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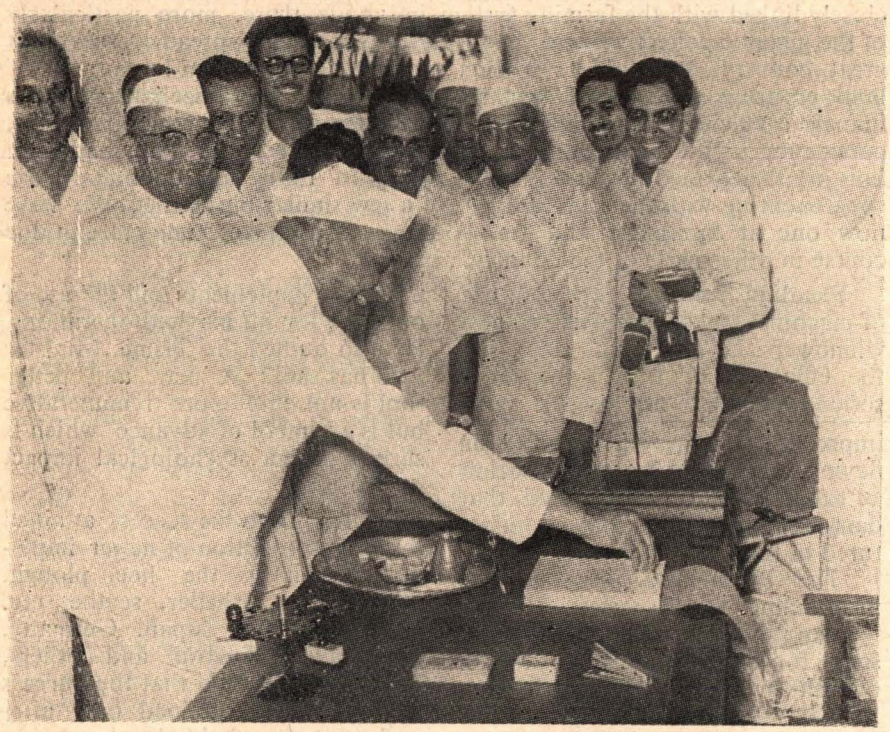

Extremely happy over the steady expansion of the Farm Organisation, BKS President Dr. Panjabrao Deshmukh performs the opening ceremony of Maharashtra State Krishak Samaj office at Bombay

Shri P. K. Sawant, State Minister of Agriculture and President Maharashtra Krishak Samaj; Vice-President, Shri H. G. Patil are standing behind, and on the extreme right is Shri V. V. Patil

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— Adequate Price Incentives for Increased Agricultural Production and Timely Supply of Credit to the Farmer —

Ways and Means to Step Up Output Discussed By

Planning Commision's Panel on Agriculture

New Delhi, October 22, 1960. The Planning Commission's Panel on Agriculture has, after considering the programmes for agriculture in the Third Plan, come to the conclusion that the targets indicated in the Draft Outline are responsible and capable of achievement provided adequate physical and financial resources are made available.

The Panel which met for two days under the Chairmanship of Shri Shriman Narayan, Member of the Commission, has expressed the view that in order to achieve the targets there is need for additional financial allocation for agriculture in the Third Plan.

The need for special attention being paid to measures for increasing the yield per acre, particularly in the case of coarse grains, has also been stressed. It was pointed out that while the national average yield had gone up in the case of foodgrains like rice and maize, there was no marked improvement in the case of other foodgrains.

The importance of ensuring adequate price incentives for increased agricultural production and for ensuring that consumer goods required by the cultivators were available at reasonable prices was also emphasised. The Panel felt that timely and adequate supply of credit to cultivators, as well as improved seeds, fertilisers, iron and steel for agricultural implements would play an important part in stepping up output.

MINOR IRRIGATION

The maximum possible allocation was urged for minor irrigation in view of the urgency of increasing the output of foodgrains in the shortest possible time. It was recommended that tubewells should not be put up by the States in areas with high rain-fall or with a high subsoil water level, because in such areas open percolation wells fitted, where necessary, with Persian wells or pumping sets, would meet the needs of irrigation. The importance of evolving and popularising a suitable crop pattern in areas to be newly brought under irrigation through proper collaboration between the Irrigation and Agricultural

Departments was underlined. The Panel supported the scheme for desilting and reclamation of tanks recommended by the Minor Irrigation Team of the Committee on Plan Projects.

The Panel suggested that tractors of small horse powers which could be used on small holdings should be manufactured in the country. The use of diesel engines for lift irrigation in areas where electric power was not available should be encouraged and diesel oil used for agricultural purposes should be exempted from excise duty and sales tax.

The need to improve bullock drawn implements was emphasised. The Panel felt that there should be quality control over the implements and tools placed on the market to prevent loss to the agriculturists and to the country by the use of inferior types of implements. The setting up of an expert committee to study the magnitude of the problem of soil erosion and to suggest ways of dealing with the problem, was recommended.

SEED MULTIPLICATION

The scheme for seed multiplication through seed farms, to be established at the rate of one per each Community Development Block was examined. A Committee of the Panel which studied this scheme as part of technical programmes was of the view that these farms would be too small to be run economically and efficiently. It suggested that the nucleus seeds should be multiplied on a big scale at one place like a district farm. The seed should be supplied for further multiplication to the existing block farms and to progressive agriculturists. After examination of this recommendation by the full Panel. it was agreed that there should be further discussion of the technical and organizational aspects of the seed multiplication programme.

Intensification of the programme for mass castration of useless bulls was urged by the Panel during examination of the programme of animal husbandry and dairying. Increased allocation for cattle development programmes was suggested. The Panel also felt that more attention should be paid to the improvement of methods of hide flaying, curing and better utilisation of carcasses. It was suggested that dairy equipment should be manufactured in the country.

The Panel also discussed the programme for fisheries. It was recognized that there was large scope for increasing the production of fish in the country, both from inland waters and from marine sources. This would help in earning foreign exchange, apart from improving the nutritive value of the people's diet. It was urged that provision should be made for development of fishing harbours and berthing facilities as well as for refrigerated rail cars and insulated road trucks for transport of fish over long distances.

The programmes for agriculture were examined in detail by three Committees of the Panel. Thakur Phul Singh headed the Committee on Agricultural Production Targets and Village Agricultural Plans ; Sardar Lal Singh was the Chairman of the Committee on Technical Programmes ; and Shri Thakurdas Bhargava, M.P., presided over the Committee on Animal Husbandry and Dairying. The Reports of the three Committees were further examined by the full Panel.

"A new and better tool is a symbol of advance"

Government Awards for Designers of Farm Tools

"During my recent study trip to tbe U.S.S.R., I had occasion to see for myself the vast advances in Russian agriculture that have been rendered possible through machinery", said the Union Agriculture Minister Dr. Panjabrao S. Deshmukh, inaugurating the 3-day second Conference on Production, Distribution and Popularisation of improved Agricultural implements on October 12, 1960, at Kharagpur.

"It has also enabled me to appreciate the fact that their success is closely linked with the farming system in vogue there, more particularly of the gigantic collectives and huge state farms that spread across that great country. It would have been unthinkable to reclaim large tracts of land covering millions of hectares without the big mechanized units managed efficiently and adapted to perform all the farming operations, commencing with the preparation of the waste-land and culminating in hoisting the cleaned produce into the sylos. In India, no doubt, we are experimenting with the establishment of a few similar big farms. We have now one at Suratgarh and we would perhaps have some more in due course in other parts of the country", he said.

Pleading for the increased use of machines such as threshers and winnowers, Dr Deshmukh said that the efficiency of Indian farmer is seriously limited due to his poor tools and implements and the use of bullocks for all his field operations. He also quoted the Prime Minister who has said : A new and better tool is not only more remunerative but is a symbol of advance which is sure to have a psychological impact on the users.

Referring to the success attained by the introduction of newer implements such as the hoe, plough, decorticator, sheller, scythe etc. by countries like Japan, Germany, Yogoslavia, Austria and others, Dr. Deshmukh said that the success in their use was attained only after a close study of the local requirements and after the implements were adapted to these, which method, he emphasised, should also be followed by our engineers and experimental farms which should take up the tests with different improved implements.

It was disclosed at the conference that the Union Government have decided to institute a prize of the value of Rs. 3,000 along with a President's gold medal for bullock-drawn implements and another prize of the value of Rs. 2,000 for hand-tools, including garden tools. The prizes are to be awarded yearly from 1961-62.

For evolving improved agricultural implements eight cash prizes and ten certificates of merit were awarded to successfull competitors on the opening day of the conference by Dr. Panjabrao Deshmukh.

"BKS Members have great faith in their organisation, enthusiasm for work and confidence in their leaders"

Report of American Farmers Team

"Farmers have told us they support Farmers' Forum (The Bharat Krishak Samaj) because it helps them. It provides a platform for discussion and recommendations. It advances a broader knowledge of the condition of agriculture throughout India and the world. It has kept Government aware of the needs of farmers. It assures a major emphasis upon agriculture in the Five Year Plans. It has established a sense of unity among farmers. It builds morale by giving expression to the needs and aspirations of farmers," are the views expressed by the team of American Farmers who stayed in India between November 25, 1959, and February 20, 1960, on a study project jointly sponsored by the Bharat Krishak Samaj and the Farmers and World Affairs of the United States in their report released from Philadelphia, recently.

Referring to the experience gained by the American farmers during their association with the First World Agriculture Fair organised by the Bharat Krishak Samaj in New Delhi, the report comments : "The time spent at the Fair gave us insights which prepared us for a more thorough understanding of rural life in India. The association with village people, who came to the Fair in large numbers, indicated to us what they are thinking about, questions which are uppermost in their minds. Association with others helped us to understand the non-farm people of India. It was encouraging for us to learn that people in all walks of life in India are concerned about agriculture. Farmers and non-farmers are eager to know about American customs, agriculture and reasons for our progress as a nation.

The team comprising Mr. and Mrs. Ralph Salisbury, Mr. and Mrs. George Neff, Dr. and Mrs. G. Edward Marshall, Mr. and Mrs. Milton Maxwell, Mr. and Mrs. Garland Hendricks, Mr. Ralph Olsen and Mr. Ray W. Allen, who had toured extensively in India and met hundreds of farmers and members and office bearers of the Bharat Krishak Samaj units at all levels has reported that they have found their mission of understanding and goodwill to be a helpful experience and emphasised the significance of their findings in the struggle for world peace and brotherhood through mutual understanding.

The 19-page report gives a complete thumb-nail picture of rural India, its problems, hopes and aspirations seen though the eyes of the American farmers. Among the subjects discussed in the report are the Role of Farmers' Forum, the First World Agriculture Fair, Village Life in India covering population, traditions, economic conditions, women ; Health and Sanitation; Education covering interest in education, variety, needs; Agriculture covering research and experiment, size of farms, assets of farmers, markets and prices, credit, land ceilings, special needs of farmers ; Agriculture and industry, Farmers and Cooperatives, Farmers and Government, Development Schemes, Foreign Relations, American Aid, Incentives and Objectives.

Rewarding features of the tour sponsored by the Bharat Krishak Samaj in India, according to these American Farmers were in the terms of personal benefits, friendship and goodwill, an understanding of India and practical helps.

Speaking of Indian farmers, the American team has expressed that most farmers appear to be happy farmers, even though they are poor and are subject to great insecurity because of their poverty and the uncertainities of nature where for four months they get too much of rain and for eight months get practically none.

Expressing their gratitude to the President and other leaders of the Bharat Krishak Samaj, the American team has expressed that these leaders of the Indian farmers gave generously of their time and energy in every way possible. "Their influence and their effort was in evidence every place we visited", say the American farmers. They also add that they found that members of the Farmers' Forum have great faith in their farm organisation and enthusiasm for their work because they have confidance in these leaders.

Commenting on the influence of the Bharat Krishak Samaj on the Indian Farmers, the report says : "Though it is a new farm organisation, begun in 1955, Forum has reached into all areas of India with its membership. Support comes from a large number of farmers everywhere.

"We are encouraged by plans for extending its work into more blocks and villages, drives for new members, the large number of farmers who attend meetings, and the frankness and freedom of discussion in meetings. These factors indicate that this organisation has sound objectives, active leadership, and is a dynamic movement in the development of India.

"We believe that the Fair has challenged India and encouraged her to make efforts to increase food production. While some exhibits at the Fair were too complicated for illiterate cultivators to understand well, the intellectuals found them quite simple, and we believe the excellent picture story conveyed good ideas to all who took time to observe."

Expressing pleasure on what they have learnt about American aid to India the report of the American farmers say : "All over India we have been made to feel humble and proud about the United States of America because of so many expressions of sincere gratitude for what America is doing for India. While receiving such thanks every where we have observed assistance rendered through TCM

BKS Commodity Committees Recommendations

At the time of the 10th All India Farmers' Council Meeting held at Bhopal from September 15 to 18, meetings of the Bharat Krishak Samaj Commodity Committees on Cotton, Oilseeds, Fruits and Vegetables, Animal Husbandry and Dairying were also held. The meetings were largely attended. The recommendations of the committees are given below :—

Oilseeds Committee

Resolutions

1 "This Committee recommends that a record of reliable growers of genuine seed be maintained and that seed should be purchased by the Government from them on a subsidised system. The storage and distribution should be entrusted to the district cooperative banks or marketing societies and that arrangements for the distribution of seeds up to the village level should be made through local co-operatives".

2 "The Committee feels that the small farmer cannot take up plant protection measures and it therefore recommends to the Indian Central Oilseeds Committee to take necessary steps to undertake control measures against diseases and pests through its own machinery for some period, the charges for these operations being recovered from the farmers alongwith taxes and cesses".

3 "The Committee views with great concern the high rise in prices of insecticides and pesticides, like Endrex, and requests the Government that arrangements should be made to supply these to the farmers at reduced rates by proper subsidies".

4 "The Committee feels that there is great scope for devising implements for harvesting and other operations in oilseeds and recommends that research may be undertaken in this regard, and suitable implements already devised may be popularised among the farmers".

5 "The Committee recommends that the Government may be requested to investigate into the storage of oilseeds, and emphasises that there is an immediate necessity for devising methods suitable for storage, both of large and smaller quantities of oilseeds by the farmers".

6 "The Committee recommends that the Government should be requested in the interest of production of castor seed that waste lands and forest lands available may be leased out for a period of one to three years for the cultivation of the crop.

7 "The Committee notes with grave concern that the crops of seasamum and safflower are deteriorating greatly and that there is a necessity for investigation into the causes of deterioration and to undertake research on the nutritional and varietal side of these crops. It therefore requests the Indian Central Oilseeds Committee to take immediate action in the matter and also to find out as to why these crops are neglected and to take suitable measures to induce the farmers to take to cultivation of these crops.

8 "It is felt that in the case of all oils, including groundnut, an investigation into the possibilities of the use of the small expeller be taken up with a view to decentralisation as well as the local utilisation of resources. The Committee strongly recommends that the Indian Central Oilseeds Committee should go into the matter and particularly investigate the possibilities of the small expellers being worked by cooperative societies".

9 "The Committee learns that the Municipalities are charging a heavy octroi on the oilseeds in all the States and that this is working adversely on the prices of these commodities, badly effecting the producers. It therefore requests the Indian Central Oilseeds Committee to look into the matter and to obtain relief in this regard to the producers from the various local bodies of the respective States".

Fruits & Vegetables Committee

Resolutions

1 The Committee felt that the Government should give due importance to Horticulture (Fruits and Vegetables). It felt that development of Horticulture would help in bridging the gap between our needs and supply of requirements of balanced diet.

2 The Committee recommends setting up a Board or a Committee on the lines of Commodity Committees of the Government of India for Horticulture.

3 The Committee felt that intensification of Research is absolutely necessary and also felt that the Research in whatever form or

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in the form of equipment for research and experiment centres, schools, health projects poultry farms, food for the needy, and personnel working with agriculturists."

Recommending the future pattern of U.S. agricultural aid for India the report recommends the following ways to America :

I. Continue and strengthen its TCM programme, maintaining high calibre personnel and practical helps in know-how and equipment.

II. Assist in improving highways and transportation, at least with technical knowledge. A more rapid movement of cargo and more efficient system for traffic is imperative in a country so thickly populated.

III. Continue assistance in research and extension, making certain that the practical demonstration method is used. Indians need demonstration and they respond to it.

IV. Assist in the production of improved implements, including small tractors that can be manufactured in India at low cost, serviced by trained mechanics and operated economically.

V. Help in providing good seeds.

VI. Expand exchange programmes to provide person-to-person contacts, with emphasis upon selecting the real farmers for farmers exchange programmes and proper persons in other fields.

VII. Aid programmes should be on a long-range basis and geared into fit India's Five Year Plans of Development.

quantum existing at present does not reach the farmer. Rational changes in extension are also, therefore, necessary.

4 The Committee recommended the following subjects for being investigated :—

(*a*) Soil requirement of Sapota, Lemon, Orange, Mango etc.
(*b*) Water requirement of Fruits and Vegetables.
(*c*) Fertiliser requirement of Fruits & Vegetables.
(*d*) Detailed economics of Cultivation district-wise.

5. Soil analysis facilities may be provided on larger scale and soil charts prepared.

6 Vegetable time-tables should be fixed on regional basis.

7 Seminars on Fruits of importance should be sponsored region-wise.

8 Fruit specialists should be appointed for each of the more important fruit crops and they should not be transferred to posts entirely different. Regional research stations and sub-stations should be provided for every twenty thousand acres and five thousand acres, respectively. The former should carry out breeding programme and the latter agronomic research.

9 Amounts of loans for orchards should be enhanced and the procedure for getting them simplified and speeded up.

10 Shortage of trained *malis* may be overcome by providing training facilities by way of short courses. Some kind of training programme for garden labourers also may be undertaken.

11 For seeds and nursery the Government should put through the programme of Registration of Seedmen and Nurserymen.

12 Sales-tax on seeds, etc. now levied in certain States, should be abolished. Preservation and canning equipment may be kept at community training centres or at BKS Units or Youth Clubs to make producers preservation conscious at least for domestic consumption.

13 Similarly producers cooperative canneries and preservation factories should get adequate financial and technical assistance.

14 The Government, and particularly the Central Warehousing Corporation, should construct large sized cold-storage and air-conditioned godowns with a capacity of 50 to 100 wagonloads. These should be made available to producers so as to combat sudden gluts in the market due to over supply and also to prolong the availability period of vegetables and fruits.

15 The Government should seriously consider the matter of providing suitable insulated ventilated wagons and special trains at reduced freights for speedy and cheap transport of Fruits and Vegetables.

16 The Bharat Krishak Samaj should take the responsibility of forwarding any specific complaint about transport to proper authorities.

17 The Railways should permit the producers or their representatives to keep a watch at the loading and the transhipment centres to avoid pilferage and rough handling.

18 Adequate research on Plant Protection methods should be sponsored. Simple short term practical training in Entomology and Plant-protection should be provided.

19 Separate Directorate for Horticulture should be set up in each State.

Animal Husbandry & Dairy Committee

Resolutions

The Committee made the following recommendations :

1. The Committee recommends that for promotion of improved pastures for cattle rearing, a 'Pasture Improvement Board' should be constituted along with the Animal Husbandry Board at the State Level. Furthermore, it also recommends that non-officials should have predominantly greater representation on this Board.

2. The Committee recommends that in view of the rapid expansion of city and town milk supply scheme, a serious situation is fast developing on account of preference shown to buffalo milk. Since fat percent is usually taken as a standard, the milk of cow does not find its due place in these milk schemes. Consequently, cows are being replaced by buffaloes and progress of cow breeding is thus seriously threatened. It is feared that if this state of affairs continues, the cow economy in Indian Agriculture will have no place.

In view of this the Committee strongly recommends that the fat standard for milk should be so fixed as to find market for cow's milk in these milk supply schemes. One of the measures to promote supply of the cow's milk, could be the introduction of standardised milk.

3. The Committee is of the opinion that it has become increasingly difficult to procure pure *Ghee* in the market on account of (a) scarcity of milk and high rate of *Ghee* production (b) unhealthy competition between Vanaspati and *Ghee* on account of adulteration of Vanaspati in *Ghee*. The Committee, therefore, recommends that rapid steps should be taken to improve our livestock so as to raise the production of milk. This could be achieved by selection of good cattle and eradication of useless ones. A serious effort should also be made in the direction of improving the standards by (1) Breeding (2) Feeding, and (3) Management practices. Intensive propaganda should be undertaken in selected places for the purpose.

As regards the adulteration of Vanaspati in *Ghee*, the Committee strongly feels that serious efforts should be made for colouring and flavouring the Vanaspati. The Committee is aware of the reports that suitable colour and flavour are not available. The Committee however, feels that National Dairy Research Institute and other research institutes should make concerted efforts to solve the problem.

Cotton Committee

Resolutions

1. The Committee recommended that in view of the difficulties of agriculturists to get fertilisers in time, arrangements should be made to give them suitable advance from the cooperative societies to purchase the fertilisers in time.

2. The Committee felt that there was urgent need for the improvement of the present day bullock drawn agricultural implements used

(Continued on page 8)

President's Letter No. 7

The First Conference of Research Workers on Pulses

The two important points which I could not deal with in my previous letter were the following :

The holding of the First Conference of Research Workers on Pulses and a visit to Sorana in the Saharanpur District where 4 Japanese farmers are engaged in actual cultivation since the last year. Both these, in my view, are important events for the farmers.

As the world's largest vegetarian country, we have to depend a great deal on pulses for providing us nutritious food as compared to any other country where meat is eaten by everyone and in much larger quantities than we do in India. For most of us this extremely important crop occupies a subsidiary, if not an insignificant place because, it constitutes only a small portion of our income and intake. I feel sure, most people hardly realise that the acreage under pulses in India is next only to acreage under rice, our biggest crop by far. You may recollect that our paddy cultivation spreads over 80 million acres of land, whereas pulses are cultivated on as many as 59 million acres. But while our rice production is about 27 to 30 million tons, in 59 million acres the production of pulses comes only to about 12 million tons. I would not like to go into the details of the question but would like simply to draw the attention of our members to the need of paying more attention to larger production of pulses both for deriving greater financial benefit from its cultivation by producing more yields per acre and also to realise its importance in our life and economy. As a result of this conference, I hope it would be possible to make certain simple suggestions for the benefit of the farmers.

The only suggestion I would like to make is, not to treat the pulse crop as unimportant and, therefore, not to deny it certain amount of manures, fertilisers as well as water, where it may be available. The second important suggestion I would like to make is, to grow wherever possible some pulses crop like the U. P. *Moong No.* I, which I am told, matures in 60 days, or certain other pulses like *Urad, Moth* etc. While most of our yields of agricultural crops per acre are extremely low, it is, I believe, the lowest in the case of pulses because, for the production of one ton of pulses we require more than 5½ acres of land. I feel convinced that there is much room for improvement with little effort and this at least for two or three important reasons. Firstly, quantity for quantity it brings more money. Secondly, it is a leguminous crop which fertilises the soil and thirdly, it is bound to respond to any special attention like more manures, fertilisers irrigation etc., since these have rarely come its way.

Revealing Experience at Sorana

The visit to a village in Saharanpur district, where four Japanese farmers are doing actual cultivation side by side with other farmers, was a revealing experience. These four farmers have been in India for the last 4 or 5 years and have by now acquired admirable proficiency in speaking in Hindi. This should not be a new subject to the readers of the Krishak Samachar, because I had given some facts about the crops produced by these farmers even before, and had also stated that the report of their last year's cultivation was a very interesting document, which should be read by paddy growers if not by other farmers also. What has been done this year, however, is still more impressive.

This year they took 3.6 acres of land on lease from another farmer and on this land they have already reaped two crops and the third one is about to be harvested. The first crop was of paddy and they obtained 55 mds. of paddy per acre. This was followed by wheat which gave them 25 mds. per acre and the third crop standing in the fields is estimated to give them 70 to 80 mds. of paddy per acre. It is obvious that each acre of land tilled by these farmers would yield not less than 130 mds. of paddy plus 25 mds. of wheat. If we calculate the income at Rs. 12 per md. for paddy and Rs. 14 per md. for wheat, the total income would be Rs. 1,560 for paddy and Rs. 350 for wheat, or Rs. 1,910/- per acre. The details of the expenditure involved are all kept with great care and would be available in due course. But even assuming the cost is high, it is apparent that if we could put under such intensive cultivation even a very limited area of our lands, a definite yield of even 40 md. of paddy and 15 mds of wheat could make our country surplus in foodgrains.

YFA's Great Achievement

I am sure our members will be interested to know that the Young Farmers' Association has been able to send two groups of Young Farmers—men and women, to Europe and Japan. This has been done on the basis of mutual exchange. The participants have had to pay their own cost of travel. This is, however, a great achievement on the part of the Young Farmers' Association and the credit for successfully arranging this programme goes to our young Secretary of the Association, Shri Nirmalendu Basu.

A.A.-I. Bee-Keepers' Association

The All India Bee-Keepers' Association, of which I have been the President for some years, is now working in the fullest cooperation with the Bharat Krishak Samaj. The Samaj, has shown its readiness to help it to whatever extent it may be possible. The late Shri R. N. Muttoo, who was really the founder of this Association, had to encounter many difficulties, but kept the Association alive at much cost and worry to himself. I am sure, it is a very useful activity for promoting better agriculture, and it was with this view that I took interest in its affairs. I am glad to say that with the sympathetic support

of the Khadi and Village Industries Commission, we will be able to put the organisation on its legs and serve the farmers through it.

BKS Office in Bombay City

I am glad to report that through the help of one of our prominent members of the Governing Body, Shri V. V. Patil and his father, we have been able to open an office for the State Krishak Samaj of Maharashtrain the City of Bombay itself. I performed the opening ceremony in the presence of Shri P. K. Savant, the Minister of Agriculture, who is now the President of the Maharashtra Krishak Samaj. The function was attended by the Deputy Minister of Agriculture, Shri Vairale, Shri Shamrao Patil, Minister for Prohibition and others.

Reclamation Work in the Flood-devastated Orissa

I also visited Orissa, which has been devastated by floods on a very vast scale, causing immense misery to thousands and lakhs of families of the rural people. Some of the most fertile lands are covered with sand and the State Government have framed a scheme for reclamation of a portion of these lands on a fairly large scale.

BKS Memorandum Forwarded to the Planning Commission

The memorandum on behalf of the B.K.S., which was approved by the Council Meeting at Bhopal, was finalised by the office and forwarded to the Planning Commission and members of the Agricultural Panel appointed by Shri Shriman Narayan, Member (Agriculture), Planning Commission. I was glad to find that almost every suggestion made by the members in the course of the discussion of the memorandum has been incorporated in it.

Kharagpur Conference on Agricultural Engineering

An important conference on Agricultural Engineering, second of its kind to be held so far in India, was held at Kharagpur on the 12th of this month. As is well known now, the question of better implements for the farmers had been neglected so long. I hope this Conference will give a fillip to bring about considerable improvement in the situation.

Transplanting in lines

Trying to minimise air travel on consideration of health and reduction of strain, I happened to travel from Delhi to Patna, Calcutta to Bhuvaneshwar, Bhuvaneshwar to Khargpur, and Kharagpur to Akola in Vidarbha. Although more than half the time was night time, I was able to observe the growing crops on an extensive scale in the States of U. P., Bihar, Orissa, Madhya Pradesh and Maharashtra. I also observed the crops between Bombay and Poona sometime ago. I was immensely pleased to see that almost every field between Bombay and Poona was transplanted in lines. So was the case with the crops growing in Bihar and some portion of U. P. as well as Orissa and Madhya Pradesh. This was quite an exhilarating experience for me because this itself shows that Japanese Method has penetrated deep down to the farmers in remote places. I think nobody will controvert the statement that before we preached the Japanese Method, transplanting *in lines* was unheard of. Now, as soon as farmers resort to lines they are able to use small and inexpensive Japanese weeder. This by itself improves the condition of the crops considerably. Secondly, weeding becomes very economical because its use saves full five labourers. Thirdly, it is also apparent that their has been certain reduction in the seed-rate although there is, I think, still much room to reduce it further even up to 50% almost everywhere. I think the farmers are still tempted to put not less than half a dozen seedlings at each spot whereas, all that need be put is only 2 or 3. In no case this should exceed 5. If this one single item is taken up by Extension people little more vigorously, I have no doubt there would be a considerable saving in seed and much improvement in the yields per acre. When we were in Bhopal, a missionary who has been doing Agriculture for a large number of years amongst the tribals, gave his experience that in sowing every crop in lines the spacing should not be less than *18 inches*. I was glad to learn from the members of the Krishak Samaj assembled in Akola on the 14th March that this was being done almost by every individual farmer. It was clear, however, that this was not uniformally so years ago. But here also, I believe, there is room for extending the spacing and reducing the seed-rate.

The Research Committees Meeting in Bihar

I addressed the Research Committees Meeting in Bihar and I was impressed by the discussions that were held there. It is apparent that this method of dealing with research at a regular Annual Conference where a fairly large number of farmers are present has been very useful to the State of Bihar firstly, in bringing greater and up-to-date knowledge to all concerned of what exactly was being done by each, secondly a better understanding of the problems and the needs of the farmers as well as in reducing duplication and waste of effort. I wonder if every State does this sort of thing, but if they do not do, it might be worthwhile doing so.

I also addressed the executive of the Bihar Krishak Samaj when I visited Patna on the 8th October, 1960. The Bihar Krishak Samaj has framed an excellent programme of work for the next few months and I hope they will fulfil it.

An Important Vehicle of Spreading light

It is highly gratifying that Krishak Samachar appears to be read carefully and regularly by almost every member of the Krishak Samaj who gets it, and, since every life member is entitled to get it, it is apparent that Krishak Samachar has become an important vehicle of spreading light and understanding of better farming in the whole of the country. It is also apparent that what the Krishak Samachar tries to impress upon the farmers receives their serious and immediate consideration.

Paucity of fertilisers

Everywhere there is a complaint about paucity of fertilisers. I am afraid that with all our best efforts it is not possible to meet even 50% of the demand made by the State Governments. We will continue to make every effort to supply larger quantities of fertilisers and there is no doubt that for greater yields fertilisers are absolutely essential. But so long as we do not have sufficient of them, we ought to make every effort to secure every possible bit of manure and put it into the soil, whether it is cowdung or compost or night soil or urine. I was very happy to learn in Bihar that several National Extension Blocks in that State had achieved the admirable target of utilising fully all the night soil and urine in the villages of the blocks. Even if we ultimately get all the fertilisers that we want, this habit of utilising the manures, compost, night soil and urine in the fields is sure to increase the yields further and would not in any way be harmful. So long as the fertilisers are not available, we must do everything possible to add the maximum quantity of manures we can get hold of. I was also glad to observe that growing green manure plants in Paddy areas of Orissa was taken up on a good scale.

Lastly, I would like to reproduce, elsewhere in this issue of Krishak Samachar, a news-item published in Hindustan Times of the 15th October 1960, on Bacterial Fertilisers and the good effect it has on yields. I am doing this both to draw the attention of farmers to this important item as well as of the research workers, the State Governments and the various people working in the field of extension.

Panjabrao Deshmukh

Cotton Committee Resolutions

(*Continued from page 5*)

in cotton culture. It recommended that immediate attention be paid in matter of research and development of simple agricultural implements for sowing, dibbling, spreading manures, etc.

3. The Committee recommended that in view of the importance of plant protection measures to combat the damage done to the cotton crop by insects, necessary insecticides and equipment should be made available to the growers at the proper time and at subsidised rates. To ensure this, it recommended that one plant protection unit should be made available for each one lakh area of cotton. Furthermore, it was felt that these units should also be made available to the Gram Panchayats and cooperative societies. The Committee was informed that the present day plant protection equipment was too heavy for the Indian condition both in the matter of weight and working. It was therefore suggested that research should be conducted to develop plant protection equipment to suit the Indian needs.

4. The Committee recommended that "*Dahya*", a disease, was causing damage to cotton crop in Khandesh. It was suggested that it will be easier to control this disease if a watch was kept on the foci of the same, so that it could be controlled and its spread checked. It was suggested that a variety resistant to '*Dahya*" be evolved as early as possible.

5. The Committee recommended that a regional laboratory be set up in each region producing at least two lakhs of bales of cotton for testing the fibre and the technolgical properties of cotton so as to assess the quality of cotton.

6. The Committee recommended that the new American cotton strain A. 519, at present being grown in the East and West Nimar districts of Madhya Pradesh, should be classified in the category Cambodia (C) instead of Buri American as at present. It was suggested that similarly Badnaver 11 C.E.I-4-21 should also be classified under Cambodia (B).

7. The Committee recommended that in view of the importance of price of cotton to growers, the same should be fixed before sowing the crop.

8. All the cotton legislations namely Market Act, Cotton Transport Act, Cotton Control Act, Pest Control Act and Ginning and Pressing Factories Act made by the Government to guard the interest of the farmers should be strictly enforced. It was felt that it would be in the interests of work that the enforcement of these legislation should be entrusted to one department.

9. It was noted that the ginning and pressing factories often combined to make a pool so as to exploit the growers in order to increase the ginning charges. In this connection the cultivator had often to go to a long distance to get the cotton ginned and pressed and therefore a number of factories lie idle. It was suggested that suitable amendment may be made in the Ginning and Pressing Factories Act to prevent the formation of such ginning pool and idle factories sharing the profits. It was also suggested that cooperative ginning and pressing factories may be started by the growers. The Cotton Transport Act should be enforced strictly in the matter of movement of cotton by trucks.

10. The Committee recommended that since marketing was a major bottleneck in ensuring the proper return to the cultivator for his produce, cooperative organisations, not only for marketing, but for setting up ginning and pressing factories also should be set up. These should consist of growers.

11. The Committee recommended that the Village Level Worker should often visit the fields personally and send a fortnightly report to the Block Development Officer regarding the incidence of pests and diseases. The Committee also recommended that an agricultural Graduate should be a Block Development Officer.

Farming must be considered as a profession of respect

Economic Price for Agricultural Produce Should be Guaranteed

BKS views placed before the Planning Commission

The Planning Sub-Committee of the Samaj had prepared a Memorandum on the Third Five Year Plan for submitting to the Agricultural Panel of the Planning Commission. The Memorandum was thoroughly discussed at the Tenth All India Farmers' Council Meeting at Bhopal on the 16th & 17th of the last month and was unanimously accepted by it. Important suggestions made by the Council have been included in the Memorandum. The Memorandum has been submitted to the Agricultural Panel of the Planning Commission. The Secretary, Shri K.D. Sharma, attended the meeting of the Panel on the 16th & 17th of this month and placed before the Panel some of the most important recommendations in the Memorandum. The important points which were strongly emphasised by the Council are given below :—

1. Agricultural production should be considered as business or a commercial enterprise that is operated for profit and policies and programmes should be developed to make the enterprise more profitable. Farming must also be considered as a profession of respect. Unless Government understood this and planned agriculture accordingly, it would not be possible to achieve much success in attaining the targets.

2. As there is not much extra land for being brought under cultivation, every effort should be made to increase the per acre yield.

3. All Agricultural research must be geared to increasing agricultural production.

4. The spices and other plantation crops grown in Kerala and parts of South India are very important from the point of view of gaining foreign exchange. Considerably more attention should be paid to the growing and marketing of cardamum, ginger, pepper, turmeric, rubber etc.

5. Diseases affecting cardamum, pepper, ginger and banana should be tackled at an early date.

6. Specific complaints were made with respect to the prices of rubber which the growers get. The loan for clearing land or replanting of rubber were extremely inadequate. Equipment for spraying should suit the crops of the area.

7. More attention is needed to cashewnut, coffee, coconut and arecanut also.

8. The Bharat Krishak Samaj should be the prime agency for multiplication and distribution of seeds.

9. The Community Development is said to have brought a revolution. It is to an ordinary eye not easily observable in many places. It is difficult to find that an impact of Community Development has really brought about any change in the psychology of the people or there is any outward sign of any substantial improvement. A group of leaders should undertake the examination of this point by touring at least about 100 blocks and comparing the situation in the non-block areas. The first thing we should do is, after going through a block which has completed its life to see if there is anything worth notice. It would be worthwhile to make observations on the following:

(i) any perceptible differences in agronomical practices and yields of crops ;

(ii) any perceptible increase in the income of farmers ;

(iii) counting the manure pits ;

(iv) arrangements for collection and utilisation of human waste ;

(v) the number of new houses constructed during the operation of the National Extension Service apart from the buildings constructed by Government or with Government aid, etc.

10. Integration of the Community Development staff in the Agriculture Department is absolutely necessary as suggested by the Second Indo-American Team, many Members of Parliament and the Minister for Food & Agriculture. Co-operation also, at least at the Central level, should be a part of the Department of Agriculture.

11. In respect of education, there should be large number of short courses and refresher courses started through the agency of Bharat Krishak Samaj, Young Farmers' Association and Gramin Mahila Sangh. Substantial provision should be made for this purpose. There should also be Correspondence Courses managed by all Agricultural Colleges in the country. Only Agriculture Graduates with practical background and persons with good grounding in agriculture should hereafter be appointed as Block Development Officers and V.L.Ws., respectively. There should be Folk Schools with agricultural bias.

12. There is need for introduction of Agricultural education at various levels and making a specific provision for this purpose. At the present time it is nobody's concern with the result that there is no bias in favour of agricultural education.

13. Difficulties in getting spare parts of tractors cause very considerable damage to the farmers and agricultural production. The Bharat Krishak Samaj presses for getting import licences for spare parts as well as the distribution of diesel oil free from excise duty.

14. There should be standardization of sizes of spare parts of the tractors and other agricultural implements so that maximum number of spare parts may be interchangeable. At the present time people have very often to use out-sized or under-sized parts which damage the machines.

15. The Bharat Krishak Samaj should be entrusted with the task of distribution of tractors and other farm equipment. This should be the chief agency for the distribution of improved implements as well as their manufacture through the co-operatives.

16. There is need for establishment of rural industrial estates for manufacture of various kinds of implements on small scale basis. They will improve the craftsmanship in villages and would be of very great help to people in their spare time. It should be seen that the local technicians like the village carpenters and the blacksmiths are given preference and encouraged.

17. Arrangements should be made to provide a mobile unit in every block for soil testing. This will cost only one lac of rupees per block.

18. There should be a vegetable seed farm in every State for the production of disease-free genuine seeds and make them available at reasonable prices.

19. Large number of tube-wells should be dug in water-logged areas.

20. Irrigation is vitally important in any programme for increasing food production. No effort should therefore be spared to provide as much facility as possible to the farmers in this matter. Preferences should be given for minor irrigation projects as they cost less and give immediate results and are more profitable.

21. There should be irrigation and electricity supply schemes for every 500 acres of land.

22. Highest priority should be given to the rural electrification, and its supply to industries should be the second priority.

23. In order to solve the problem of useless cattle, the State Governments may be asked to revise their legislation regarding ban on their destruction. Castration of sub-standard bulls should be rigidly enforced. Mobile dispensaries should be provided until a large number of dispensaries and hospitals are opened in rural areas.

24. Intensification of warehousing arrangements should be made so as to have a big enough warehouse in every block.

25. Provision of refrigerated vans on a much larger scale should be made and adequate cold storage facilities provided to tide over glut periods, extend the availability period and stabilise prices of fruits and vegetables.

26. There should be a scheme to expedite connecting rural areas with main cities and having feeder roads so that by a particular year every village in the country would be connected. There is tremendous demand on the part of the village committees for roads and they request priority for this even over education. This is natural because apart from convenience this helps the farmers in disposal of their goods and obtaining better prices.

27. Improvement of land records which are in many places highly defective, needs looking into.

28. There should be large-scale research on cost of production.

29. Cooperative credit and marketing are in the doldrums. This requires very careful attention and quick action.

30. Of all incentives for greater agricuture production, guaranteeing of economic price for agricultural produce is the greatest. In fact the success of our efforts to increase food production will largely depend upon this. The economic price be fixed reasonablv in advance of the sowing of the crops concerned.

31. Grading programme should be strengthened and introduced at the farmer's end in order to encourage him to produce better crops and also to help him to get the extra income resulting from grading.

32. The National Agricultural Cooperative Marketing Federation should be entrusted with distribution of fertilisers, foodgrains, insecticides etc. Unless there is central supervision and control, the co-operatives in various places are not likely to function properly nor popularise use of fertilisers and insecticides.

33. The observations made by Dr. Katju, Chief Minister, M. P. with respect to the effect of low ceiling should receive proper consideration. The Bharat Krishak Samaj has never opposed ceilings on principle but has always urged that the law of Inheritance, being what it is, if the ceilings are placed too low, it will lead to large-scale fragmentation of holdings affecting agricultural production very adversely.

34. The Bharat Krishak Samaj should have its accredited representatives on all cooperatives, Panchayats, social welfare organizations as well as industrial bodies dealing with agricultural implements and machinery.

35. The Bharat Krishak Samaj representatives should find place on all Agricultural Commodity Committees and other bodies appointed by the State or the Central Government. The Government, both at the Centre and the States should help Bharat Krishak Samaj for holding periodical crop-wise conferences of progressive growers and members of the Bharat Krishak Samaj. There should be a proper scheme worked out for this purpose.

36. Apart from the Social Welfare Board, the energies of the village women should be utilised for implementing the women's programmes. Suitable programmes in conjunction with the Gramin Mahila Sangh should be worked out and adequate funds be made available for their implementation.

37. There is need to emphasise proper supply of drinking water as well as housing in rural areas.

38. There is also need to popularise cow-dung gas plant in the rural areas which should be done even if a small subsidy is needed.

Research News

SUGARCANE RESEARCHES

Under the aegis of the Indian Sugarcane Committee, researches on Sugarcane are carried out on varieties, manures, cultural and irrigational practices, control of weeds and pests & diseases, implements & tools used for sugarcane cultivation, gur manufacture etc., at the various sugarcane research stations and sub-stations in the country. The important recommendations of the results of research on the above aspects are given below for the guidance of the cane growing community which they can usefully translate in their actual field practice.

Punjab : The sugarcane plant showed a higher protein synthesis in the foliage when nitrogen was applied to the crop and its absorption was still higher when it was applied in full dose of 100 lb. N. per acre in soil alone. The absorption of calcium was also higher under nitrogen application, but nitrogen application showed reverse effects on the absorption of potassium. Potassium showed antigonistic effects on the absorption of calcium and this was further accentuated by the decreased uptake of C_a under NPK combination, as compared to nitrogen alone. Out of half a dozen varieties analysed, considerable variations in their total nitrogen and total sugars in the foliage were observed. Co. J. 39 had the highest percentage of total sugar (8.262), whereas CO 312 showed the least (5.302). Low percentage of soluble nitrogen and total sugars in the foliage of Co. 312 may be associated with its comparatively greater susceptibility to frost. Co. 312, a predominantly drought resistant variety showed lesser number of small sized stomata, greater cuticle deposition in comparison to Co. 453, a variety with greater water needs. The varieties Co. 453 and Co. 617 which are comparatively resistant to the incidence of top borer possessed greater dry matter, ash and silica contents and low percentage of total nitrogen in their foliage than Co. 312 and Co. L.9 which are comparatively susceptible varieties. Pyrilla resistant varieties also showed a similar trend with regard to these characters.

Andhra Pradesh : Planting P_2O_5 treated short crop setts appeared to induce better juice quality of the crop raised from such material than the crop raised from short crop setts without such treatment. The influence of nitrogen either alone or in combination with other nutrients was most dominent on all aspects of plant growth as well as its composition. Nitrogen induced better tillering and later a greater rate of elongation throughout the growth period than either phosphoric acid or potash. A gradual fall in sheath moisture with age was recorded, being more prominent in the absence of nitrogen. Increased doses of nitrogen, and to a lesser extent of potash upto 200 lbs. K_2O per acre, resulted in increase of sheath moisture, whereas phosphoric acid tended to exercise the opposite effects. Increased doses of nitrogen, particularly from 0 to 100 lbs. Nitrogen per acre resulted in an increase in nitrogen content but depression in the phosphate status of leaf. Only the lower dose of 100 lb. P_2O_5 per acre tended to show a slight rise in the leaf phosphate over control, while 100 lb N as also 200 lb. K_2O per acre showed increased leaf potash over the corresponding controls only in the earlier stages of growth. Nitrogen in leaf showed a gradual fall from August to October, whereas phosphoric acid and potash tended to gradually increase upto September with no marked change thereafter. Periodical juice analysis revealed a depression in sucrose and purity at 200 lb. N level while potash at 200 lb. per acre indicated a slight beneficial effect on the quality contrast to a corresponding depressing effect by phosphoric acid. Increased doses of nitrogen markedly reduced arrowing while potash seemed to induce higher arrowing.

SUGARCANE CHEMISTRY (1957-58)

Uttar Pradesh : Maximum uptake of Nitrogen was observed in Ammonium Sulphate treated plots followed by Ammonium Chloride and highest uptake of Phosphoric acid was seen in ground-nut treated plots. In the long term NPK trials, it was again observed that the introduction of green manuring improved the fertility status of the soil. On the basis of the chemical analysis of cane juice, Co. 851, Co. 1046, Co. S. 541 and Co. S. 560 seemed to be most suitable from sugar manufacturing point of view. The average gain of sugar per cent cane for the varieties Co. S. 321, Co. S. 416, Co. S. 443, Co. S. 510, Co. S. 514, Co. S. 526, Co. 421, Co. 453, Co. 846, Co. 859 under autumn planting over spring planting ranged from 0.32—0.33 units. In the Western tract of the State 32 milling tests with 9 varieties carried out showed that Co. S. 515 gave the best sugar per cent in November, Co. S. 514 in December and Co. S. 245 in January whereas Co. S. 321 remained at the top in February and March. In the milling tests carried out in Eastern tract, Co. 416 gave 11.71 sugar per cent cane in November in Eastern range and 13.21 per cent in the Mid-Eastern Range.

Punjab : Amongst the early varieties, Co. J. 37, Co. J. 42, Co. 842 and Co. 886 at Jullundur and Co. J. 32, Co. 703 and Co. 737 at Gurdaspur were found to be rich in sucrose contents. Nitrogen was found to have a delaying effect on the maturity of cane, while phosphorus and potassium did not affect it either way. The leaf tissues of the late and heavy yielding varieties, viz. Co. J.39 and Co. 453 were found to be richer in nitrogen, phosphorus and potash than those early and low tonnage canes (Co. L. 29). The nitrogen content in the leaf tissue at an early stage of the growth indicated a positive correlation with the yield of cane. Mill tests conducted with 'boron' sprayed cane in Phagwara Sugar Mills revealed that there was no beneficial effect of boron on sugar recovery in the case of Co. L. 29 and Co. 312 whereas Co. 453, a late maturing variety, reacted very favourably giving an additional recovery of 1.59 per cent as compared to unspared cane.

BETTER SUGAR CANE

The introduction of hybrid canes in India evolved at the Sugarcane Breeding Institute, Coimbatore

and rationalized at the various Sugarcane Research Stations, has revolutionised the Sugarcane Industry in the country. Some of the improved varieties of sugarcane in common cultivation are featured below :

Co. 622

Co. 622 is grown in South Bihar, particularly in Gaya and Arrah districts, mostly in places where Co. 313 has not been a success. The variety was released from Coimbatore to the State Research Stations in the year 1944.

The main characteristics of this variety are:-

Co. 622 is a high sugared early cane variety giving yield at par with or even better than Co. 313 and with a superior juice quality. It is fairly good and early germinator but its early vigour is not marked; tillering good; fairly good yielder; fair ratooner; suitable for lighter and loamy soils; does well under irrigated conditions but suffers when irrigation is withheld; under Bihar conditions reaches peak sucrose content in January and carries on till March; rather susceptible to borers, stray cases of red rot susceptibility reported from certain areas of Uttar Pradesh.

This variety was evolved by crossing Co. 421 with Co. 331 as an open across in which Co. 421 was used as mother and Co. 331 as father. Co. 622 has medium thin and straight canes having pith with small central cavity, fairly hard rind and light green internal tissue. The colour of the canes is greenish yellow turning purple on exposure; *joint*—cylindrical with very rare splits, ivory markings and bud groove absent weather markings present but rare and heavy bloom throughout the joint; *growth ring*—light brown, medium and swollen; *root zone*—whitish yellow, broad, slightly swollen with 2-3 rows of regular, prominent and slightly bulging root eyes; *node*—even; *leaf scar*—slightly inclined, not prominent and protruding below the bud; *bud*—big, plump, ovate reaching the middle of growth ring, inserted at leaf scar and hairs present on the top of the bud; *leaf*—light green, long and of medium width, *leaf-sheath*—younger sheaths light green with characteristic purple and the throat and edges and older ones with purple blotche and streaks, scarious border prominent; *foliage*—fairly compact at top, younger leaves with erect tips and older ones with curving tips.

Keeping Down Weeds in Sugarcane

When you are out to control weeds in your sugarcane crop by spraying 2,4-D, you had better combine it with treatment of the setts with organomercurial compounds like "Aretan." The results are seen in better weed control, better germination of setts, vigorous shoots and more millable canes per acre. The combined treatment avoids the depressing effect of 2,4-D on germination of setts.

(Reproduced from Sugarcane Herald, September, 1960)

Practical Demonstration of Research Advice on Farmers' Fields

Dr. Deshmukh Addresses Research Workers at Patna

"Experiments in laboratories is one thing and transplanting the same experiments in farmers' fields is another", said Dr. Panjabrao Deshmukh, India's Minister for Agriculture, inaugurating the State Agricultural Research Programmes Committee Bihar, at Patna on October 8, 1960.

He said : I do not think there is sufficient liaison between the field worker and the laboratory and this is one thing towards which we have to bend our energies.

Referring to planning of research programmes Dr. Deshmukh expressed that it was better to avoid planning of work either on crops or on subjects of a long-term nature by fits and starts. A programme to cover all the crops and the several regions in a single administrative unit such as Bihar State, should be drawn up over a sufficiently long period, say for ten years, suggested Dr. Deshmukh.

Dr. Deshmukh also stressed that every research centre should be adequately manned, equipped and financed.

Dr. Deshmukh emphasised the need of demonstrating the practical results of Research-advice on the farmers' fields.

Expressing his satisfaction over the current programmes he said : I am glad we have now realised the need of having more breeding centres and evolving varieties which were particularly suited to particular soils, climates, rainfalls etc.

Bacterial Fertilizers yield Good results

Experiments with bacterial fertilizers conducted at the Agricultural Research Institute, Pusa, and its substations have shown promising results.

There was a significant increase in the yield of *berseem* when it was inoculated with phosphobacterin. Increase in the yield of wheat and maize was also reported.

Culture of phosphobuterin and azotobacterin had been brought by the Minister for Agriculture, Dr. P. S. Deshmukh, from the Soviet Union where bacterial fertilizers are used widely.

These fertilizers are being used on more than 10 million hectares in the Soviet Union. Their use on increased production of legumes by 20 to 25 per cent ; and vegetables, potatoes, oilseeds and cotton by 10 to 15 per cent. Australia, the United States and New Zealand are other countries where these fertilizers are used.

India is new to the use of these fertilizers. Much more intensive and extended field experiments under different soil and climatic conditions with a wide variety of crops will be needed before their use can be standardized here.

But the Food and Agriculture Ministry experts see considerable scope for utilizing them in areas where phosphorous acid in soil is low. Relative to grains, this fertilizer is stated to be cheap and economic.

The Soviet Union has agreed to train two specialists in laboratory techniques, manufacturing processes and methods of application.

(Reproduced from Hindustan Times, October 15.)

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