KRISHAK SAMACHAR

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Founder President—the Dedicated Soul.

FIFTH NATIONAL AGRICULTURE FAIR

Getting More Impetus

You are already aware that Bharat Krishak Samaj is holding the FIFTH NATIONAL AGRICULTURE FAIR in Bombay with the active cooperation of Maharashtra Government from the first week of March 1969. The work of the Fair is getting more fillip day by day. The ninety acre land is ready after levelling and finishing along the Mahim Bay.

Maharashtra Government has allocated Rs. 20 lakhs in her budget for putting the pandal covering a space of 85,000 Sq. Ft. approximately. The erection of huge pandal is underway. Besides Maharashtra many other States have also agreed to put their pavilions in the Fair.

The space marked for Entertainment and Shopping Centre has already been booked and the construction work is going on. A net-work of road is under construction The levelling and metalling of road is to be completed during the month. By now more than 80 per cent space has been booked by the participants coming from private sector.

Efforts are being made to tap all the Embassies to put their pavilions and show-windows in the Fair. Upto now many big and small nations have booked space for their pavilions including United State of America, USSR, West Germany, Israel, United Kingdom etc. Japan and France are participating through their firms and other establishments.

Six Central Ministries have also agreed to set their pavilions in the Fair. The progress of the Fair is quite satisfactory and it will be another mile-stone after the First World Agriculture fair of 1959-60 held by Bharat Krishak Samaj under the able guidance of late Dr. Panjabrao Deshmukh.

Parties desirous to participate in the fair are requested to contact the fair authorities for booking the space immediately to avoid any disappointment.

Encourage Small Farmers To Achieve High Yielding Targets

(*H. Laxmi Narayan*)

IN the First and Second Five Year Plan periods, increase in India's agricultural output came mainly through extension of cultivation to new areas. Towards the close of the Second Plan period, when there was little scope for extending cultivation to new areas, the Government started thinking seriously about plans for increasing agricultural productivity. It had to think in terms of an integrated strategy because efforts to realise the various Plan targets could attain only limited success owing to the shortage of agricultural commodities. In the Three Plans together. nearly 50 per cent of the increase in agricultural production was due to extending cultivation to other categories of land. Increase in per acre yield did not exceed 1.8 per cent a year. So the Government thought that it was best to concentrate efforts in areas which had maximum growth potentialities in terms of increasing agricultural production.

In 1960-61 the Government initiated *the Intensive Agricultural District Programme* (I. A. D. P.) *which is also known as the Package Programme*. It was felt that instead of spreading developmental efforts and resources throughout the country, intensive efforts must be made in selected areas which have assured irrigation, by adoption of technologies used in developed countries. The strategy was based on the principle that a few improved agricultural practices can be partially effective if adopted singly, but the full benefits can be attained if the improved practices were adopted in combinations suitable for specific soil and climatic conditions. The immediate goal was to achieve rapid increase in agricultural production and particularly in production of food crops through the concentration of resources in both men and material. The long-term objective was that of self-generating breakthrough in productivity and raising the production potential based on the human and physical processes of change.

Let us briefly examine as to what has happened to the I. A. D. P. Though selection of districts was to be on the basis of the availability of assured irrigation, instances are not lacking where areas were selected without ensuring that this crucial condition was fulfilled. Some of the areas selected had only protective irrigation and no irrigation water is available in these areas when rains fail in two successive years. Also the programme came across many bottlenecks, such as lack of adequate and timely supply of inputs, unsuccessful working of farm plans and inadequate extension service. The co-operative credit programme which was very crucial for the success of the programme did not move in the desired direction. This was particularly true of fertiliser credit.

In January 1964. the Agricultural Production Board decided that roughly one-fourth of the cultivated area of the country should be selected for intensive agricultural development. This decision was taken on the basis of the experience gained in the working of the Package Programme. So was formulated *the Intensive Agricultural Areas Progromme*. Emphasis was laid on increasing the area under improved seeds. Though this programme also followed the package approach, greater emphasis was placed on intensive agricultural development of *selected areas* instead of laying emphasis on *single crops* as in the case of the I.A.D.P. By extending the package approach to nearly one-fifth or one-fourth of the cultivated area, the intensive Agricultural Area Programme does not seem to have made a realistic appraisal of the tasks involved. Progress of the I.A.D.P. had shown that we have not been able to cope with some of the vital problems even in a handful of districts. The tasks involved in extending the strategy to considereble parts of the country required tremendous efforts in terms of resources.

The Draft Outline of the Fourth Plan, published two years. ago, really made a *Leap Forward* when it acknowledged that if our dependence on imported foodgrains is to be reduced, it is necessary to think of a new strategy by making use of modern techniques of production. The new strategy known as the *High-Yielding Variety Programme* (H.Y.V.P.) is new only in name because, for all practical purposes. it is a continution of what we were doing earlier, except for the introduction of high-yielding and high fertiliser-responsive exotic varieties. The strategy was worked out with reference to paddy, wheat, bajra, jowar and maize. The scheme is being operated mostly in the I.A.-D.P. and I.A.A.P. areas which already have the necessary staff and other facilities. Emphasis on the introduction of short duration crops was expected to help in obtaining larger yields from the same piece of land. Some of the improved high yielding seeds recommended have been Taichung Native-1, I.R.-8 and A.D.T. 27 in the case of paddy, Mexican wheat and hybrid varieties of maize jowar and bajra.

Now let us see where this progromme stands in terms of its

achievements. Simultaneously, a number of questions can also be answered. For example, what are the possibilities of our being able to achieve breakthrough in agriculture production so that we are able to raise the economy from traditional stage to the level of take off ? What is the impact of the Programme on improving the lot of millions of poor peasants.

We can judge the H.Y.V.P. by studying the impact it has made either on cultivators who are involved in the Programme or in terms of our country's food production and thereby bringing about reduced imports. I propose to confine myself to the successes attained in the case of wheat which happens to be an important Rabi crop and of paddy which is an important Kharif crop. The figures for the districts of Amritsar, Saharanpur and Karnal are given below :

Homage to Dr. Panjabrao Deshmukh

Krishak Samachar pays its homage to Late Dr. Panjabrao Deshmukh, the founder President of Bharat Krishak Samaj on his 70th birthday anniversary which falls on 27th December 1968.

Table 1—Target and Achievements

	Taichung Native I		*Hybrid Maize*		*Mexican Wheat*	
	Target	*Achievement*	*Target*	*Achievement*	*Target*	*Achievement*
			1966-67			
Karnal	7,000	2,250	4,000	2,000	25,000	13,500
Saharanpur	5,000	1,823	650	480	—	—
Amritsar	5,000	3,000	9,000	2,000	—	—
			1967-68			
Karnal	10,000	3,044	5,000	2,580	1 00,000	1,07.506
Saharanpur	6,000	7,089	1,000	1,278	42.294	43,572
Amritsar	15,000	7,437	8,000	8,975	2,00,000	2,10,619

It is obvious that in terms of achievement the situation in 1967-68 as compared to 1966-67 has improved particularly in the case of Mexican wheat. In the case of TN-1 paddy the achievement is much below the target. The success achieved in realisation of targets is much more limited than what the figures indicate because these figures have been processed by official agencies. Official agencies have a tendency to exaggerate their achievements. This is clear from the recent information available for Saharanpur district.

While the official figures show that the area under high-yielding paddy has increased from 7,089 acre in 1967 to 15,072 this year, information collected by us for a number of cultivation households shows that the area under high-yielding paddy has declined by 57 per cent and that there has also been a shortfall in the realisation of fertiliser target. For instance in 1967-68, cultivators in Amritsar district could be supplied with only 58,331 tonnes of fertilisers (nitrogen, phosphorus and potassium) during Rabi as against the target of 94,000 and 35,390 tonnes during Kharif against a target of 93,500.

LOCAL VARIETIES PREFERRED

The data that we have collected from the districts of Amritsar and Saharanpur show some interesting results. In Saharanpur, out of the 58 cultivators who had sown TN-1 paddy during the Kharif of 1967, only 21 are coutinuing with the high-yielding variety seeds and even among these 21, oniy eight are cultivating TN-1 paddy. Nearly 38 of them who have given up the high-yielding paddy seeds expressed the view that they would prefer local varieties of paddy to either IR-8 or TN-1. Out of the 32 cultivators who were non-participants during the previous Kharif, only four have taken to high-yielding variety now.

Thc situation in Amritsar district is even worse. Out of 60 cultivating households who had sown high-yielding paddy (TN-1) during the Kharif of 1967, only 13 continue to cultivate it during the current Kharif. Even they have mostly replaced TN-1 by IR-8.

It is obvious that the cultivators of Saharanpur and Amritsar districts are not convinced about the high-yielding nature of TN-1 paddy. Even IR-8 does not seem to have gone smoothly with the cultivators. The cultivators have yet to form a definite opinion about IR-8 as it is only in this Kharif that some cultivators have taken to it. TN-1 and IR-8 are imported varieties, The only improved indigenous varieties extensively used in Tanjore, known as ADT-27 seems to have done better. This improved local variety is supposed to give us roughly 40 per cent higher yield than the traditional ADT-20.

In respect of agricultural production Tanjore has been able to attain considerable success by incresas

ing under Kuruvai paddy from 3 lakh acres to 6 lakh by introducing short-maturing variety which takes only 104 days. ADT-27 is a short maturing variety which takes only 105 days. However, in the case of *Thalada* and *Samba*, they have not been able to introduce the short duration variety as *Thaladi* season lasts for 130 days and *Samba* 160 days. However, even in Tanjore, the extension of the area under ADT-27 has not been found easy because the high-yielding paddy seed has not been able to stand up against sugarcane in terms of profitability. The main achievement of Tanjore agriculture seems to be an increase in the area under short duration variety.

Unlike in the case of paddy the H.Y.V.P. seems to have attained reasonable success in the case of wheat where the Mexican varieties, such as Kalyan, Lerma Rojo and Sonara-64 have shown considerable success. The Mexican wheat variety has achieved success in the districts of Karnal. Saharanpur and Amritsar.

In the Mexican wheat seeds we have certain wheat varieties which can give us something like a breakthrough in the future which is not true of the high-yielding paddy seeds. I give below some details relating to yields in the case of high yielding wheat and paddy as compared to local varieties.

In the case of wheat the yield of the Mexican variety "Kalyan" is more than donble the yield of the *Desi* variety. Whiie Kalyan gives a residual income of Rs. 833 per acre, the *desi* varlety gives only Rs. 397 per acre. Obviously, the imported variety has proved much superior to the local variety. Contrast this with the case of paddy. Taking sample households for study, the highest yield was found to be 28.54 maunds per acre in the case of one farmer. On the other hand *Basmati* paddy gives us as high a yield as 31.05 maunds per acre. Generally TN-1 gives a residual income of Rs. 262 per acre, while income from Basmati is Rs. 494 per acre, and from *Parmal* is almost double that given by TN-1.

A study conducted by the Agricultural Economic Research Centre. Madras, in the Krishna District of Andhra Pradesh in the case of 60 selected farmers shows that the high yielding paddy seeds give a yield of 1,700 kg. per acre as against 1,600 kgs. per acre given by local paddy. As compared to a residual income of Rs. 512 per acre from TN-1 paddy, the participants in the High-Yielding Variety Programme got as much as Rs. 713 per acre from the local variety called SLA-13. At the time of the study in Krishna District more than half ihe participant cultivators did not have any plant to cultivate the high-

Table 2—Yield per acre (Wheat)—Amritsar

	Output (in maunds)	*Output (in Rs.)*	*Expenditure (in Rs.)*	*Residual Income (in Rs.)*
PU—18	36.79	1,073	178	895
Lema Rojo	29.56	864	137	727
Sonora-64	—	866	183	683
Kalyan	38.45	1,723	390	833
Desi	16.84	521	124	397
Yield per acre (Paddy)—Amritsar				
TN—1	28.54	488	228	260
Basmati	31.05	666	172	494
Desi	—	594	172	422
Parmal	—	692	180	512

Table 3—Cash Expenditure per acre (in rupees)—Paddy

	Saharanpur				*Amritsar*			
	Total	*Fertilisers*	*Irrigation*	*Labour*	*Total*	*Fertilisers*	*Irrigation*	*Labour*
TN—1	161.98	72.53	13.77	38.08	228.06	90.36	22.78	80.86
Superior varieties (local)	90.14	38.20	14.73	20.46	—	—	—	—
Coarse Varieties	74.55	21.71	18.03	16.44	—	—	—	—
Basmati	—	—	—	—	171.98	51.66	21.70	89.52
Desi	—	—	—	—	172.30	40.40	24.01	82.26

Baseless Fears

It has been brought to the notice of the Government of India that some farmers of the Punjab, Haryana and West Uttar Pradesh are not sure of the good crop of wheat this year because the sowing of wheat is done till the 15th of November but due to the lack of rain and moisture in the soil, the farmers of these areas are unhappy. As a result, a large number of farmers are planning to grow gram and other rabi crops instead of wheat The Government has in this connection through Scientists and Extension workers have assured that in our country we have various types of wheat which can be sown even upto 15th January. The Government of India has at different Research Stations evolved Sonara-64, Sarbati Sonara and Sonalika varieties of wheat which can be successfully cultivated in the late days of winter. Moreover, very effective insecticides and pesticides are also available to safeguard the crop from attack of disease and pests.

The farmers of these areas are therefore, advised to contact their local Extension and Research Workers to get scientific information on the cultivation of wheat crop. Having been encouraged by the result of the last year, the Government has decided to cultivate wheat in one crore acres against 70 lakhs acres last year during Rabi.

yielding variety paddy in the next Kharif season.

In spite of the large expenditure on the high-yielding variety paddy in terms of fertilisers. irrigation. pesticides and other inputs; the output per acre in Krishna District was Rs. 714 for both the varieties. As against only 9 lbs. of fertilizers applied to local paddy (in terms of elements), the high-yielding variety paddy recieved 7 lbs. per acre. This is true of areas like Saharanpur and Amritsar Districts also, as it can be seen from the figures given below :

In Amritsar the per acre expenditure on fertilisers was nearly Rs. 90.36 in the case of TN-1 and Rs. 40.40 in the case of *Desi* paddy. In Saharanpur, fertiliser expenditure in the case of TN-1 was Rs, 72.53 as against Rs. 21.71 in the case of the coarse variety.

As compared with paddy, wheat gives greater hope as can be seen from Table 4.

Though a higher expenditure of Rs. 319.12 had to be incurred in the case of Kalyan as against Rs. 24.18 in the case of *desi* wheat, cultivators were compensated by the higher returns on the high-yielding variety.

Table 4—Cash Expenditure per acre (in rupees)

	Amritsar					*Saharandur*				
Varieties	*Total*	*Ferti-lisers*	*Irriga-tion*	*Labour*	*Seed*	*Total*	*Fertl-lisers*	*Irriga-tion*	*Lab-our*	*Seed*
PV-18	178	103.81	14.26	10.40	37.93	—	—	—	—	—
Lerma-Rojo	136.93	72.33	13.96	14.08	22.96	—	—	—	—	—
Sonara-64	182.74	72.77	13.19	29.44	36.95	—	—	—	—	—
Kalyan	390.12	106.69	15.42	12.19	242.94	197.11	107.91	15.41	8.92	56.50
Local High Yielding	—	—	—	—	—	147.13	62.07	13.50	9.34	58.64
Desi	124.18	48.31	11.44	15.19	29.72	107.50	42.19	14.80	3.78	36.87

DRAWBACKS OF TN-1 PADDY

Cultivators have expressed a number of reasons for the failure of the H.Y.V.P. in the case of paddy :—

(*a*) TN-1 paddy is highly susceptible to bacterial and other plant diseases.

(*b*) The dwarf size of the plant makes threshing operation difficult.

(*c*) It requires higher expenditure on irrigation and fertilisers without any compensation in the form of higher returns.

(*d*) Since it is a coarse variety, it is not aceeptable to the consumer and it fetches a lower price in the market. This should be viewed in the background of higher expenditure to be incurred on TN-1.

(*e*) While the fodder from the local variety fetches a good price that secured by the high-yielding variety fodder is not high.

Obviously attempts are being made to replace TN-1 by IR-8.

At a seminar held in Pakistan in March-May this year, on the cultivation of IR-8. it was pointed out by participants that the variety has been successfully introduced there with many farmers getting yields ranging from 40 to 80 maunds per acre. However, there were failures also. Among the factors attributed to failures are lack of guidanee from official agencies, ultimely sowing, inability to use fertilisers, and unsuitability of the soil.

In our country. IR-8 has been introduced only now. Already farmers have started complaining that being coarse variety, it fetches only low prices and its market demand is low. Secondly, it takes a longer gestation period than TN-1 only in November which happens to be the

(*Contd. on page* 22)

Mr. Ray Newton No More

Bharat Krishak Samaj expresses deep, sense of sorrow at the sad demise of Mr. Ray Newton, ex-Direetor of the American Friends Committee and Executive Secretary.Farmers & World Affairs, Inc., U.S.A. He breathed his last on 24th November 1968.

Born on January 12, 1891, in Lenox, Mass, U.S.A. he grew up on a New England farm. During his University studies he specialised in English literature, Geology, Labour problems, Personal Management and Economics.

His great and commendable contribution was in his thirty years (1927—1955) association with the American Friend Service Committee. After his retirement on June 30, 1956, from this body, be became the Executive Secretary of the Farmers & World Affairs, Inc. Philadelphia, U S.A. and remained in office till June 30, 1966.

Under his distingushed Leadership, Farmers & World Affairs has devised a programme which has not only aroused the enthusiastic interest of American Farm leaders but has also given them means by which they can actually take hold of world problems in an intersting and effective way.

It is the bounden duty of farmers of the world to put in their united effort to materialize his incomplete mission for the causc of farmers for which he strived throughout his life peacefully. It will be really a befitting homage to the departed soul.

We pray to Almighty to bestow Peace on the departed soul and sufficient strength to his colleagues to accomplish the objects for which he laboured so dilligently throughout his life. May his soul rest in Peace.

Feed The Hungry Land To Feed Millions

Land in India, which agriculturally is in take off stage is more hungry than thirsty, an expert remarked. Harvested crops in the country remove every year an average of eight million tonnes of plant food such as nitrogen, phosphorus and potassium. But the replenishment in the shape of chemical fertilisers and organic manure, total only 1.5 million tonnes. This depletion in a vigour of the soil is one of the major causes of poor yields. Irrigation is important, but fertiliser is as important. To feed the increasing millions in this country agriculture has to be reinvigorated through the application of fertilisers.

It has been established beyond doubt that if a better seed increases yield by 50 per cent and a better fertiliser increases that by 50 per cent the result is not a 100 per cent gain but 125 per cent gain. Only 3 per cent of the earth surface is under cultivation which cannot be increased to even 5 per cent inspite of best efforts. Of all the instruments for increasing world food production, better tools, modern implements, fertilisers, hybrid seeds, new plant strains and pesticides chemical fertilisers are found to be the most potent and immediately effective.

Building soil fertility and getting maximum production for the world's limited land will require rapidly increasing fertiliser inputs. Fortunately there are reserves of basic fertiliser materials around the world. Nature long ago provided the essential elements for plant growth.

Of the three basic materials required in the manufacture of fertilisers nitrogen is the most easily available as it can be obtained from the atmosphere, from air, water and natural gas. Potassium and phosphates have to be mixed from minerals at various locations. The other micronutrients are similarly obtained by mining.

Fertilisers are used because the nutrients perform certain functions in plant growth and development. Nitrogen phosphorous and potassium are the three major nutrients. The secondary nutrients, calcium, magnesium and sulphur are just as important but are required in somewhat lesser amounts. There are seven other micronutrients (Zinc, Boron, Iron, Copper Manganese, Molybdenum and Chlorine) that are also necessary but required in even smaller qualities.

How Nutrients function

It has been stated that the Nitrogen can be obtained from atmosphere. Atmospheric Nitrogen can be contained with oxygen in the air and carried to earth in rainful but the amount is usually only 3.5 pounds per year. Although an average soil may contain about 2000 pounds per acre of Nitrogen it is tied up as organic matter and not available to plants until it is broken down by bacteria into available form.

The amount of nitrogen released from a very dark coloured soil would be most indequate for a 50 tonne sugar cane yield or a 4,500 pound rice crop and this is why large amounts of fertiliser nitrogen have to be used.

Action of Nitrogen

Nitrogen effects directly and help in growth of the plant. Its direct effects result in large roots. wider larger succulent leaves, increase in grains and kernels, fuller, heavier kernels and seed heads, bigger healthier plants and indirectly it serves as food for soil organism, lessens damage from diseases and insects and hastens maturity.

Nitrogen is an essential constituent of all living matters and is needed for building blocks of proteins. If insufficient nitrogen for growth if present the plant withers because it has not been able to manufacture enough chlorophyll.

Proper balance of all nutrients, hastens maturity of the plant, crop quality is affected by nitrogen. Adequate amounts ensure higher proteins in grains and grass and animal thrive better as a result. An overall pale green colour is associated with the nitrogen deficiency and a healthy bluishgreen with adequacy.

How Phosphrorus acts

Phosphorus stimulates production of smaller roots and is needed practically in the early stages of growth. Nearly half of the total plant phosphorus is absorbed when only 20 per cent of the total growth has occured. It plays a key role in the reproductive process.

Phosphorus helps chemical changes go on in the plant which include utilisation of sugar and starch, photosynthesis, formation, cell organisation and transfer of heredity. Therefore it must be present in every living cell.

It is sometimes difficult to identify a marginal phosphorus deficiency in the plant. The chief identification is that the plant is shorter than normal. Sometimes a reddish colour appears particularly on the midribs of the cane leaves. Another characteristic colour is a dark bluish-green which should not be confused with the natural colours in the healthy plant.

Potassium a must

With the exception of nitrogen potassium is the essential element found in largest quantities in plants and in relatively large amounts in soil. In most plants, around 2 per cent of the Dry weight is made up of potassium yet scarcely and it is deposited in one place. It keeps moving in plants, acting as a carrier of nutrients Organic chemicals plant leaves are generally high in potassium, stems intermedite and roots less and red low, crops with highest content and requirement are legumes (beans, peas, pulses), potatoes, tomatoes, sugarcane, tobacco and cabbage.

Effects

Potassium is essential in forming and transporting the starches and sugars in plants. It makes sure that nitrogen is properly changed into protein. It controls and regulates the activity of many other nutrients, It activates enzymes, promotes growth of young plants, and helps adjust water relationships. When potassium is deficient, there is less active leaf area, and leaves contain less water than normal and wilt earlier.

Potassium deficiency results in low quality of fruit and vegetables, low sugar content of sugar cane, and less resistance to insects and diseases. In this case, visible deficiency begins as a yellow leaf tip,with the discolouring then spreading down the leaf margins. As it progresses, the margin dry-up extends upward on the plant. Rice shows a similar pattern. The potato leaf with a severe deficiency is characterized by brown spots. Tobacco and other crops also develop yellow leaf margins.

Secondary Nutrients

Calcium, magnesium and sulphur are the three secondary elements required for plant growth.

Calcium

Deficiences of calcium are relatively rare. In most soils there is ample available calcium to raise high yields of good quality crops. The widespread use of limestone and superphosphate undoubtedly has been a factor in the general abundance of this element in soils.

In plants Calcium plays a very important role. It is part of a very compound that cements the walls of cells together. Between the walls of each of the millions of cells that make up the plant bady is found a compound known as Calcium pectate. Under cases of extreme calcium deficiencies, there is a complete breakdown of cell wall structure.

Sulphur

The element Sulphur is a part of many proteins. Sulpher plays an important role in the formation of nodules on the roots of legumes. Certain crops have a higher requirement or need greater quantities of Sulphur than do other plants. Plants like Cabbage and cauliflower need greater quantities of sulphur than others. The strong distinctive flavour of cabbage, cauliflower and other members of the cabbage family is due to certain sulphur containing compounds. Oil containing crops like peanuts and Soyabeans also have higher requirements. Sulphur deficiency symptoms of coffee can be seen with the yellowing of the centre portion of the leaf.

Magnesium

Magnesium is a component of the chlorophyll molecule. Chlorophyll is made up of seveal different kinds of atoms: carbons, oxygen, hydrogen and nitrogen, but right in the centre of this large rather complex molecule is an atom of magnesium the only metallic element to be found in the molecule.

In fact only a small percentage of magnesium is found in the chlorophyll molecule. It is essential for the formation of amino acids, which are ofcourse the building blocks of protiens. Magnesium is also essential for the formation of fats.

Micro Nutrients

The micro nutrients that are required by plants are seven in number viz. Zinc, Boron, Iron, Copper, Manganesse, Molybdenum and Chlorine. These elements are needed in exceedingly small quantities but when lacking can affect yields and quality. They are also essential for growth of plants.

Zinc

Zinc is necessary to keep several enzyme systems working including the one involved in protein formation. It also helps to form growth hormones, and to maintain water uptake.

When deficient plant roots are often abnormal and plant growth is reduced, the leaves grow small and mottled a lack in citrus known as 'Mottle leaf'. In sugar cane the stem is short and the plant tends to bunch. When the upper part of the plant is white we have a "white bud" condition. In milder cases, the base of the upper leaves becomes a whitish green or water looking colour and there are whitish strips. Often very short and narrow between the views on the upper leaves. Sometimes plants grow out of deficiency. It is best to ensure that there is an adequate supply of zinc.

Manganese

Manganese helps incorporate Calcium, magnesium and phosphorus in plants in useful and necessary organic combination. Manganese does not move within the plant, so deficiency symptoms will first appear on younger leaves.

Copper

Copper is involved with making certain enzyme systems work. It helps intensify colour in certain vege. tables and may have something to do with improving flavour. It has been observed that plants are more resistant to frost and dry weather when they have adequate copper.

Deficiencies of copper are easily observed, in coffee, the leaves turn yellow because dry and twisted. In surgarcane, the entire plant turns yellowish with the youngest leaves becoming mostly yellow. then twisting at the tip. The chief thing to watch for is the drying leaf tip particularly on younger leaves.

Chlorine

It is an essential nutrient. In the soil it moves like nitarte with the soil water. tt is found abundantly in soil and plants.

Boron

Born performs several functions in plants. It is essential for the development of cell walls and is also essential for normal germination of pollen grains and growth of pollen tubes.

Iron

Iron aids in the production of chlorophyll and is a component of enzymes necessary for plant respiration. Deficiency symptoms for iron are indicated by a yellowing of the leaf tissue immediately adjacent to the veins which remain relatively green. Under extreme conditions the leaf turns ivory or white.

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Fertilizer For Increased Agricultural Production

The increasing use of fertilizers is an important element in India's new agricultural strategy.

For the purchase and distribution of fertilizers, the Union Government has been operating a State trading scheme, known as Central Fertilizers Pool. Briefly, its objects are popularising the consumption of fertilisers in India, making them available to cultivators at uniform rates in all parts of the country and ensuring equitable distribution of available supplies in order to maximise agricultural production.

The Pool generally handles ammonium sulphate, urea, calcium ammonium nitrate and ammonium sulphate nitrate, procured from abroad and from indigenous sources. In addition to these four fertilizers, the Pool also handles the procurement from abroad of ammonium phosphate, di-ammonium phosphate, ammonium chloride, sulphate of potash, muriate of potash, basic slag and NPK (nitrogen, phosphorus, potassium) complex fertilizers. Pool prices have been fixed in such a way as to work on an overall 'no profit-no loss' basis and to enable indigenous factories to market their production at the same rates if they follow proper marketing principles and develop their marketing system.

Progressive Liberalisations

While indigenous production was taken over by the Pool initially, there has been progressive liberalisation. On October 1, 1966, thirty per cent of the indigenous production of the nitrogenous fertilizers was released for free sale. The open market quota was raised to 50 per cent on October 1, 1967, in respect of factories in the Central Fertilizer Pool on September 30, 1966, The output of new factories that have since gone into production has not been taken over by the Pool. From October 1 this year, the open market quota for the old factories has been raised still further to 70 per eent.

Facilities to Farmers

Promotional measures for encouraging the use of fertilizers have been conducted by the Government in recent years as a nation-wide campaign. These include: Off-season rebate on the Pool supplies of urea, calcium ammonium nitrate and sulphate of ammonia to encourage stocking by distributors during non-manuring season in order to ensure timely supplies to cultivators; subsidy on transport of pool fertilizers from factories or ports by road to destinations up to 500 kilometers; subsidy on transport cost of fertilizers to hilly and inaccessible areas: strengthening of supply arrangements of departmental sale depots; and field demonstrations. Credit arrangements have also been streamlined to facilitate increased use of fertilizers. The Government of India have advanced to the State Governments short-term loans repayable in six months to the extent of 50 per cent of the cost of the Pool fertilizers for the purpose of stacking of fertilizers by big distributors, and to the extent of one sixth of the cost of fertilizers distributed in the shape of Taccavi loans to the cultivators who are not members of cooperatives. Pool fertilizers also continue to be supplied on the basis of sixty days' deferred payment after despatch.

Increasing Consumption

It is gratifying to note that, backed up by such a nationwide campaign, fertilizers consumption in India has been making a steady progress. During the First Five Year Plan, fertilizer use increased by 114 per cent. over the achievement at the end of the First Plan. The progress was maintained during the Third Plan and mounted to 126 per cent over the level reached by the end of the Second Plan. Even more rapid progress has been achieved during the years 1966-67 and 1967-68 when total fertilizer consumption advanced from 7.60 lakh tonnes of NPK (nitrogen, phosphorus, potassium) in 1965-1966 to 15.80 lakh tonnes in 1967-68.

New Targets

While this progress has been commendable, the governmental agencies concerns are keenly aware that even today fertilizer consumption in this country does not camparc favourably with that of some of the most advanced countries in the world. It has been recognised that in order to reach and maintain the recommended levels of consumption, it is necessary to increase fertiliser production in the country to avoid increasing dependence on imports. According to the present programming, it is expected that in the year 1973-74 fertilizer production would rise to 3.50 million tonnes in terms of phosphorus.

Organic Manure

It is recognised universally that suitable complement of organic manure to chemical fertilizers is indispensable for preserving the nutritional balance and fertility of the soil. The main advantage with organic manures is that, though bulky, they are available locally. Therefore, both in rural and urban areas, constitute an important programme under the agricultural production efforts. Currently, schemes relating to rural and urban compost preparation, intensification on green manuring practices and utilisation of sewage and sullage are in progress. During 1966-67 production of rural compost was estimated at 122 million tonnes. Approximately 139 million tonnes are

(*Contd. on page* 9)

WORLD FARM NEWS

Cottonseeds as Protein

Research is being carried out to see if cottonseed can be a new source of protein.

French Professor Michele Cepede told a recent Rome meeting that cottonseed is getting increasing attention as a source of protein. The meeting was sponsored by the Food and Agriculture Organisation, UNICEF and the World Health Organisation to investigate new non-conventional source of protein to supplement the more usual ones.

"The time may be near," Professor Cepede told the conference, "when it will be more advantageous to process (cotton) seed essentially as a source of protein destined for human food, with all taking a secondary place."

UNICEF Representative Dr. Max Milner told the meeting that an edible cottonseed flour concentrate already has been developed in the United States under a contract with UNICEF. He also said a pilot plant in India soon would be producing several hundred pounds of cottonseed flour per day.

French Farming in 1970, 1975

A projection on French agriculture in 1970 and 1975 has been made by a French Research organisation, the Centre of Research and Decumentation of Consumption.

As reported in Foreign Agriculture of June 3, 1968, the Centre says that in the next seven years French farmers will continue to expand production, especially of milk and soft wheat. It suggests imports of durum wheat and vegetable oils will continue upward while there will be self-sufficiency in pork, effs and poultry ; nearly a permanent status as a net exporter of beef, and growth in the French fruit industry.

Wheat acreage is expected to remain constant through 1970 and 1975 as it has over the past 20 years. There likely will be a sharp drop in wheat acreage in Northern France but this will be balanced elsewhere. Yields are expected to increase 50% by 1975, bringing the average yield to 52.8 bushels per acre. This would mean export supplies of soft wheat of about five million metric tons in 1970 and 1975, a 3.5 million ton gain over 1958-60.

Import of durum wheat are expected by the Research Centre to reach about 400.000 tons in 1970 and 410,000 tons by 1975.

The per capita consumption of wheat as bread and flour is expected by the Centre to drop while int ıke of semolina and durum wheat flour will rise.

Feed grain production in France especially corn and barely, should double the 1958-60 average by 1975. Barely acreage is expected to be 7.4 million tons in 1975, twice the 1958-60 level. Corn output may triple to 6.3 million tons.

The quantity of grain used in France in 1970 as feed grain is expected to show a 70% increase over the 1958-60 average of 10.7 million metric tons. and to double this average by 1975.

French out put of beef and veal is expected to rise by 50% to 2.5 million metric tons by 1970 according to the centre. This increase will be taken up almost entirely by the domestic market. The Centre forecasts a milk surplus by 1970 and 1975 ; under its "most probable" assumption, however, this surplus would be only a milk fat surplus estimated at over 40,000 metric tons for 1970 and below 90 000 tons for 1975.

It is forcast that pork. eggs and poultry production will meet domestic demand by 1970. Indications are that poultry output by 1975 will range from 550,000 to 640,000 metric tons, dressed weight, about twice the 1958-60 average.

The centre forecasts a growing French demand for imports of vegetable oils. Imports may be up by 30% in 1970 and 60% by 1975.

More Kenyan Tea

Kenyan tea farmers are making a major effort to increase production By 1973, they anticipate output will be 87 million pounds, more than double the production of 1963. Authorities believe that tea eventually will become Kenya's number one agricultural product, replacing coffee as the country's main export earner.

Present tea production is about 62 million pounds, compared with 40 million pounds five years ago.

The Kenyan tea industry now employs more than 15% of the country's total national labour force.

Bananas aplenty in Cost rica.

Costa Rica is having a banana boom.

Indian Oilseeds Output Rises

Indian farmers increased production in every major oilseed this past season compared with 1966-67.

India's oilseeds represent about one-tenth of world total including nearly one-third of peanuts. In the past 15 years, the average increase demand for oilseeds in India has risen by five per cent a year. Production, however. has increased by only slightly more than two per cent a year.

Indian Five Year Plans consistently call for strong growth in oil-seeds, but production has not met with the hopes of government authorities. Nevertheless in 1967-68 production did reach a record high.

Production of peanuts, in the shell, this past season totalled 5.8 million metric tons. Output of sesame seed was 450,000 tons ; rapeseed and mustar seed,1.3 million tones; flax seed, 42 ,000 tons; castor-seed, 140,000 tons; copra, 765,000 tons; and cotton seed, 2.2 million tons.

Production is rising rapidly and is expected to overtake coffee in 1969 as the country's biggest foreign exchange earner. In 1969 banana acreage is expected to be 49,000 acres and growing to 59,000 acres by 1970. Exports are expected to climb in value from 32 million in 1967 to £75 million in 1970.

Prices in World Markets

The index of agricultural prices in world markets (base 1963 equals 100) fell three points in 1967.

This small fall in the average indicator covered widely divergent movements in commodity prices ranging from increases of 34 and 14 per cent in rice and cocoa, respectively, to decreases of 16 per cent in rubber and sisal and 17 per cent in coarse wools. The majority of prices fell, however, and there were lower quotations also for coffee, some tropical vegetable oils, maize, butter, meat and jute.

It seems likely that the movements of terms of trade in 1967 were even more unfavourably to developing countries than the year before. The combined index of prices for tropical beverages and agricultural raw materials and oil-seeds fell by seven per cent and the average export unit value for these product groups is likely to have fallen though not by as much.

In contrast, prices of manufactured products were unchanged but were still five per cent than in 1963, while the prices index for cereals—which are the main food import of the developing countries rose by three per cent. Although the actual unit value of trade in rice was less than values under bilateral contracts, in the case of wheat and coarse grains there was little difference between the two.

The terms of trade, therefore, continued in 1967 to move against countries which are deficient in basic grain supplies and are exporters of commodities whose prices fell such as rubber, sisal. coarse wools arabica coffee, certain oilseeds and vegetable oils, meat and jute. Thus. the overall terms of trade for Ceylon, India, Pakistan, Malaysia and New Zeland appear to have deteriorated, whereas those of the Philippines improved and Thailand's probably remained about the same. Countries in whose exports cereals, tropical beverages and cotton are important are also likely to have improved their terms of trade, but those of the meat exporters such as Argentina and Uruguay probably worsened.

Market Factories

World markets for cotton, rice, cooca and citrus fruits were predominently effected by declines in production, while bigger supplies were major market factors for tea, meat, sugar and rubber.

The allowing down of economic activity decreased the import demand for several products in Western Europe but with some exceptions such as wool, the fall in prices reflected more basic factors such as the general excess of supply above demand in dairy products, apples, rubber, hard fibres and forest products. The main factors in rubber were the rise in output and the fuller utilization of new synthetic rubber capacity in centrally planned economies. Similarly, while demand for forest products was restrained by the slow economic growth in Western Europe, too, and the recovery in activity in the United States in the second half of the year did little more than make good the decline in consumption of both constructional forest products and paper that occured in the first half of 1967, the more fundamental market problem lies in the persistant surplus productive capacity for chemical pulp newsprint and certain other paper and paperboard grades.

Apart from the underlying trend in general economic activity however, there were a number of abnormal developments of short-term or long-term importance for the world commodity situation. In the Near East, the war in late spring sharply reduced agricultural exports to some Arab countries and the Viet-Nam war continued to affect world rice supplies.

Sugarcane Virus Control Facts

It is not feasible to control sugarcane mosaic virus with insecticides that kill the aphid vectors or herbicides that eliminate vector weed hosts infected fields.

ARS plant pathologist Natale Zummo and entomologist L. J. Charpentier, in studies conducted at Houma, La., found that these control measures were not effective because aphids can be carried over long distances by air current. Infection can thus be brought from distant fields where insect vector and host weeds have not been controlled. In addition, the aphid vector can infect a plant treated with insecticide in the few minutes before the insect dies.

The study showed the aphids become feeding on mosaic-infected sugareane plants; they lose the ability to transmit the diseased plants.

The aphids remains infective only a short time, but long enough to infect several healthy plants. Also, they can become re-infective by feeding again on a diseased plant.

Fertilizer for . . .

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expected to have been produced in 1967-68. The target of production of rural compost during 1968-69 is about 148 million tonnes.

The coverage under green manuring during 1966-67 was estimated at 8.5 million hectares, while the anticipated coverage in 1967-68 is 8.9 million hectares. The target of coverage under green manuring during 1968-69 is about 10.3 million hectares. Under the urban compost scheme 3.4 million tonnes of town compost were produced during 1966-67 and an estimated 4.1 million tonnes in 1967-68. The target of production for 1968-69 is 4.6 million tonnes. Schemes for utilisation of sewage and sullage are in progress and an area of about 35,000 acres is being irrigated. It is propsed to take up mechanical composting in big cities.

Family Planning Programme is making a Head Way

It is estimated that by the end of December, 1968, the population of India will touch the figure of 52 crores and 90 lakhs. The population of India is 14% of the total world population while it occupies only 2.4% of the total land of the world.

The Indian population is increasing at the rate of 2.5% per Annum. One child is born after every 1.5 second and 2 Crores and 10 lakhs mouths are added to the existing population every year. The experts have estimated that within the next 20 years the Indian population would be 100 crores.

Gap to be bridged

Due to the rapid population growth, we have not been able to enjoy the fruits of the economic developments that have taken place in India after independence. Inspite of our efforts the country has been able only to increase the Food per Capita from 12.2 ounce to 13.4 ounce. The main object of the country wide Family Planning is that in the next 10 years the birth rate may be decreased from 41 per 1000 to 23 per 1000. However, the Family Planning is Voluntary. Everybody is expected to participate in different programmes.

In order to run the Family Planning programme in the country 1882 Family Planning Centres have been opened in the Cities and in the Villages 24366. Besides, 9129 Centres are opened to give advice on the Family Planning.

Ceaseless Efforts needed

By the 10th October, 1968, 4722492 Vasectomy operations took place and 2548932 loops were used. There are several Family Planning methods in operation in which insertion or fixing of loops, vasectomy condom, diafrom, tablets and jelly are included. In the State Government run hospitals, dipensaries and Family Planning Centres condoms are distributed to the married couples free of charge. Arrangements have also been made to make available condoms at the rate of 15 Paisa for 3. Efforts are being made to make available condoms in the villages at 5 Paisas for three.

The Central and State Governments are making efforts to atleast encourage 10 crores married families to voluntarily accept Family Planning method. For this programme, Radios, televisions. newspapers. cinema slides, personal contacts and other methods are being used at different levels. Literature on Family Planning has been distributed to nearly 25 lacs of people. Nearly 125000 trained workers are engaged in this programme.

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Poultry Lays Golden Egg

While Dr. Arjun Singh is considered to be a very good physician in his village Jhandu Singha, he is famous for his poultry rearing in his District Jullundur. He is considered to be one of the best poultry farmer of Punjab. 55 years old Dr. Singh started poultry farming at a time when many poultry farmers were leaving that profession. He is planning to expand his farm on a larger scale. He started the farm with 1000 birds with Rani Seiber and other promissing birds and that was one of the secrets of his success. He has adopted dip-litter system and right from water arrangements to the fillings and from rearing to marketing he follows scientific methods. At present he has got 1800 larger and 4200 chicks. He disposes of the poultry birds immediately after they stop laying eggs.

' When I srarted poultry farming in 1964, I was not sure about the success as in these days chicks of good breeds were not available. Being in this line I always thought for healthy poullry nutrition foods are essential. I always go in for good foods and this is another secret of my success" he said. He spends considerable amount on feeding his birds and he gets very good return. He feeds fish meal, groundnuts, rice-bran etc. Besides he gives calcium minerals and necessary vitamines to the birds, In the season he earns nearly Rs. 500/- per day but even in summer when the production is considerably less, he gets Rs. 200/- a day. Sitting in a small village, he is successfully doing this business and his farm has become a visiting place for many farmers.

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Tariff Commission on Agricultural Tractors

The Tariff Commission submitted a report in october, 1967, on the fixation of fair selling prices of agricultural tractors on the basis of an enquiry undertaken by it under Section 12(d) of the Tariff Commission Act, 1951. Its recommendations are as under :—

The selling expenses including dealers commission should be fixed at Rs. 2,050 for 50 HP tractors, Rs. 1,850 for 35/37 HP tractors and Rs. 1,650 for 27 HP tractors.

No allowance for warranty need be provided for in the selling prices of tractors, in consideration of the fact that adequate allowances for wastages have been made in the cost estimations.

It will be sufficient if, for the next two years the change in the c.i.f. cost of ckd packs due to a change in the rate cahrged by the collaborators and/or any fresh deletion effected at any time is adjusted against the recommended prices of tractors.

The escalation of 57.5%, together with other elements constituting the landed cost already available to the industry as a result of devaluation, provide, an adequate margin to cover the higher cost of manufacture of indigenous components in comparison with imported post-devaluation landed costs of the same components. Therefore, no escalation account of deletion need the allowed where such deletions are replaced by indigenous bought-out manufactured components.

Any increase in the prices of engines locally purchased by M/s T AFE and M/s Escorts over the values already included in the costs, approved by Government, should be adjusted against the recommended prices of tractors.

Variations in the costs of tyres, tubes and also batteries, either due substitution by alternative types or due to variations in prices for other reasons, may be adjusted against the recommended prices of tractors as and when necessary.

Future licensing policy

Since none of the units now in production is anywhere near the economie size, it is expected that future licencing policy would aim at making these units economic and that, if and when there is a revision of this policy, no licences for setting up of new units would be granted for the ranges of tractors now in production as well as any other ranges that may have to be manufactured in the country.

Generally, full account should be taken of the domestic supply potential before entering into any further longterm or substantial commitments regarding import of agricultural tractors.

Rules be framed

Government may give consideration to the suggestions for framing of 'separrte set of simple rules governing agricultural tractors as the existing provisions of Motor Vehicles Taxation are reported to be causing considerable hardship to the farmers.

The domestic demand for agricultural tractors may be estimated at 25,000 Nos. for 1967-68 rising annually by 5,000 Nos. to 40,000 by 1970-71.

A technical study should be undertaken of the engineering specifications of all the present makes of indigenous tractors with a view to identifying such items which could immediately be taken up for standardisation, particularly in the context of the scope for import substitution.

Adherence to the programme of deletions by the indigenous tractor producers should be more strictly enforced.

Government should take effective steps so that the required quantities of rubber tyres and tubes are made available to the tractor industry.

The practice of importing components outside the ckd pack is against the spirit of import substitution. Import snbstitution as a concept should be related to the total quantity of imports made and not merely to the deletions made from the ckd pack which are replaced not by domestic production but by importing outside the pack.

Steps should be taken to ensure that there is no discrimination between tractor producers in respect of the prices to be paid hy them for tyres and tubes.

To meet the requirements of the average Indian farmer, either small tractors or power tillers in much greater numbers than available at present are urgently needed. As for the conventional types within the range of 20 to 50 HP unless the purchasing power of the farmer increases, they may remain beyond the reach of the average Indian farmer for quite some time to come.

It is nccessary that the Land Mortgage Banks should be encouraged to advance funds to the farmers for purchase of tractors.

Bank Interest be reduced

The rates of interest charged hy the Land Mortgage banks seem to be high for poor farmers, The Agricultural Credit Department of the Reserve Bank of India may look into this matter with a view to bringing about an early reduction in the interest charges.

The establishment of Agro-Industrial Corporation recently in some of the States for supply of tractors on higher-purchase terms is an encouraging development and is likely to prove beneficial to the farmers as well as to the tractor industry. Adequate funds should be provided to these Corporations.

Government may periodically review the prices alongwith the availability and quantity of the tractor implements and accessories which are needed for replacement frequently.

The proposal to establish a net

(*Contd. on page* 15)

Planning Commission On Farm Planning

"The fixation of targets and distribution of fertilizers on a scientific basis is essential for a radical breakthrough in agricultural production programme, resulting in increased per acre yields. It is, therefore, necessary to examine the needs of each individual region within a State in terms of potential for consumption based on irrigation, crops grown and response from farmers. The village should form the unit for purpose of planning. Panchayats could play a useful role in planning as well as in implementing programmes of local manurial resources."

These are the main findings of the Programme Evoluation Organisation of the Planning Commission, in its evaluation report on the use of fertilizers and manures in agricultural production.

The study, though undertaken during the Third Plan period, takes into account the recent advance made in the consumption in the country. Its analysis of the growth of fertilizer and manurial inputs of specific crops, examining problems of stepping up its distribution, and understanding the attitudes and response of cultivators to the programme is equally valid even today.

Farm planning, says the report, has made a good start in Package areas as an instrument of increasing agricultural production. The possibility of extending this concept to other areas should be explored. Sustained efforts should also be made to educate all classes of cultivators on balanced fertilization of different crops.

The report calls for effective implementation af demonstration programmes and maintenance of specific technical standards by them. This could be ensured by adequate supervision and, if necessary, reduction in the number of demonstrations. The size of the demonstration plot should be nearer to average size of holding in a village.

The report says a comprehensive and co ordinated working programme was yet to be attempted to many States on supply arrangements and credit extension. The co-operative structure was weak in a large number of States and the loans issued by them were not always production-oriented. Also, farmer's associations and other local voluntary agencies were still to be involved in agricultural production programmes in a large number of States.

Lack of adequate data on soil tests, observes the report, had handicapped formulation of manurial recommendations. Of the 4 373 sample cultivators, only 54 or 1.2% reported having done soil tests and of these, only in a dozen cases the soil test results were made available along with recommendations of fertilizer application.

Referring to targets of distribution of fertilizers, the report says the allocation was stated to be less than the demand in nine States. Most of the States, however, attributed the shortfall in achievement

"Magic Seeds" Says Kolhapur Villager

Mahalsawade is a remote village situated among the lower ranges of the Sahyadri mountain in Kolhapur district of Maharashtra. Recently, the village hit headlines in news papers when 52 years old Shri Ramji Dhondi Patil, one of its farmers, won the first prize of Rs. 2,500/- in State level paddy crop competition of 1967-68 with an yield of 31.67 quintals per acre.

Ramji has been an enthusiastic votary of modern methods of cultivation and has since 1962 consistently won the first prize in taluka level competitions. First in the district to welcome improved seeds, with help from the Extension Officers, he has been able to harvest 73 maunds of paddy per acre, against others output of about 35 maunds in his village.

He says: "I had less than four acres of land in 1945 which brought me an income of of Rs. 250/- a year. Since then, I have passed through several vicissitudes trying my hand at business to supplement my income. All through, my ambition was, however, to acquire more land and make in pay commercially. Through hard work and the 'magic' seeds, I have made good progress".

Today, he owns 20 acres of land and with multiple cropping had built up an annual income of Rs. 23,000 from his farm which grows, besides paddy, sugarcane, wheat, pulses, bananas and vegetables.

A tractor, two oil engines and a 1,5000 ft. long pipeline are among his proud possessions.

to reasons, such as ambitious targets. low demand, and administrative lacunae.

About 90% of the cultivators in the Package districts and 86% in the non-Package areas had knowledge of one type of fertilizer or the other; the actual users among them formed about 68% and 50 respectively. Use of nitrogenous fertilizers, the report states, was proportionately larger, compared to phospatic, potassic and mixture grades.

A large majority of cultivators were unaware of the recommended doses of fertilizers; the highest proportion reporting such knowledge was in the case of paddy growers to the extent of 14.6% only.

The study also highlights that the use of chemical fertilizers should not be to the deteriment of the development of local manurial resources, as these helped soil build up, better moisture retention and also facilitated increased use of in-organic manures. Thus, the report added that there should be better programme planning in the development and use of local manurial resources, The main bottle-necks impeding the preparation of quality compost were the non-availability of suitable lands for compost pits, paucity of material to use for composting and utilising a large part of the cow-dung for fuel purposes.

While green manure cultivation had been widely prevalent in eight States, in many cases the difficulties for not growing green manure were non-adjustability with the existing cropping pattern and lack of irrigation moisture in the soil to support the crop.

The report suggests reorientation of district agricultural officer's work, making them mainly extension functionaries. A separate officer to look after adminisirative and other day-to-day duties may be provided, if necessary. However, the report cautions that in the process of providing specialist staff at the operational levels creation of too many specialists for segments of the same programme should be avoided.

The feasibility of local statutorily entrusting the functions of planning schemes for development of local manurial resources to the village panchayats, the report suggests. needs careful examination. For green manure programmes, evolving quick growing species, advocating dual purpose growing that yield both grain and green manure and raising green manure plants like Glyricidia extensively on field bunds appears to be warranted.

Stressing the urgent need to epuip the average farmer with better technology and skills to minimise the indiscriminate and wasteful application of the limited quantity of available fertilizer, the report says that the integrated approach as conceived under the package of recommendations in intensive development areas seems to be the solution in all areas relevant for fertilizer application.

Mobilising Rural Youth for Agricultural Production and Rural Development

Dr. John F. Boyd
Youth Advisor, U.S.A. Aid, New Delhi

Dr. John F. Boyd while addressing seminar on Extension Research organised by Indian Society of Extension Education, I.A.R.I., U.S. Aid and I.C.A.R. stresses on the need of total moblisation of the rural youth to meet the needs of developing India and emphasises the need of their proper education and reorientation of their out look.

Traditional youth is a period of investment in tomorrow's society : The role of youth is to be educated and prepared for responsibilities of adult life. In the past under the traditional rual life, the parents were the chief teachers and youth learned about farming and home managing from a family and community centred experience. However, this educational method breaks down under conditions of rapid changes in the transition from traditional to modern rural life with complex technology requiring specialised and competent training.

Can we mobilise the latest resources of rural youth ? Can we help rural youth to bring their resources to bear on their own education and on the national development ? Youth must become not only a period of investment in young people by society, but a period of investment in society.

Youth everywhere is seeking its political identity and its role in society and nation building. Left to drift, they become sources of instability and antisocial behaviour. A sound programme for youth will not only serve the needs of youth but will contribute to overall development and stability of society.

Some Basic Points which need immediate attention are firstly how to strengthen rural youth leadership institution and services, with emphasis on agriculture, home science and rural development is required if total mobilisation of the rural youth is to be achirved to meet the needs of developing India and secondly their formal education and out of school education plus all types of rural youth training need to be keyed to the changing needs of a transitional period in rural India.

A large number of rural youth have never attended school or are early 'drop outs". This, together with the tendency of the better educated to leave rural areas. is a serious threat to hopes of raising agricultural production through wide-spread application of new knowledge and techniques.

The suitability of formal education for rural youth is a matter of concern. Formal education is usually oriented towards, urban work and living, thus rural youth toward agricultural and rural life. Schooling is usullay oriented towards college and higher education which few rural youth achieve.

Rural education assumes special importance in relation to the increasing migration of rural youth to urban areas These rural young people. handicapped by lack of education and training are unable to compete effectively with urban youth for available jobs.

As a large per cent of the youth are in the rural areas, the whole nation has an interest in strengthening both formal and out of school education for rural youth.

Seveal factors combine to alienate rural youth towards agriculture as a profession:

Rural youth are taught to want better conditions, their ambitions of life are increased, but little hope is offered towards achieving desired goals in fact of (1) an unproductive traditional agriculture (2) a depressed rural community life with sparse service, (3) adult dominated family life, (4) a general lack of opportunities in rural life, (5) the attraction of city.

Where Youth Stands ?

Since 1952, the Government has moved into the rural youth activities launching a massive established thousands of clubs. A large amount of time and money has been spent. A number of pilot areas were set up to learn how to best carry out a Rural Youth Programme. A number of Organisations have developed rural youth activities. The Centre-State relationship and the goals of the programme have not been clearly defined. The result has been a number of islands of good work without the needed coordinated impact. The time and money spent on the Pilot "How to do it" phase adequate for India to think about taking the next step to the needed total mobilisation of Rural Youth.

A new action programme has been planned and set into motion to assist in bringing about a rural youth programme that can effectively meet the needs of the times. Some progress has been made in giving a new emphasis into the overall intensive agricultural production efforts.

Some barriers to this new approach have been discussed as :—

There must be mutual agreement by decision makers on fundamental issues and legal basis obtained from which to work, The Government of India should clear the way for the needed coordinated nation wide rural youth programme.

Pilot and model clubs, regardless of their quality, will not be enough

to build the institutional framework to meet the requirements of a rural youth programme suited to India's needs.

India has spent enough time in pilot rural youth programmes. The next step needed to delegate responsibility and assign authority equal to the task of moving from the pilot stage to a programme national in scope.

Other general barriers to developing a programme to adequately meet needs of agriculture and rural development that should be considered are :

Lack of undertaking planning by officials and policy makers. Lack of clear-cut authority and responsibility among the agencies organisations concerned with rural youth. Lack of cooperation and co-ordination among all groups. Limited involvement and support by parents and community leaders.

Need of the Hour

Looking from the local community upward through the various levels to the national level, what are the changes needed and what action should be taken to make the new approach work. Some points for discussion :

Develop on economic project base for the local programme. The economic project should be suited to the community and in line with the intensive high yielding varities programme. The young people will not only learn the fundamentals of the new agriculture but in many cases will be able to influence adults also. Since the beginning of Extension Programme 4—H and other young groups have been used as a means to reach millions of adults. It is not at all uncommon for a youth club member to out do the adult farmers of his area. In most cases the adults are quick to take up the new practices introduced through the youth club project.

Develop a well rounded local club programme that keeps in view the total development of the young people. Agriculture production alone is not enough to meet the long felt needs of rural India.

Local leadership and parent cooperation and support are required if the efforts of others coming into the community are meaningful.

Local youth projects and activivities should become a family affair with interest and participation of family.

Club centres should be worked out at the local as well as other levels, to reward members for work well done.

Project activities should develop interest in ownership and participation so that members of the rural youth club will not have the feeling of being a free labour force for the community or in the family operations.

The local leaders of the rural youth clubs should develop a close working relationship with the Block staff and other professional youth workers available to them.

One full time Block worker should be assigned to rural youth work. One District staff member should be assigned to rural youth work. One full time official at the State level should be assigned to rural youth work. A national coordinating organisation is needed.

Trafic commission on agricultural tractor

(*Contd. from poge*)

work of workshop facilities for tractors in selected areas where tractor population is concentrated should be implemented without any further delay as this is an urgently needed facility. In addition, it is also necessary that the tractor producers should extend the distribution network and workshop facilities more widely than at psesent.

The Government has decided to fix the ceiling selling prices f.o.r. destination (rail head) of various makes of agriculture tractors manufaetured in the country, with immediate effect and until further orders, as under.

Name of the tractor			F.O.R. destination (rail head) selling price
Tafe	36 HP	..	Rs. 21,140
International	35 HP	...	Rs. 19.570
Hindustan	50 HP	...	Rs. 22,350
Hindustan	35 HP	...	Rs. 15.710
Escorts	37 HP	...	Rs. 17,910
Escorts	27 HP	...	Rs. 13,840
Eicher	27 HP	...	Rs. 17,400

Railway Concession to Visit N.A.F.

Bharat Krishak Samaj is requesting Railways for grant of concession to its life members to Visit National Agricultural fair scheduled to be held at Bombay, during March-April, 1969.

No sooner it materialises information will be sent to them immediately.

F. A. O. Commodity Review

The value of agricultural trade fell in 1967 because both the quantity and average price of exports were lower.

Developing countries were hardest hit and their foregin exchange earnings from agriculture fell for the second successive year. Trade receipts from some commodities, notably cotton, cocoa and rice, recorded substantial gains but not all developing countries benefited because their export supplies were short. The terms of of trade continued to move against developing countries dependent on exports of agricultural raw materials and tropical products, and on imports of basic foods and manufactured goods.

Apart from the slowing down in economy activity in industrialized countries which reduced demand for agricultural raw materials and forest products, commodity markets were affected by several special factors. The devaluation of the pound sterling and other consequential currency realignments caused changes in the price relationship between some commodities and in the competitive position of some exporters. Though the long-term effects are uncertain, there were some notable repercussions on sisal, tea, wool and sugar markets.

The year also witnessed the prolifera ion of export subsidies over a wide range of products particularly foodstuffs. These produced counteraction from countries which felt their trade had suffered and aroused discussion of the nature of export subsidies and their international effects. The problem reflects the increasing competitiveness of world markets and the emergence of surpluses, mostly in developed countries as a side-effect of national agricultural support policies in period when world prices are falling or stagnant.

Another feature of the 1967 season was the number cereal harvest in developing countries· Though mainly due to good weather, this also reflected the study improvement of farm techniques as well as the introduction of high yielding varieties, particularly in Asia. If these new programmes rcalize their early problems-many problems ramain to be solved-they will affect the long run pattern of trade in food and particularly in food aid. Sizeable food reserves, however, will still be needed to meet year-to-year fluctuations In production.

An analysis of recent patterns of food imports into industrilized conntries indentifies four commodities with high rates of growth-maize, meat, vegetables, and fish products.

In some cases the growth can be expected to slow down once domestic production in importing countries catches up with demand, and demand itself will shift under the influence of rising consumer incomes. Equally, rising living standards will stimulate the demand for several high-valued foods, and, since some of these cannot be produced in the industrialized countries, there should be a morc lasting import demand with favourable opportuni ies for trade of developing countries.

THE SHORT-TERM OUTLOOK

Wheat

Early prospects point to another very good world-wheat crop in 1968-69 in both developed and developing countries. The volume of international trade may be little different from the estimated 1967 68 level of 5 -52 million tons and supplies will continue to be ample in relation to demand.

Coarse Grains

Production of coarse grains in the northern hemisphere probably will be lower in 1968-69 and there should be a revival of the rising trend in international trade. With larger import demand, prices would tend to recover and end-of-season stocks may show a moderate decline.

Rice

Recovery in the current rice harvest to 180 million tons (excluding China Mainland) is expected to ease the severe shortage of the last two seasons, but import demand for current consumption and stockbuilding remains strong in 1968 and rice prices are still exceptionally high.

Fats and Oils

Production of fats and oils particularly of soft oils in which high income countries have a large share, will probably continue to rise in 1968. Output of liquid edible oils may rise by over one million tons oil equivvalent though world production of lauric and palms oil may remain at the 1967 level and that of technical oils will continue to fall.

Milk and Milk Products

Supplies of milk and milk products are expected to be ample in relation to demand in 1968. The butter market situation will remain precarious and measurable to deal with the EEC butter surplus are under consideration. The large supplies of skim milk powder and possibly cheese in developed countries will probably continue to exert pressure on international prices.

Meat

World productin of all categories of meat should slow down in 1968. Beef and veal output in Western Europe will rise less than in 1967 but in North America continuing increases in beef cattle herds should maintain output at a high level during 1968. Pig-meat production will rise in Western Europe and North America though more slowly than in 1967. Output of Poultry meat in both regions should be more in line with demand as broiler producers are expected to reduce output in response to the very low prices prevailing in 1967.

Eggs

Lower prices seem to have checked the growth of egg supplies everywhere so output did not rise much in 1968.

Sugar

Production and consumption of sugar seems likely to remain in reasonable balance in 1968 but world stocks are still large and the late consumption growth has slowed down. Early estimates for European beet plantings for 1968-69 indicate only a small rise in the total area, mainly in the EEC.

Cocoa

World cocoa grindings in 1968 are expected to exceed production for the third year in succession, resulting in a further reduction of stocks. Future output is difficult to assess, but the trend in the world consumption is upward over the longer run if supplies are availble.

Tea

While rising labour costs and diminishing profit margins may limit the expansion of tea output in the main products of Asia, the pace of development has so far been maintained in Africa where costs are lower.

Coffee

The small coffee crop forecast for 1968/69 in Brazil may be indicative of the future level of production there, but implementation of the production goal for 1972-73 to be established under the new international Coffee Agreement will largely lnfluence the future level of world coffee production and prices.

Wine

Bananas

Trade in bananas should increase in 1968 despite some reductions of supply in certain areas in the first part of the year. A strong downward tendency in prices could arise if current expansion programmes of producing countries are fully realized.

Citrus Fruits

Citrus fruit production should recover in 1968-69 and marketing difficulties will probably increase in view of the slack demand in some main importing countries and the continued stagnation of imports into EEC.

Apples and Pears

Shipments of apples and pears from the southern hemisphere will be smaller in the present season. Europe will continue to have excess suppllies of apples and large increases in output can be expected in the next few years. The market is, therefore, likely to remain highly competitive.

Tobacco

Output of the main types of tobacco leaf will probably not change much in 1968. In the United States total individual farm quotas will be below those of 1967. Under normal weather conditions larger crops can be expected in India and Canada but output will probably be reduced in Turkey and Greece.

Cotton

World cotton production is expected lo rise in 1968-69, with a much larger crop in the United States and small increases in the developing countries. Consumption seems likely to increase, however and the volume of international trade will not change much, but there may be continued pressure on prices.

Wool

There will be some increase in world wool consumption in 968 with the recovery in wool usage in the United States and EEC, and a revival in the demand for carpet wools promoted by low prices and technical advances.

Jute and Kenaf

In the short term, little change seems likely in jute and kenaf prices though world imports in 1968-69 may be slightly lower than last year.

Feed the hungry . . .

(*Contd. from page* 6)

Molybdenun

Molybdenum is essential for the proper fuuctioning of the nodule bacteria found in the roots of leguminous plants. These nodule bacteria cannot fix atmospheric nitrogen without all adequate supply of available molybdenum.

Sixteen essentials

These then are thirteen essential elements which are known to be essential for the growth of plant. There are three more elements (carbon, oxygen and Hydrogen) which are obtained by the plant from atmosphere and from water and under ordinary conditions. Three elements are not in deficient supply.

All over the world the considerable differences in soil greatly affect production of food and quality yield. Soils vary in the natural plant nutrient content and each plant has specific nutrient requirement. Deficiencies in the soil are made up by adding properly balanced Chemical fertilizers after carrying out soil analysis tests.

Fertilisers are already being produced in the country by public as well as private sectors projects. However, a wide gap exists between local production and actual requirements. Attempts are being to locate potassim and phosphates in India.

According to estimated demand India require 2.4 Million Tonnes of Nitrogen, 1 Million tonnes of phosphate and 727 Million tonnes of potash by 1970-71. Currently the country's total capacity is 758000 Tonnes for Nitrogen and 328540 tonnes for phosphates,

Programmes for Increasing Agricultural Production

D. V. REDDY

Extension Commissioner, Directorate of Extension, Ministry of Food Agriculture, Community Development and Cooperation,

It is now realised on all hands that if we have to increase agricultural production in the quickest possible time it will be necessary to concentrate our scarce resources men and materials in very responsive and potential pockets so that they yield the best results.

It has been decided that we should not encourage import of foodgrains after 1970-71 and if it is possible, it should be stopped. This is a decision which has been taken at the highest level and if we have to implement this decision successfully we must see that we do not import foodrgains after 1970-71. We have to put in considerable hard work to achieve this objective. The level of agricultural production in our country has been low and it has been mostly due to following the traditional type of agriculture. It will not possible for us to achieve any better results if we continue in the same way of adopting the traditional methods of agriculture. We have, therefore, to take advantage of all advances of modern researches and see that they are translated into action on farmers' fields. Now this is a very big problem which is engaging the attention of all the extension workers and if we have to achieve this we have a proper strategy for the Fourth Plan period. It is now realised on all hands that if we have to increase agricultural production in the quickest possible time it will be necessary to concentrate our scarce resources namely men and materials in very responsive and potential pockets so that they yield the best result in the quickest possible time. During the last five years of the working of the package programme, it has become obvious that this approach is a realistic one and is the only approach that gives us quick result. This approach implies that we must make use of all the known technological improvements and put them through in a definite package of practices to the farmers and make them to adopt all these practices. Given adequate support through supply of essential inputs, farmers will be in a position to produce the desired results and increase the production potential. Now this approach has been conceived as a good one by all and it has been extended to 144 Districts in this country through a programme known as Intensive Agriculture Areas Programme.

This programme has been further strengthened by the identification of a number of high yielding varieties and evolution of a number of hybrids by our scientists. It has been decided that we should take up a programme of high yielding varieties on 32.5 million acres during the Fourth Plan period with a view to achieve an additional production of 18.8 million tonnes of foodgrains. This approach has been considered as the best approach and Government of India are making all efforts to provide the necessary inputs for covering the area. A second and more important thing in our strategy for increasing production is the realisation that it is risky to depend on protective irrigation. If we have to achieve beneficial results, we must have productive irrigation. As you know, crop production cannot be very successful if even one limiting factor comes into play. You might have heard about the new programme of converted Samba in Thanjavur District. In this taking advantage of successful cultivation of Kuruvai crop late in August last year the Madras Government have thought if feasible to have a crop of A.D. 27 in early summer season, harvest it by October and follow it by a short duration Thaladi Crop. This has been conceived by the extension workers in Thanjavur District and a programme for converting six lac acres of Samba lands into double crop area has been decided and all arrangements are being made to see that this programme is successfully completed. Arrangements are also being made to see that the extra production from thts programme is secured with great care and marketed properly. Efforts are also being made to increase the cropping during the summer season. The raising of summer crop in Bihar State was not known. Last year a small beginning was made with 30,000 acres but this year due to the efforts of the State Department the cropping has been extended to 2,90,000 acres. This is a very good effort on the part of the extension agency within the course of one year and Department of Agriculture, Bihar, deserves credit for it. Due to the efforts of the extension workers and working of the various programmes during the last ten years, the farmers have come to realise that the improved agricultural practices are worth adopting and this has created an awakening in them to know more and more about science and technology. I consider this a healthy sign.

Towards A World Food Policy

A detailed report on multilateral food aid is being studied by officials at the United Nations, FAO and other international agencies.

The report was prepared by the UN Secretary-General in co-operation with the Director-General of FAO and in consultation with other interested agencies.

The study says there are two basic problems for developing nations:

(1) a transitional problems of assisting countries that are likely to be unable in the immediately foreseeable future fully to meet their own needs out of domestic production and import capacity and

(2) a longer run problem of bringing into balance those countries' food needs and supplies supported by appropriate international action.

The report says the immediate need for food in many under-developed nations will continue for some time with most of food being channeled through bilateral programmes, although multilateral agencies such as the World Food Programme will have an important role to play.

Food aid, however, cannot provide a solution to the under-lying problem of the developing nations, according to the UN report. This is because of food shortage that call for international aid are not isolated, but are a symptom of the general state of under-development in the countries concerned.

". . . The backwardness of the agricultural sector in many developing countries," the report says, 'has not only kept food production from rising fast enough to match increases in demand, it has also perpetuated the chronic state of under-employment and low incomes, to the detriment of over-all economic development. And few developing countries have been able to afford to import both the needed increases in food supplies and the capital goods essential for their economic development. The absolute imperative of food needs has from time to time forced countries to defer imports of capital goods and interrput development programmes."

The UN study says efforts to solve this food problem must be carried out on a broad front in the context of general economic development. Essential elements of such an approach include, the study says, population policy, trade policy and industrialization policy, just as much as it includes a concerted attack on trouble spots in agriculture. "To be successful such a programme will have to be supported not only by appropriate internal measures affecting the relevant aspects of fiscal, credit, price and foreign exchange policies, but also by suitable external assistance provided in a sympathetic fashion as part of a global strategy for the eli mination of hunger," the report states.

The study notes that in many countries the birth rate is threatening to nullify much of the gains achieved through economic development and higher food production. It is essential, it says, that countries still lacking population plans start them as soon as possible.

Population control, the report says, is the cornerstone of any programme to moderate growth in food demand.

There also is no merit in aiming at self-sufficiency in any and all commodities, it reports, "An optimum use of resources may well require the development of export industries whose earnings would make possible the importation of required food stuffs, "it says. ". . . Measures which improve the capacity of the deficit developing countries to import food on commercial terms will not only help them to solve their food problem and facilitate their development, but will also contribute to the growth of world trade and an improved global use of productive resources."

The UN report says among recent technical advances of special promise are high yielding varieties of cereals. It is of highest priority, the survey says, that the momentum already achieved with the new planting materials be maintained and widened.

An essential part of any programme to raise food output, the study says, is the assurance of reliable flow of supplies and complementary inputs, particularly water and fertilizers, pesticides and implements. Where necessary it is recommended that priority be given to importing farm production requisites. It would be advisable, the report recommends, to authorize the World Food Programme to receive and distribute, along with food, donation of sclected production requisites, especially fertilizers.

Increasing attention also should be paid to so-called 'agro-industries' as well as to rural infra-structure. This involves improving methods of handling, marketing, processing and storage. Policies and institutions also will need to be developed to prevent prices of foods from falling levels at which incentive is weakened or lost.

"There is wide measure of agreement," the UN report says, "that the solution to the food problem of developing countries requires a multi-pronged approach embracing a considerable range of policies at both the national and international levels. The magnitude of the problem and the interdependence of the required national and international measures needed to solve it underscore the urgent need for an integrated approach. Such an approach is most likely to be achieved within an international frame of reference which includes the developing countries themselves, aid giving countries and the international agencies, jointly formulating an agreed set of priorities for agricultural development, and adopting the requisite production, trade and aid policies. The indicative World Plan for Agricultural Development, now under preparation in FAO, will help to provide such a framework. But the problem of agricultural development must be placed in the wider context of general economic and social progress. This will provide one of the major challenges for the next Development Decade."

News from State Samajs

Orissa Farmers Convention

The Orissa Krishak Samaj organised a District Convention of Farmers at Angul in Dhenkanal Dist. on 15-10-19 8 which was presided by Shri Madan Mohan Pradhan, Ex. Deputy Minister of Agriculture and Life Member of BKS. Inaugurating the Convention Shri B. Tripathy, Dy. Minister of Agriculture, Orissa appealed to the farmers attending the Convention to take to scientific methods of farming for higher production. He said that the new technology has brought many good changes and asked everybody to take the maximum benefit of the research findings. He appreciated the work being done by Orissa Krishak Samaj and asked the members to organise more and more educational programmes for the benefit of the Orissa farmers. He also opened the exhibition that was arranged during the Converntion. The Convention was attended by a large number of farmers of the District The Collector and the officials of the Agricultural Dept. also addressed the Convention. Resolutions urging the Government for minor and major irrigation projects, supply of long and medium term loans to the farmers and the safeguard of the prices of agricultural products were also adopted in the Convention.

On 18th and 19th October, 1968, the Phulbani Dist. farmers convention was held which was inaugurated by the Dy. Minister of Agriculture Shri Tripathy and was presided by the Dist. Panchayat Chairman Shri S. Deo. The District Collector, Dist. Agricultural Officer, the State Organiser of the Samaj Shri Rautaroy and many others addressed the Convention.

Similary Conventions at District levels were also held at Sundergarh, Jagatasingpur and Maurabhanja District which were addressed among by others Shri R. B. Misra. Minister of Agriculture and Dy. Minister of Agricultuer Shri Tripathy and passed resolutions.

Amravati Krishak Samaj Holds Annual Conference

Amravati District Krishak Samaj held its annual conference on 10-1-68 at Asegaon Purna under the Presidentship of hri Rao Saheb Patil (Kundkar). Shri Naryanrao Watane, the President of the District Krishak Samaj, while welcoming the guests spoke very highly of late Dr. Panjabrao Deshmukh. the Founder President of the Bharat Krishak Samaj and appealed to the gathering to work together in the interest of the farming community.

On this occasion an Agricultural Exhibition and Farmers' Training camp were organized and the farmers present appreciated it very much.

Shri Narayanrao Watane was re-elected President. It was decided to organize Farmers' Training Camps for compost-making, kitchen gardening etc at intervals. A suitable programme during the Gandhi Centenary was also chalked out.

Some of the important resolutions passed by the annual conference are :

(1) Agricultural University be established at Amravati for Vidarbha and named as "Dr. Panjabrao Deshmukh Krishi Vidyapitha";

(2) adequate prices should be fixed for cotton and import of cotton from outside be stopped;

(3) prices of jowar be increased so as to bring it on par with other non-agricultural commodities;

(4) There should be proper check and control on the ever-increasing prices of fertilisers, tractors and agricultural implements;

(5) Wardha irrigation project should be completed at the earliest in the interest of farming community around the area for increasing agricultural production;

(6) Electricity should be made available at cheaper rate for pumping sets and other agricultural puposes;

(7) Hybrid production centre be opened in rural areas on a large scale to avoid mismanagement in the distribution and supply of hybrid seed to farmers in rural areas etc.

Melghat Krishak Samaj Calls Meeting

While addressing the Annual General meeting of the newly formed Melghat Krishak Samaj in Maharashtra, the Deputy Minister of Forests. Government of Maharashta appealed to the Adivasis (Tribals) to awake from their long sleep and asked them to make better use of the new technology in the field of agriculture and allied subjects. While others have derived all the very good benefit of scientific approach, the farmers of Melghat can not afford to lag behind. It is the time he said that all the farmers should make the maximum use of resources available at their command and also take the benefit of the Government assistance. The meeting was attended by a large number of farmers besides important local leaders.

The meeting was also attended and addressed by the President of District Krishak Samaj, Amravati, Shri N. S. Watane, who told the farmers about the aims and objects of the Bharat Krishak Samaj and the services it has rendered for the welfare of the farmers.

Besides many recommendations, the meeting also passed a resolution requesting the Government of Maharashtra to establish the Agricultural University in Vidarbha. The President and other office beares for the local Samaj were elected in the meeting.

Resolutions Passed By Gurgaon Farmers Forum Executive

A meeting of Executive Committe of Farmers Forum Gurgaon was held on 23rd of Oct. 1968 in which the following resolutions were passed unanimously :—

1. Owing to failure of rains, famine has occured in this district and in order to irrigate their lands the farmers desire to set up a tube-well at the cost of every valuable article but neither the electric connection is easily availble nor any consideration is given to the applications already pending since long. Haryana Government has announced to set-up 10,000 tube-wells in the State. Resolved that 'Top Priority' be given to electric connections for tube-wells over electrification of villages for home consumption.

2. Government has stopped giving Kisan Khad and Ammonia Sulphate on taccavi loan and has allowed the distribution of Urea, Potash and Dia-Amonium Phospahte on taccavi, which being costly, the ordinary farmers are not willing to purchase. There appears a great deal of black marketing in it. Resolved that this matter be brought to the notice of the Government that the order to grow more food to improve the economic condition of the farmers, these evils should be remedied.

3. Owing to occurrence of drought in the district, taccavi loans be liberally granted to the farmers and especially for fodder, price of which has risen high, for maintenance of their cattle-wealth. No recovery of taccavi loans either by Government or banks should be suspended. The Mortgage Banks be directed to give maximum loans for tube-wells and land revenue in the affected areas should be remitted as the Kisans do not receive any compensation for their damaged crops.

4. There is a general complaint regarding the Forest Department that they first denotify the previously occupied land and again notify its acquisition without the consent of the owners and its proper utilisation. Moreover it has been noticed that wherever the land or mountain have been taken for afforestation, the Rangers and Foresters have made a source of their income and have usurped the rights of the owners. A sub-Committee consisting of Ch. Hari Kishan, ex-M.L.A., Ch. Sumer Singh, ex-M.L.A., Seth Ramkishan and Shri D.D. Gupta, Secretary, is appointed to enquire into such cases. The committee can also coopt. any other member. Capt. Charan Singh (Secretary) would also join it at times.

5. A sub Committee consisting of Lt. Col. Tara Chand, Ch. Hari Kishan, ex-M.L.A. (Convener) and Ch. Sumer Singh, M.L.A. is appointed to assess the loss caused by Gochhi drains.

6. In spite of the fact that this forum has passed resolutions against the inefficient system of seed distribution and has brought it to the notice of the Government many a times, this system has not been properly improved. There is mixture in seed upto 25% to 30%. It was noticed that at the time of Kisan Mela at Hissar, Agricultural University Campus did not distribute good improved seed. It has badly affected the farmers. Moreover Pea seed (Perfection) was not good. Resolved that this matter be brought to the notice of the Government. A member of the Farmers' Forum be included in the Seed distribution Committee, S. Nahar Singh, Vice President be considered for this district.

7. Now a days, tyres, tubes and spare parts of tractors are not available and can only be had in black market which causes loss to the farmers. As agency for the sale of these parts be started in this district where they can be provided at controlled rates. The Secretary of the Forum be also informed the time of distribution.

8. There is a general complaint that Kerosene oil is mixed with diesel oil by depot holders. This mixture causes damage to the engines of the tractors. In order to avoid this petrol pump dealers should not be given licences for kerosene oil and proper check should also be made of their stock.

9. There are some villages such as Badshahpur, Aurangabad, Sondh etc., where water remains standing and the land is not available for cultivation. Government is requested to make permanent arrangements to drain out the water and a small bridge be constructed near High School at Badshahpur.

10. Sanpki Nangli Bund is in broken condition. After the repairs and levelling sufficient land can be reclaimed for cultivation. The Deputy Commissioner may kindly be requested to order its repairs.

11. There are some approach roads in the district, which are lying incomplete although their beneficiaries have deposited their shares in P.W.D. Department. They are neglected owing to some political pressure and money is spent on unimportant roads. This shakes the faith of the people in the Government. The Secretary should obtain a list of such approach roads to bring it to the notice of the Goverment.

12. In order to follow up these resolutions and to get their implementation, an action committee consisting of Ch. Hari Kishan, ex-M.L.A., Ch. Sumer Singh. ex-M.L.A., Ch. Attar Singh, President, Ch. Ganga Lal and Seth Ram Kishan is formed with Ch. Hari Kishan as convener. This committee can coopt. any other member also.

13. Resolved that deputation of this Forum, should wait on the Honourable Chief Minister to explain their grievance on his visit. The Secretary should make a request to get the time fixed for such interview.

(*Cantd from page* 4)

best month for sowing Rabi wheat. It has also other defects of TN-1 such as the dwarf size which results in submergence of the plant under water. IR-8 takes roughly 3½ months from the time of transplanation to harvest. It is also said that fodder from this variety also suffers from many of the drawbacks of TN-1. The major drawback seems to be that the longer gestation period affects wheat yields also.

We can assess the impact of the H.Y.V.P on agricultural production, even by looking at trends in agricultural production in the last four to five years, While our internal wheat production has increased from 12.3 million tonnes in 1964-65 to 16.6 million tonnes in 1967-68, our rice production has gone down from 39.4 million tonnes in 1964-65 to 37.9 million tonnes in 1967-68. It shows that while we have been able to achieve something like a breakthrough in the case of wheat, in the case of rice, our technology does not seem to have made any impact on production.

IMPLICATIONS

In the case of wheat, we have been able to find a seed which is really high-yielding, in the sense a seed which can give as a quick breakthrough. We have not been able to find a similar high-yielding variety in the case of paddy. Our experience with high-yielding paddy seeds shows that while the imported varieties could not help us to achieve a breakthrough the improved local variety (ADT-27) which is being used in Tanjore has really given us a yield which is substantially higher than the local variety. Similarly our experience in Aligarh District shows that improved local variety of maize has done better than hybrid maize.

This poses a question whether we should continue to depend completely on high-yielding varieties seeds which have been successfully used in other countries or should try to develop our own high-yielding variety. It is not out of place to mention that in agriculture also, as in the case of industry, we are trying to import technologies from other countries without taking into consideration the major fact that the socio-economic problems of these countries are different from those of ours. If we want to develop our agriculture quickly, it is necessary to develop our own technologies keeping in mind the local circumstances and adopt them according to vartiations in local conditions. Let us give opportunities to our technical personnel to develop technologies instead of importing techniques from other countries alongwith their technical personnel. If countries like Mexico, Philippines and Taiwan have been able to develop their own high yielding varieties, there is no reason why Indian scientsits should not be able to do the same. Perhaps because of the vastness of our country and of regional variations in geographic and climatic conditions, it may not be enough to have only one high yielding variety. Whether it is of the TN-1 type or of IR-8 type, it may not prosper in all parts of the country. It may be necessary to evolve a separate high-yielding variety for every homogenous region. It may also be necessary to have well-equipped seed research experimental stations in each homogenous region.

So far both administrators and scientists have been looking at the High-Yielding Variety Programme. only from the production angle, without considering its more important human side. The emphasis on the production aspect alone would not mean much.

IMPORTS AND SELF-SUFFICIENCY

Our success in the case of wheat has not meant much from the point of achieving self-sufficiency, In 1967 which was a year of bumper harvest, our output of foodgrains was nearly 25 million tonnes higher than in 1966-67 when production was substantially lower. In that year we could manage with an import of approximately 10 to 12 million tonnes of wheat. Even in the bumper harvest year when availability of foodgrains from domestic sources alone was higher by nearly 13 million tonnes, after taking into account the total availability of foodgrains including imports, we imported considerable quantity under the PL 480 Programme. Almost the entire import is accounted for by wheat in which we have attained something like a breakthrough. Obviously, this shows that we may not be very serious about achieving self-sufficiency in food and doing away with imports. If we are really serious about it we should have managed without any imports at least in the year of bumper harvest,

Why did we import substantial quantities of wheat under the PL-480 Programme in the year of bumper harvest ? The reason seems to

Panjabrao Krishi Vidyapith

It is gratifying to note that Maharashtra Government accorded its consent to name Vidarbha, Agricultural University as "Dr. Panjabrao Deshmukh Krishi Vidyapith" in the sacred memory of Late Dr. Panjabrao Deshmukh, the founder President of Bharat Krishak Samai.

Convention & Seminars

It has been decided to hold Seminars on different Agricultural Subjects during. Agriculture Fair and Convention Scheduled at Bombay.

All the members of Bharat Krishak Samaj are rcquested theresore, to send their suggestions on different topics to be included in Seminars.

be that the rupee counterpart funds created by PL-480 imports are available for financing India's Plans. We are depending on other countries not only for our foreign exchange, but also in respect of "rupee resources". If these imported "rupee resources" are not available, the Government may have to face the dilemma of stepping up internal taxation. In all probability the incidence of taxation is likely to fall on the rural sector which has been given a series of concessions like the abolition of land revenue instead of mopping up the surplus income in the agricultural sector.

The Government have taken a series of steps in regard to agriculture, which are not consistent with the social and economic objectives laid down in India's Five Year Plans. We have largely depended on progressive well-to-do cultivators for implementing the High Yielding Variety Programme. The extent of dependence upon the well-to-do-cultivators can be seen from the following Table.

Now "Rejobia Culture" to Aid Farmer

Production of "Rejobia Culture" an active organic substance, has caused a revolution in the fertilizers world. It can be safely used instead of Ammonia and Nitrogen based fertilisers to a very great extent. Indla, for the first time, has started its production on commercial scale.

'Rejobia Culture' will be soon available in small packages costing only Rs. 5/- quite sufficient not only to recoupe ferlility of 2.5 Acres of land but to retain its potentiality to have next crop without using any other fertiliser or manure.

Experiments in India obroad any show that such type of Active organic substances can produce 80 to 150 pounds of nitrogen in a single acre of land which is quite sufficient for several crops.

These organisms cause modules on the roots which obtain nitrogenous substances for plants but they themselves thrive on the substances Sucked by the plants without causing any harm.

Table 5—Participation in HYV Programme

	Size of Holdings (in acres)				
	Up to 5 acres	*5-15 acres*	*15-25 acres*	*Above 25 acres*	*Total*
		Saharanpur			
Number of participants	2	32	14	13	60
Size of land cultivated	4.34	306.16	258.71	558.34	1127.55
Land irrigated	4.34	297.66	249.86	555.66	1107.54
Area under TN-1	0.84	23.56	14.08	26.58	65.06
		Amritsar			
Number of participants	1	24	11	26	62
Size of land cultivated	4.50	211.00	208.00	1110	1533.50
Land irrigated	4.50	198.5	199.00	1099	1501.00
Area under TN-1	1.00	29.87	20.00	58.74	109.61

The progressive cultivators really represent the upper strata of the rural society. While a socialistic pattern of society is said to be our goal, we are doing things which defeat the very purpose of socialistic pattern. Government resources are being diverted for strengthening the financial position of rich farmers. This will only widen the income disparities. While implementing the new agricultural strategy, we should not lose sight of the human aspect of the problem and its related distribution aspect.

Nearly 70 per cent of the population is dependant upon agriculture and most of them are small agriculturists. There is no immediate prospect of transferring this large segment of our population to other branches of economic activities. The responsibility of providing livelihood to the bulk of the population will continue to depend on the agriculture sector. This is a hard fact. Any agricultural strategy, whether it is new or old, which does not aim at improving the lot of small cultivators will ultimately lead us nowhere.

TOBACCO EXPORT GOES UP

Exports of Indian tobacco to Japan have doubled in the last two years. More than 33,000 quintals of tobacco have been exported so far as against 16,000 quintals in 1966. A two-member delegation of the Tobacco Export Promotion Council visited Japan recently and found considerable scope for greater export.

Exports of cotton textiles have picked up this year after a decline in the last two years. Exports between January and August this year stood at Rs 60.44 crore, Rs 10 crore more than in the corresponding period last year. Exports of cotton-piece goods to Indonesia, Sudan. United Kingdom and the European. Economic Community went up and accounted for Rs 40 crore. an increase of about Rs 6.5 crore.

Shipment of apparel and cotton yarn also went up by Rs 2 crore each in the first 8 month of the current year.

In the past five years, export of sea-foods registered a five-fold increase. While in 1962-63, the value of sea-foods exported amounted to about Rs 4 crore, in 1667-68 it was Rs 20 crore. The expectations are that in the Fourth Plan, with the commissioning of large-size trawlers for deep sea fishing, exports will be doubled.

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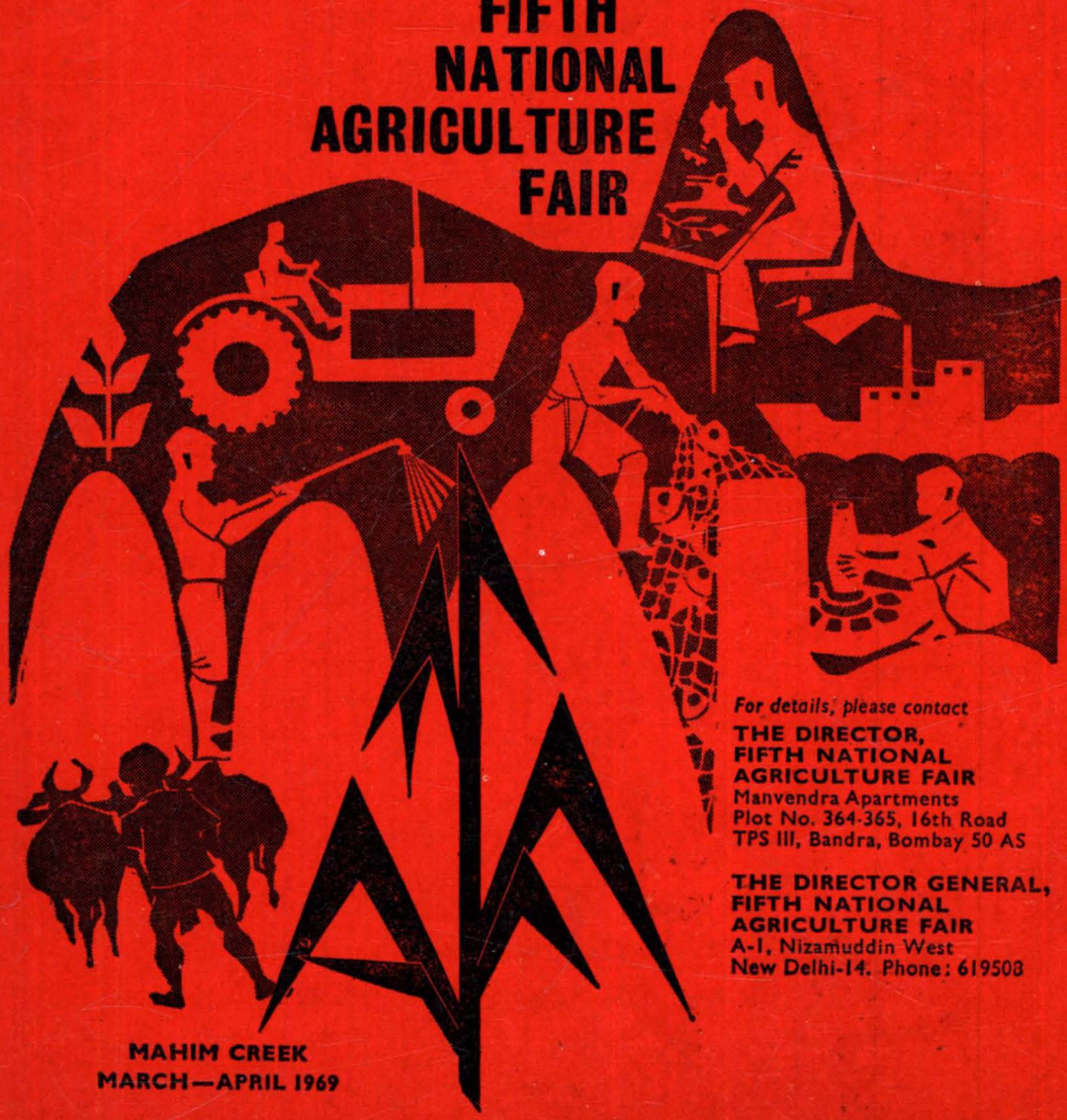

MAHIM CREEK
MARCH—APRIL 1969

For details, please contact

THE DIRECTOR,
FIFTH NATIONAL
AGRICULTURE FAIR
Manvendra Apartments
Plot No. 364-365, 16th Road
TPS III, Bandra, Bombay 50 AS

THE DIRECTOR GENERAL,
FIFTH NATIONAL
AGRICULTURE FAIR
A-1, Nizamuddin West
New Delhi-14. Phone: 619503

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