.I. and in several States for the production of hybrids of many vegetables by crossing local varieties with imported seeds. Thus a local tomato has been crossed with a wild relative from South America, and the resultant hybrid, N.P. Hyp. 6, has given a rich yield of about 500 maunds per acre of round tomatoes. A Chinese sweet potato F.A. 17, has given double the yield of its local counterpart. An American variety of garden pea

has been found to mature in 65 days. The cow pea (lobia) from the Philippines has similarly matured in 35 days.

These varieties are being popularised. Researches are also being undertaken to control various vegetable pests.

5. THE POPULARITY OF IMPROVED SEEDS

Now, the question may be asked, are the improved seeds really popular in the villages? How do our farmers take to them? To what extent have they been introduced in the different States?

We shall try to answer the questions one by one. Take the question of popularity first. It is well known that in spite of lack of education and conservative habits our farmers are extremely shrewd and practical. They respond enthusiastically to any programme which aims at their real welfare. The introduction of improved seeds is one such programme. The case of sugar-cane is an instance. No sooner were the improved Coimbatore strains of sugar-cane evolved and their utility demonstrated, then the farmers took to the innovation most eagerly. Within a surprisingly short time, practically the entire area under the crop was sown with improved seeds. The progress in respect of some of the other commercial crops like cotton, groundnut, etc., has also been quite noteworthy. This may be due to the greater attention paid to these crops in the past, and to the work of specialised agencies created for their development. In the case of food crops, however, the progress has not been entirely satisfactory. Only during the last few years, partly because of the 'grow more food' campaigns and partly owing to the activities in the Community Project Administration some advance has been made.

Perhaps, the one single factor responsible for this slowness is the immensity of the problem involved. Of the total crop area in India, more than two-thirds are covered by food crops. The conditions of soil and climate differ widely

in different regions. Different varieties of improved seeds have, therefore, to be recommended for each area.

The question that arises is how to popularise these myriads of varieties among the peasants. Some useful hints may be suggested.

First, before an improved variety is recommended, the Agriculture Department should make sure by repeated experiments that it is really an improvement on the seed in use. Secondly, frequent changes should be discouraged. Such a course, apart from being troublesome, is likely to shake the confidence of the farmers in the judgement of the Agriculture Department. Thirdly, the utility of improved seeds should be demonstrated on the farmer's own land.

The method suggested for the last item is as follows: Take any one large plot on a farmer's land. Its size should preferably be one acre but not less than a fifth of an acre. It should have been under one and the same crop in the previous season. The plot should be divided into three equal plots. The centre plot should be sown with the improved variety to be demonstrated and each of the other two plots with the local variety already in cultivation. All three plots should be sown on the same day and receive the usual treatment. Sound seed of both the improved and local variety should be used, and every possible effort made to obtain a good stand in all three plots. At the end of the season all three plots should be harvested separately and the yield of the improved variety in the centre plot should be compared with the average yield of the local variety in the two other plots.

This three-plot arrangement will provide an excellent visual demonstration of the comparative growth of the crop of the improved and the local varieties.

Demonstrations on the above lines, the Farm Forum Programme of A.I.R. and the work done in the Community Development and N.E.S. Blocks have done much to convince the farmers that they stand to gain considerably by using better seeds. The crop competitions organised in several States and the institution of the award of *Krishi Pandit* have also served the same purpose.

The following table shows that under the Community Development and N.E.S. Block Schemes, the quantities of improved seeds distributed in the various States were as follows:

Improved Seeds distributed under the Community Development and N.E.S. Block Schemes (October 1952 to March 1955).

S. No.	*Name of the State*	*Quantity of seed distributed in mds.*
1.	Andhra	26,955
2.	Assam	18,197
3.	Bihar	94,243
4.	Bombay	31,908
5.	Madhya Pradesh	256,832
6.	Madras	101,183
7.	Orissa	60,784
8.	Punjab	168,113
9.	Uttar Pradesh	647,397
10.	West Bengal	20,599
11.	Hyderabad	87,587
12.	Madhya Bharat	35,684
13.	Mysore	12,758
14.	PEPSU	103,002
15.	Rajasthan	80,664
16.	Saurashtra	16,958
17.	Travancore-Cochin	1,721
18.	Ajmer	13,807
19.	Bhopal	22,308
20.	Coorg	7,433
21.	Delhi	79,046
22.	Himachal Pradesh	18,293
23.	Kutch	1,057
24.	Manipur	1,332
25.	Tripura	316
26.	Vindhya Pradesh	16,605
27.	N.E.F.A.	2,215
	Total	19,26,997

Calculated at the rate of about ½ md. of seed to an acre, we can say that, in the year 1953-54, about 40 lakh acres of land were under improved seeds. This works out at less than one-sixtieth of the total cultivated land.

6. MULTIPLICATION OF IMPROVED SEEDS

The crux of the problem in regard to the distribution and use of improved seeds can be stated as follows. There is an acute shortage of improved seeds for the major food crops. It is quite obvious that the research stations cannot produce these seeds in adequate quantities. They can only provide nucleus seeds.

The question now is, how to multiply these seeds fast enough to meet the vast need of this country?

Unfortunately, there are no commercial organisations in India to take up this task. At present, the work is being done by the State Agricultural Farms, which exist practically in all the States. The nucleus seed is sown at these farms. In Uttar Pradesh a wooden dibbler has been evolved which has reduced the seed rate considerably. In the case of wheat, for example, the seed requirement has been reduced from 40 seers to 6. After sowing, the standing crop is regularly inspected for roguing, i.e., to remove from the crop stay plants which are not true to type or have been produced from seed other than improved, owing to accidental admixture. The crop is then thrashed separately, care being taken to see that it is not mixed up with other seeds. The produce is carefully stored in suitable stores and protected from insects and pests, humidity and inclement climatic conditions. Afterwards, the total quantity of seed is distributed among selected growers, called 'A' class farmers, who are required to multiply it further on their fields. The 'A' class growers are normally big cultivators who take an interest in improved agricultural operations. They are given seeds at market prices even though the cost

of production may be higher. The crop on the fields of 'A' class growers is carefully rogued and steps taken to see that the seed produced is pure. For this purpose their fields are frequently visited by inspectors and the thrashing is supervised properly.

As the number of 'A' class growers is normally limited, the multiplication of seeds is not large enough to cover wide areas with improved seeds. The produce of 'A' class growers is, therefore, carefully stored and issued the following year to 'B' class growers. These are comparatively small cultivators. They are advised to multiply seeds in the same manner, all precautions being taken about roguing and separate thrashing. The seed is supplied at the market rate and taken back at a premium. Experience has shown that at this stage of multiplication, sufficient quantities of improved seeds become available for further distribution.

It should, however, be noted that it is always better to restrict the number of intermediate growers. The quality of seed tends to deteriorate in such multiplying operations. It is, therefore, necessary for fresh nucleus seeds to be obtained from the farms producing such seed every three or four years.

In the Community Project areas model farms have been established in many villages. These farms grow the nucleus seed and have it further multiplied in one or two stages through approved registered growers. In cases like tobacco and cotton, where uniformity of produce is very important, the growing of a particular variety is obligatory. In some States such legislation has already been adopted. To facilitate the multiplication and distribution of improved seeds, the Ministry of Food and Agriculture have proposed to start a 100-acre farm in each district of the country. A Seed Certification Scheme, is also proposed to be put into effect in the Second Plan period.

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