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Life members and subscribers of 'Krishak Samachar' are requested that while informing any change in their addresses, they should send the wrapper of the last issue received by them as well as their registration number and their address to clear words.

Increase in agricultural productivity is an indispensable condition for economic development. In all the developed countries of the world, increase in agricultural productivity either preceded or proceeded hand in hand with industrial development. In the context of growing population and limitation of space in this country, the increase in agricultural productivity cannot be over-emphasised and must be considered the greatest desideratum of our planning. It is, therefore, a matter of great satisfaction that the National Productivity Council, which has rendered a yeoman service to industry, has started work in the field of agriculture also. It held a seminar on the 14th and 15th May, 1965 to discuss the ways and means of increasing agricultural productivity and invited progressive farmers and agricultural experts.

There are two main factors in agricultural production which must be taken note of.

Firstly, there are a number of difficulties in increasing productivity in agriculture, which are not encountered in industry. This is because, unlike industry, agriculture is handled by millions of farmers. This devolves a special responsibility on the farmers' organisation, like the Bharat Krishak Samaj.

Secondly, the term productivity in agriculture has an altogether different meaning in the developed countries where there are a number of alternatives available to the farmers, than in India where there is an acute paucity of inputs, and the tariff, marketing and monetary policies all tend to depress the farming incomes.

The main difficulty in increasing agricultural productivity in India is the low-man-land ratio, as a result of the extreme pressure of population on land. This results in acute and large-scale under-employment and disguised unemployment in the country-side. Our farmers on the whole are hardly fully employed for four to six months in a year, even when the system of farming is intensive. In the face of such a vast surplus and cheap labour and the small size of the holdings, introduction of mechanised farming is not found economical or feasible with the result that primitive methods of agriculture are still being perpetuated. No wonder, the productivity per acre in India is one of the lowest in the world. Even as compared to other under-developed or developing countries, we are far behind in the matter of agricultural productivity. For instance, in the case of rice, the yield per acre in 1960 was about 75 per cent and in the case of wheat, 72 per cent of the world average. Compared to countries like Japan, Italy, U.S.A. etc. the yield per acre is even smaller. For example, in respect of rice, the yield in India was less than a third of that in the U.A.R., Japan or Italy, while in respect of wheat the yield was less than a fourth of that in Germany and U.K.

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CONDOLENCE MESSAGES

We continue to receive innumerable messages of condolence from people in India and abroad, on the sad demise of our President Dr. P. S. Deshmukh.

Sir Harold Woolley, the President, National Farmers Union London :

"It was with very great regret that I heard of the death of Dr. Deshmukh and I hasten to convey to you and to the Farmers' Forum India the sympathy of the National Farmers' Union in the great loss you have sustained.

Dr. Deshmukh was a man who quickly established himself in international agricultural affairs and particularly in the Conferences of the I.F.A.P., as Vice-President and a member of the Executive of I.F.A.P.

We mourn his loss because it deprives us of his clearly expressed and well informed views on Asiatic farming problems, particularly those of the great continent of India, and also because we have lost a friend whose personality and charm, and not least his sense of humour, endeared him to us all.

Please accept our expression of sorrow and sympathy and our good wishes that in the future your organisation will still go forward to successful achievements on behalf of the people of India."

Mr. Allen Grant, President, California Farm Bureau Federation, California :

"We have just learned of the passing of Dr. Deshmukh. Please ex-

press our sincere sorrow to the family of Dr. Deshmukh and to the Farmers' Forum of India.

Indian agriculture has lost a strong ally and we have lost a friend."

Condolence messages were also received from a number of individuals including: Shri T. Rajagopalan, Advocate, Madras; Shri R. Tuli, New Delhi; Shri Madan Mohan, Aligarh; Shri A.S. Venkat Rao, Madras; Shri Asutosh Bhattacharyya, Calcutta; Shri R.B. Gorde, Poona; Shri V.S. Muthuswamy Iyer, Secretary, Kerala Farmers Forum, Palghat; Shri R.B. Somawanshi, Gwalior; Shri Manik Lal Somani, Chairman, Akola Distt. Krishak Samaj, Maharashtra; Shri K.P. Bhise, Chairman, M.P. Service Cooperative Society, Aurangabad; Shri T. Thipperudraiah, Bangalore; Shri V. P. Marwaha, New Delhi; Shri V. Veera Raghava Reddy, Nellore; Shri K. Manikappa, Mysore; Shri R. C. Patil, Chairman, Taluka Farmers Forum; Shri N.P. Mahajan, Madhya Pradesh; Shri K.R. Patil, Shirpur; Shri R.R. Pandit, General Secretary, Maharashtra State Krishak Samaj; Shri Raghunath Sahai Gupta, Moradabad; Shri Ram Singh, Rajasthan Krishak Samaj; Shri M.C. Rautray, Assistant State Organiser, Bharat Krishak Samaj, Bhubaneswar; Shri Shanta Bhai Dara, East Nimad; Shri Chander Kant, Mongair; Mr. & Mrs. Asa Morgan, U.S.A.; Miss Ruby Yeutter, Michigan, U.S.A.; Mr. Harold L. Creal, New York; Shri C. K. Mallappa, Secretary, Young Farmer Club, Chettanahalli.

I.F.A.P. Pays Homage to the Memory of Late Dr. P.S. Deshmukh

When the Executive Committee of the I.F.A.P. met at OSLO/Norway on the 10th & 11th of May, 1965, Mr. H. Newsome, the President, paid homage to the memory of the late Dr. Deshmukh and the Committee stood in silence as a tribute to their lamented colleague Dr. Deshmukh was the Vice-President of the I.F.A.P.

Mysore : Mr. & Mrs. Lester Iversen, U.S.A.; Mr. and Mrs. Mike Schiltz, U.S.A.

Several organizations also, passed condolence resolutions, some of which are : Farmers' Forum, Kerala; Manipur Krishak Samaj; The Circars Agricultural Development Corporation Ltd., Bhimavaram; Paschim Banga Krishak Samaj, Calcutta; Krishak Samaj, Jullundur; Bharati Krishak Samaj, Maharashtra; Gujarat Krishak Samaj; Village Krishak Samaj, Padley; Distt. Krishak Samaj, Jalgaon; Bharat Krishak Samaj, Malapur; Maharashtra State Krishak Samaj; Amravati District Krishak Samaj; Akote Taluka (Maharashtra) Cooperative Agricultural Society Ltd., Maharashtra, Delhi Krishak Samaj.

In addition to above condolence messages from hundreds of people from all walks of life, from India and abroad, were received. However on account of paucity of space we regret our inability to publish their names.

SPEECHES

Address by

Mr. James H. Boulware, Agricultural Attache, American Embassy, New Delhi, to the Delegates to the 11th National Convention of Farmers held at Ahmedabad from March 8 to 11, 1965.

I am pleased to be here in Ahmedabad and honoured that my first address in India is at the annual meeting of the Farmers Forum. I have been in India only about two months and feel most humble in discussing Indian agriculture with you who have spent your lives working in agriculture. Nevertheless, I have

formed some ideas of my own on Indian agriculture. It is my good fortune to discuss them with you.

Since coming to India I have heard it said time and again that the vagaries of India's climate are such that food production fluctuates greatly from year to year. For the country

as a whole this has not been the situation since 1950. This does not imply that some villages, districts or even States have not had disastrous years. However when all India is concerned, your production of food grains has been highly uniform, not highly variable. In 1950 your food grain production was 55 million tons.

annually. It has grown to 87 million tons in 1965, a great achievement and a tribute to the farmers of India. At no time did production for one year decline as much as five percent from the level of the previous year. In some countries declines of as much as 50 percent occur.

The stability of production is obviously most important to India. Conditions which make it possible, it seems to me, also make it possible for India to produce much more food per acre than it does now. It may be presumptuous for me to say this to you but let us examine the situation.

India has some of the world's leading technical experts in agriculture. Some plant breeders, pathologists, soil scientists and many other specialists are well known in world scientific circles. Literally thousands of others are less well known internationally but they have information and knowledge that should be invaluable to farmers of the country. I believe you will agree that much of this information on modern agriculture is not available to most of India's six crores of farmers.

I submit that the dissemination of the best information on production methods is the greatest challenge faced by the Bharat Krishak Samaj and indeed the Government of India. Actual use of information now available would enable India to increase its production 25 to 50 per cent and yet even to double it in many areas.

This will not be easy. The easy lessons in Indian agriculture your ancestors learned well centuries ago. Some of the more difficult, you the leading farmers know and apply. Unfortunately the great mass does not have this information.

The need, in fact the absolute necessity, is to begin now to educate those who do not have this information. I stress that I do not mean by educate to teach the less affluent farmers how to speak, read and write English or even Hindi as desirable as that may be. By educate, I mean to inform every farmer of the best means known to utilize fully his particular plot of land. I mean to demonstrate to him the methods of modern agriculture, to show him

the advantages of fertilizer and pest control. I mean to help him store his harvest with the least practicable loss and finally to assist him in marketing so that he benefits to the maximum extent from his labors.

To do this job the States and Central government have made a start by employing Village Level Workers (VLW). You the leading farmers can help by encouraging the VLWs. From our experience in the United States I know that in the early days of extension there is a tendency for farmers to say that theoretical education is of little or no value to them. I urge that you do your part to avoid this.

What does it matter that the V4W may not have years of experience in yoking bullocks, plowing or hoeing weeds. These things every farmer in India knows well and probably needs no help.

A well trained VIW can demonstrate the benefits of new varieties, of deeper plowing, of fertilizer and of many other modern practices. You can help him by assisting with demonstrations and by encouraging others to do so. Governments, of course, can help by providing better training and facilities.

Experience in my own country shows clearly that well trained extension workers supported by leading farmers can materially increase the well-being of the mass of the farmers as well as food production. With a concerted effort the Government's Fourth Plan target to increase grain production by about five percent yearly can be attained. Without your full support it cannot.

I had not intended to talk on the Food Corporation of India but some of the questions on remarks by the previous speaker lead me to do so. That Corporation is new. It is being established to assure that farmers get a fair price for their grain and to assure that consumers are not exploited. Plans are that it will do this by offering to buy at or above fixed price levels. It will likewise sell at fixed price levels. I sense a tendency to load numerous other tasks onto the Corporation and in effect make it a combination of the State and Centre Departments of Agriculture. This it cannot be. If in the next five years the Corporation can accomplish its main objective of price stabilization at reasonable levels it will have done well indeed. It cannot, in my opinion, do this if loaded with numerous extra functions.

New Varieties and Hybrids Provide New Horizons in Indian Agriculture

Address by

Dr. W. H. Freeman to the Delegates to the 11th National Convention of Farmers held at Ahmedabad from March 8 to 11, 1965 :

Food grain production in India is a problem that concerns all of those associated with the growth and development of the nation. Members of the Bharat Krishak Samaj comprise a group which can be most effective in increasing food grain production.

Members represent that segment of the agriculturists who can provide leadership in the nation and in their communities by putting into use new and improved practices on their own farms. This provides a demonstration for the neighbouring cultivators

as they see improved practices in action.

Substantial advances in food grain production must be made in India. Imports of food grains have been at a level of about 5 million tons and have recently been increased to about 6 million tons annually. Such imports have provided a means of reducing the food shortages but in order to meet future population, expansions and improved living standards of the population, Indian agriculture must provide substantial increase in food production.

Annual rates of population growth of 2.5 to 3 per cent require an annual increase in food production of 5 to 6 per cent to supply the needs of the increased population and to allow for improved standards of living.

Rather rapid improvements in agriculture occurred from independence in 1947 to 1960. With independence, production was 52 million tons and in 1960 production was about 80 million tons. Since 1960 production has leveled off and even declined. Meanwhile, population has increased by about 34 million people. With such a situation, the food problem can easily reach explosive dimensions as was evidenced in Kerala and elsewhere in the latter part of last year. Increases in imports and strict rationing controls are only temporary measures that do not solve the problem nor do they really prolong the time allotted for its solution.

Although agriculture is a State subject, we can see that it is a national problem and to those who are starving, it is a most personal problem for which time does not allot the possibilities of experimentation of means of reaching solutions.

This plateau of production that has prevailed since 1960 could be the result of a number of factors operating independently or, by chance, together. Weather, cultivator incentives, fertilizer, drainage, salinity, and crop varieties—these are only a few which are contributing factors. Land limitations mean that the food deficit will have to be corrected primarily by the increase in the per acre output rather than extending the acreage of land under cultivation.

It would seem that a partial explanation of this plateau in national production is the result of the ceilings achieved in the productive potential of the crop varieties used. Additional increments of fertilizer do not provide economic returns so cultivators do not apply more fertilizer in attempts to increase yields with their existing varieties. In studies of experimental results obtained in Orissa and West Bengal, Herdt and Mellor*—concluded that maximum yield level of rice in Orissa is reached at

about 40 pounds of applied nitrogen per acre. Under comparable experimental conditions maximum yields in Arkansas were reached 120 pounds of applied nitrogen. They concluded that development of more responsive varieties could materially affect rice production and provide more effective and profitable use of the increasing inputs of inorganic nitrogen.

Although the increases in food supply which are demanded may not be achieved by new strains alone, they are the building blocks upon which fertilizers, pesticides, irrigation, drainage, and other improved practices can be based in order to push up crop yields to levels of production required.

Recent developments by plant breeders provide the basis for the establishment of practices which can raise yields to new levels which have been difficult if not impossible to achieve heretofore.

The first break-thru in new strains came in 1961 in maize. This came as a result of a coordinated breeding effort which was conceived and put into action in 1957. Coordinating agencies included the Indian Council of Agricultural Research, Indian Agricultural Research Institute, The Rockefeller Foundation, and many State Research Stations. The introduction of new breeding materials already in various stages of inbreeding provided new germplasm. By evaluating these materials in appropriate crosses and extensive testing, it was possible to achieve in a very few years what might not have been accomplished in a generation of independent breeding research effort, 4 releases were made in 1961—Ganga 1, Ganga 101, Ranjit, and Deccan. Since then additional hybrids have been released which include Himalaya 123 and VL 54 for the hills, Ganga 3 as a replacement for Ganga 1, Ganga Safed 2 (a white flint), and Hi-Starch Hybrid Makka (a white hybrid with high starch content.) The important characteristics of these hybrids are high yielding ability, high response to fertilizer, insect and disease resistance, and acceptable grain colour and type.

The efficiency of a coordinated effort in developing new hybrids was demonstrated with these first releases of maize hybrids. Although maize is a relatively minor crop in India, the research successes in this crop indicated that similar patterns of breeding research could be established in other crops. Jowar, bajra and wheat programmes have been initiated and consideration is presently being given to a similar pattern of research for rice and legume crops.

The jowar breeding programme likewise demonstrated the efficiency of cooperative research efforts. The first jowar hybrid, CSH-1, was released for production in October 1964 and the characteristics and the data upon which the release was based are high yield, lodging resistance, pearly cream grain, easy threshability, and good flour colour and taste. Seed presently being harvested will be used for extensive testing and demonstrations in 1965 and much expanded seed production will be undertaken this year. CSH-1 is day 1 night insensitive and can be grown in all seasons for this reason.

Still another product of coordinated effort has been the release of a new bajra hybrid, HB-1, in February 1965. HB-1 has a high yield of grain and fodder which will make it a desirable replacement for local bajra in most areas of India. It is specifically adapted to summer sowings in Madras and to the early and mid-season kharif sowings. Its susceptibility to shoot fly will prevent its use in rabi sowings. This hybrid is now being planted for the production of seed for wide scale demonstrations in the 1965 kharif.

Cooperation of a world wide magnitude was demonstrated in all these crops. The lines utilized in these hybrids were not the product of any one single breeding programme nor any single nation. Maize lines came from U.S.A., Columbia, Peru, and India. Sorghum lines came from the U.S. and Africa and bajra lines came from the U.S.A. and from Punjab in India. This measure of achievement would not have been possible without each individual in

* Herdt, Robert W. and Mollor, John W. *The contrasting response of rice to Nitrogen : India and the United States.*

the programme striving in cooperation with other members of the research effort to achieve a common goal.

This pattern and these efforts under the guidance of ICAR have provided the present hybrids of three crops. It may be expected that similar results can be achieved with wheat and paddy. These will not be hybrids as in the case of maize, jowar, and bajra but true breeding varieties.

The products of coordinated research in all of these crops provide new horizons in the production of food grains in India. Instead of acre-yields of 11 maunds for maize, 5 maunds for jowar, and 3 maunds for bajra, the yield potential of the present hybrids can provide increases in yields of 50 to 100 per cent by the use of hybrid seed alone. Such yield increases from such low base yields would make the increases only moderately effective in increasing national yields. However, in conjunction with breeding experiments, agronomic experiments have been conducted to determine response of the hybrids to higher levels of fertility.

These experiments have conclusively demonstrated the increased efficiency of hybrids in utilizing added increments of fertilizer. In maize, 15 experiments conducted over a three year period at several locations in the four maize regions of India produced results in Table 1.

The released hybrids are grown in demonstrations conducted in several states. These are done on cultivators' fields and conducted by US-AID and the state departments of agriculture. These results are summarized annually and provide a measure of the results obtainable on cultivators' fields. Over 200 of these demonstrations were conducted in 1964. Results indicate that with farmer conditions hybrids will out-yield the local varieties by more than 50 per cent under comparable conditions.

Experiments with sorghum and bajra hybrids have demonstrated similar results on an experimental basis and will be planted in extensive result demonstrations in 1965.

In order for these hybrids to be available to the cultivator so that he

may achieve similar results on his own lands, he must purchase new seed each year. A seed production programme for hybrid seeds was inaugurated in 1961. In 1963, the National Seeds Corporation was established to multiply the parent stocks of the hybrids and to initiate and establish the seed production programme which would supply hybrid seed of high quality.

Annual renewal of hybrid seeds requires the production of hybrid seed on a large scale to meet demand.

- Land
- Isolation
- Technical competence
- Detasseling
- Processing

In order to establish patterns of seed distribution that would provide each year new hybrid seed to the cultivators, a programme was developed that would provide high quality seed. This programme included a number of phases which have been enumerated by the committee appointed in 1960 to formulate this programme. They stated :

- (1) Organizations for the production of foundation (nuclear) seed must be developed. Because of the quality requirements and since provision of adequate supplies of foundation seed is in reality a service enterprise, these organisations should need to be closely guided by plant breeders and extension seed specialists and probably should always be self-supporting agencies of the National Seeds Corporation.
- (2) A seed industry, operating in the private sector and stimulated by competition and the profit motive, must develop to produce, process and market the seed of double cross maize hybrids and of improved hybrids and varieties of other crops for the cultivators.

- (3) Seed certification agencies, operating independently of direct government control, of the foundation seed organizations, and of the private seed industry, must be established.

- (4) Seed laws must be passed and law enforcement agencies of the state government must be set up.

- (5) An aggressive educational and demonstrational programme on use of maize hybrids and other improved seed must be carried out by the state, district, and block extension seed specialist who have seed improvement as their principal work.

This new seed was to be provided every year as well as to be used as a vehicle to carry new concepts of seed quality and cultural practices. Each time a cultivator buys new seed he has an opportunity to hear again the new cultural practices to be used with his new seed. This new seed was set apart from grain by processing—drying to control and preserve germinability, cleaning to eliminate undersized and chaffy seed, treating to preserve seed from fungi and insects, packaging to make seed available in convenient quantities, sealing to pre-

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mers and to start initially three centres in the State, (2) starting agricultural exhibitions, which should really be educative to the farmers, (3) Constitution of a Study Committee on various aspects of irrigation, (4) Drawing up practicable four 5-year village plans by the Block Krishak Samajs and their compilation and study by the District Krishak Samaj, (5) study of the problems of wandering cattle in Bundelkhand Region.

vent tampering, and tagging to assure identity.

The acceptance of hybrid seed is gradually accelerating. Since its initial start with 135 acres of commercial hybrid seed production the programme has expanded almost 200 fold and in 1965 will more than double the production of 1964. This will mean that in 1966 over 4 per cent of the maize acreage in India will be planted to maize hybrids alone. It can be expected that this 4 per cent of the planted acreage can provide 6 to 8 per cent of the total maize production.

TABLE 1

Yield (Kilograms per hectare) of hybrids with different rates of Nitrogen Application

Yield—Kilograms per hectare and per cent of Untreated Check

	Kilograms of N per hectare				
	0	45	90	135	180
Maize—1961-1963					
Hybrids	2537	3633	4297	4767	5114
Local Variety	2231	2986	3331	3663	3805
Per cent of the Local Variety	114	122	129	130	134
Sorghum—1963					
Hybrids	3271	4176	4743	—	—
Local Variety	2036	2411	2628	—	—
Per cent of the Local Variety	161	173	180	—	—

Food Corporation : Marketing & Recruitment Policy

By Satwant Singh, Member, Board of Directors, Food Corporation of India and Life Member Bharat Krishak Samaj

The Food Corporation of India has come into existence and formalities with regard to its establishment are complete. In his inaugural speech, the Union Minister for Food and Agriculture made a major policy statement emphasising that the role of the Food Corporation was to discipline grain markets. He also revealed the happy news of expecting bumper harvests of paddy and wheat which would be supplemented by increased imports.

Disciplining of grain markets would be a stupendous task. The Corporation would be able to do this job only if there is a close co-ordination between the various Government agencies. It will have to fight against the customary malpractices of the intermediaries such as the *Kacha Ahrties*, *Banias* etc. by establishing direct purchase contacts with the producers. It will, therefore, have to set up agency which will reach the producer direct at the village level and the highest purchaser such as the Government, the millers etc. It shall have to come in direct conflicts with the hoarders.

The storage facilities particularly for the growers would have to be provided at different grain markets.

The growers should be able to unload their wheat and paddy at local point stores of the Corporation. The servicing should not be costly. It can avail of the storage facilities from the State Warehousing Corporations as well as from the Central Warehousing Corporation. From this point the foodgrains shall have to be supplied to the deficit areas as well as to the mills. The marketing of the foodgrains can be in collaboration with the Marketing Committees, Co-operative Societies etc., but the process shall have to be streamlined to avoid malpractices. The main objects of the Corporation would, therefore, be to ensure appropriate prices to the producer and reasonable prices to the consumers according to grades. It would, therefore, be necessary that the Corporation must have an up-to-date information with regard to cost of production of grains, cost of processing, grading the products, storing them at appropriate stages, calculating the margin for processing, streamlining the marketing organisation so that the trade does not take undue advantage of any loopholes in the marketing legislation. The grading process may be another very complicated

affair. It would involve the estimation of moisture on the most scientific basis. Legislation will have to be amended and several State and Central agencies shall have to amend their process to toe the line of the Corporation's policy. It may be necessary to discipline the flour and rice mills short of nationalising them so that they do not come in the way of implementation of the policies laid down by this Corporation.

The constitution of the Corporation, as it stands today, is unlike the Australian Wheat Board which is a monopoly organisation. If it were on that line the entire Government machinery could have come into play, but this being an independent statutory body should have a well experienced and efficient staff both in the field and at the Head Office. The officers of the Corporation should have a strong rural background with basic educational qualifications in agriculture as also experience in quality control, marketing and co-operation. Some of such officers can be drawn from the appropriate Government Departments. There would be other staff at the higher level which would require more technical qualifications and experience.

At the Head Office there are to be two main divisions :—

- (i) Administrative ; and
- (ii) Accounts.

The Administrative division will have to look up to the framing of General Regulations, Staff Regulations, Provident Fund Regulations, Gratuity Regulations and their implementation.

The Accounting Wing will have to frame Expenditure Regulations. They will have to prescribe the accounting procedures and the Account Books they are actually to maintain. For the Accounts wing it will be necessary to have some experienced staff from the banks or from other Corporations. The staff at the higher level would have to deal with the work of different Sections. Therefore, desirable qualifications and experience would be :—

- (i) Degree in Agriculture ;
- (ii) Experience in Marketing Committee, Agriculture De-

partment, Marketing Directorates etc. ;

- (iii) Master's Degree in Economics ;
- (iv) Diploma of India Institute of Bankers ;
- (v) Diploma of the Corporation of Secretaries ;
- (vi) Service in the Banks, Financial Corporation, Marketing Committees. Experience of import-export, experience of sales etc; and
- (vii) Successful farmers with adequate educational qualifications.

The efficient staff are, therefore, a prerequisite if this Corporation has to play the part it is expected to.

The Food Corporation should involve a package processing-cum-marketing policy such that the farmer gets a portion of the savings of processing-cum-marketing margins and thus is encouraged to sell his food-grains direct to the Corporation.

of grains per acre as compared to 54 mds. of C.273 and 53 mds. of C.306. A dwarf sister-line of this variety, with amber coloured grains and resistance to rusts, has also been developed from the original material obtained from Mexico and its seeds are being multiplied. This line gives an indication of being even more promising than PV-18.

(Continued from page 1)

It is, therefore, necessary to launch a three-pronged attack on the malady of low productivity of agriculture in India :

First ; Government should not only provide inputs like fertilisers, irrigation, better seeds etc. at low prices, but also ensure remunerative prices to the farmers so that their incomes are not depressed when their productivity increases ;

Second ; ways and means must be found to diversify agriculture as also to provide alternative employment to surplus labour engaged in agriculture, which serves as a great drag towards our objective of achieving a break-through in agriculture. Genesis of increase in agricultural production, in all the developed countries, can be traced back to the large-scale shift of population from farming to non-farming occupations.

Thirdly, within the context of resource-limitations, farmers must be trained to take best advantage of their limited resources. In short, the farmers must be fully acquainted with the farm management techniques.

The Bharat Krishak Samaj, which is the national organisation of farmers, can play a notable role in this great programme. In fact the Samaj has on its anvil a number of schemes which can take Indian agriculture out of the present quagmire of lethargy and low productivity. The Bharat Krishak Samaj will not only initiate a number of activities, but has already offered all possible help and cooperation to the National Productivity Council in its programme of increasing agricultural productivity so that these two great organisations can forge ahead to meet the greatest challenge that our agriculture faces today.

Research News

Mexican Wheat

The average yield of wheat per acre in India is very much below the world average. One of the most important factors responsible for low yields in our country is the limited use of fertilisers. However, the Indian farmers are gradually taking to the use of fertilisers in increasing quantities, but have complained of losses in yield on account of the lodging of the crop under high fertility conditions. Therefore, in fertile soils, where plenty of irrigation water is available, the choice of a variety is becoming a limiting factor in increasing wheat production. This limitation in production will be even more acute and widespread in future with the availability and application of larger quantities of fertilisers. What is, therefore, necessary is a variety which would respond well to heavy fertility and will not lodge. Accordingly wheat breeders are laying emphasis on the development of strains responsive to heavy doses of fertilisers that would not lodge.

The Punjab Agricultural University at Ludhiana have evolved a strain of wheat, called PV-18, from

the material received from Mexico through the Rockefeller Foundation, New Delhi. The yield data confirmed the high yield potential of this strain at the University Farm, Ludhiana, in April, 1965. In a demonstration plot sown with this strain, an area of about 40 sq. yards was harvested and the estimated yield of 87 mds. (1 md=82.6 lb.) per acre was obtained. It seems possible that this strain should give a yield of 80 mds. per acre without difficulty. In spite of the application of heavy doses of fertilisers, PV-18 was found to be resistant to lodging. Besides, it is highly resistant to the three rusts which constitute the most serious disease of wheat. In addition, PV-18 has also been found to be highly resistant to loose smut and has also very impressive ears. It attains a maximum height of about 3 feet as compared to 5 feet of C 306 (an improved Punjab Wheat). On account of its high tillering capacity, the yield of *bhusa* (straw) is almost equivalent to that of C306. According to the results of a replicated trial conducted at Ludhiana, PV-18 has given an average yield of 73 mds.

Progress Report of the U. P. Krishak Samaj

The Farmers in this State have gradually come round to recognise the Samaj as their own and which speaks their own voice. A monthly journal under the name of Kisan Sandesh was started from June 1958. Later, from December & January issue 1958-59, the name of the journal was changed to Krishak Vani, which has been continuing since then regularly. This journal, Krishak Vani, has been serving a great purpose in creating a good background. Two special issues, namely Kharif Issue (April & May) and Rabi Issue (September) of the Krishak Vani have also appeared every year.

There was a good drive for enrolling members and organizing branches of the State Krishak Samaj. About 70 Life-members of the Bharat Krishak Samaj, about 500 Life-members of the U.P. Krishak Samaj, and about 5000 ordinary members in the Block Samaj were enrolled.

The Presidents of the districts were nominated under the provisions of the Constitution by the Ex-officio President, Shri Charan Singh Minister of Agriculture, U.P., in April-May, 1964.

On October 9, 1964, there was a meeting of the State Krishak Sabha and comprehensive plans were drawn up after thorough discussions. In the Conference of Bharat Krishak Samaj, held at Bhavaneshwar, State Vice-President, Sri Muni Deo, participated with definite views of the U. P. Krishak Samaj on certain current agricultural topics.

Thereafter a 5-point action programme was issued to the District Presidents for execution. Briefly, it was about organising meetings and propagate the objectives of the Krishak Samaj, quota of enrolling of Life and ordinary members, selecting real village workers for training, etc.

A copy of the circular letter appeared in the Krishak Vani of December 1964.

By now the District Executives have been organised in almost all the districts of the State. Annual Conferences have been held in 16 districts by now. The gatherings and presentation of membership fees to the State President showed unprecedented awakening and enthusiasm among farmers. The purses obtained from some of the districts are given below:—

1. Banda	Presentation of Purses of Rs. 3,001	
2. Hamirpur		
3. Jalaun		
4. Jhansi		
5. Nainital		Rs. 1,073
6. Bijnor		Rs. 1,001
7. Moradabad		Rs. 1,001
8. Agra		Rs. 5,001
9. Mathura		Rs. 10,000
10. Aligarh		Rs. 26,995
11. Etah		Rs. 61,834

The State Krishak Samaj in its meeting held on February 12, 1965, has now formulated some programmes for its execution. They are: (1) Schemes of training farmers by far-

(Continued on page 5)

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