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In this Issue

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Extracts from the reports of some of the members of the Indian delegation that visited U.S.A. in 1965

The sixth group of the Indian Farm Leaders visited the U. S. A. from 14th July to 10th September 1965,at the invitation of Farmers & World Affairs Inc., The brief reports of their tour in some parts of the U. S. A. in Ohio, Missouri, Oklahoma and California States have been published in the Krishak Samachar of August and September 1965. The following are the extracts from reports of some of the participants:

1 Shri G.S. Patel (Gujarat), Leader of the group

Typical Characteristics of American Farmers

"We, Indians, generally are under the impression that American farmers are very rich and generally the rich people are not accustomed to or are fond of physical labour. But to our astonishment and admiration we found, wherever we went in America, the American farmers putting on coarse blue attire and working very hard in the farms unmindful of heat, cold and rain. U. S. A. is three times as big as India, while the population is less than half. Only 7% of the American population is engaged in farming as against 70% in India. As such, the land holding of average American farmer is comparatively very big, ranging generally from 100 acres to 1000 acres. Though the holding is very big the American farmers hardly employ labourers. All the agricultural operations are undertaken by the farmer-family itself. On account of high standard of American living, average farmers cannot afford to hire labourers also. But even the big farmers who can afford and are employing hired labourers, do not stand aloof but very willingly join in the physical daily toil. Besides, physical labour, American farmers are very studious. They regularly read books, magazines and periodicals on various aspects of agriculture and animal husbandry and learn many things from their radio and television and keep themselves informed and in touch with the latest developments and researches in the field of agriculture. American Government and the Farmers' Organisations are vigilant to pay heed to farmers' demands and difficulties and, as such, since the last 40 years, arrangement are gradually so made that whatever the farmers want in form of financial credit, improved seeds, agricultural machinery, insecticides and implements, fertilizers, marketing facilities, easy means of communications, technical advice, incentive and remunerative prices of agricultural produce etc., are all now made available to American

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farmers almost for asking. The vastness of the land holding and all other facilities made available to the farmers have contributed tremendously in uplifting American farmers socially, economically and politically, And in turn the farmers have made the U.S.A. the granary of the world."

"The American farmers do not stay in villages or cities. They stay on their farms which may be at a distance of 10 to 30 miles away from any near village or town. Though staying on the farm, the American farmers have cosy houses with all amenities of electricity, hot and cold tap water supply, gas (at many places), air conditioning, refrigerators, telephones, television sets, cars and good roads. All these amenities make American farmer contended, comfortable and happy with his farm life. As for the daily life of American farmers, morning and evening chores attracted and impressed us very much. Even the small school going children have also some household work to do. This brings punctuality orderliness and dignity of labour in day-to-day working of the farm families."

"American farmers are very well conversant about the nature and content of their soil and so they know how and to what depth the land should be ploughed, what seeds should be sown what crops and how they should be raised what type of and how much fertilizers should be used, how to protect the plants and water them, and ultimately how and when to harvest and fetch the highest price of their farm products. Scarcity of agricultural labourers and intensive education and training in agriculture has mechanised American agriculture and developed scientific and technological out look among the farmers. This has tremendously contributed in enhancing the agricultural production two to three times than what it was some 50 years ago. Though only 7% of the American people are engaged in agriculture the out put has gone up so enormously that the U.S. Govt., under the apprehension of over production and consequent fall in prices is trying to lower down agricultural production by implementing various schemes such as keeping the land fallow and to subsidise the farmers on such account".

Lesson of American Agriculture for Indian farmers

"From American methods of agriculture we have yet to learn many things. Though their farms are vast and agricultural machinery is gigantic, which we cannot achieve in the near future there are many things which we can put to immediate practice. To get the soil analysed and know the ingredients thereof cannot be said to be impossible or beyond our reach. If we can supply improved seeds, and required chemical fertilizers of adequate quality and quantity, make the the Indian farmers familiar with the soil conservtion and plant protection methods and give them enough agricultural finance, provide easy technical advice and communication. incentive and remunerative prices of agricultural products and several marketing facilities, we are sure, under the present situation, the enthusiastic Indian farmers could double the production within a very short period in not too distant future. Similarly, if properly organized and looked after, our cattle wealth also can be improved which can be an additional advantage to the Indian farmer. By providing improved stud-bulls and introducing system of artificial insemination and better feed, the cattle wealth can be very well improved. In India poultry farming has not yet attracted attention of the farmers as much as it has done in U.S.A. This can prove to be very remunerative supplementary occupation for the farmers. Some thing should be done to popularise it. American system of cattle-feed if adopted—and fortunately enough is being adopted on a modest scale at present—can contribute considerably in cattle improvement in India."

Co-opratives in the U. S. A.

"We presumed that in a country like U. S. A. where the industry and economy are based on individual and free enterprise the cooperative activities and institutions may not have any place in community life. But we were surprised to see very big and very ably managed co-operative institutions providing and extending inumerable facilities and safeguarding the interests of the farmers. The farmers, too, understand the services of the co-operatives and are ever vigilant to protect and strengthen them. The farmers of India can draw a good lesson from the successful co-operative activities of the U. S. A."

2 Mrs. Jaya Arunachalam (Madras)

Industrial Development :

"Agricultural mechanisation is one of the special techniques that is responsible, along with many others, for enabling agriculture in U.S.A. to make a significant contribution to the economic development of the nation. Other techniques of the same type are production of artificial fertilizers suited to the needs of the farmers, development of processing industries fot the preservation and packing of agricultural commodities and many more of the like. By making full use of such resources which the industrial development has placed at his disposal, the farmer has been able

"Dr. Punjabrao Deshmukh Memorial Fund"

The Governing Body, at its meeting held at Savda (Jalgaon) on 13th August, 1966, decided that a fund should be opened in the name of the late Dr. Deshmukh, for setting up suitable memorial/memorials to him. The minimum amount of donation fixed by the Governing Body for Life Members of the Samaj is Rs. 10/-. Bigger amounts are welcome. All members of the Bharat Krishak Samaj, whether Life or Ordinary, and all well-wishers of the late President, are requested to contribute to the Fund liberally. They should send their donation to the Secretary, Bharat Krishak Samaj, A-1, Nizamuddin West, New Delhi-13, by M. O. or Crossed Cheque as early as possible The remittance should be clearly marked 'Dr. Deshmukh Memorial Fund'.

to take on his shoulders comparatively huge production burdens: it would not be far wrong to say that the prosperity and economic balance of the country is largely due to the farmers' ability to remove the responsibility for food production from a large proportion of his fellow-countrymen, releasing them for employment in other gainful occupation. Agriculture is the major customer for goods and services produced by industry thus contributing to the nation's industrial growth, and at the same time, helping itself to raise its own level of productivity."

Agricultural Development in U.S.A

"It is really surprising that a country with an economy, which was predominantly agricultural like ours with about 70% of the population engaged in agriculture, should with in the space of a century have so changed as to increase their production five-fold and at the same time, diminish the pressure on land to about one-tenth. Today only 7% of the population are engaged in agriculture, producing all the food that the nation requires. It is said that one farmer produces sufficient food for 29 people at home and abroad."

3 Mrs. Usha Deshpande (New Delhi)
Ambition and hard-work

"My report of this area would be incomplete unless I mention, even briefly, about my host and hostess. I had the privilege of staying with Mr. & Mrs. Arthur Williams. They were participants in the 1965 group of U. S. Farm Leaders that visited India. What I want to stress is that they are a negro couple and have six children, and still about twenty years ago owned nothing more than four acres of land. The Williams had an ambition—an ambition to educate their children and earn more to improve their standard of living. It was a real fairy tale to hear Mrs. Williams tell me how hard they worked and how little they had to eat when one of their kind neighbours, who had a large kitchen garden used to give her some fruits and vegetables for the children. The Williams, merely by dint of hard work and ambition, have now a fully mechanised farm of 650 acres run on most modern lines. When I was there, Mr. Williams was constructing a beautiful large farm barn. He told me that as soon as this was ready, he intended building a four bed-room modern house. The Williams were always ready to help me and do everything for me. I got nothing but love and affection from them. May God bless them and bless their hard work with all the fruits they deserve so well. Ambition and hard work seemed to be their motto which most of us in India need to adopt."

Problems of American Society : Delinquent Children—Visit with Mr. & Mrs. Nick Sekich, Longmont, Colorado

'Mr. Sekich is a farmer, doing farming on over a thousand acres of land. He is God—fearing and hard-working. Mrs. Sekich is a social worker who has licence to keep twelve delinquent boys in her house. At the time of our visit she had only six boys from the ages of 12 to 16. Unlike India, America does not have delinquent houses where children are kept away from the rest of the society, away from the normal children of their age like prisoners. As soon as a delinquent child is observed he is taken over to the Social Welfare Home. The Social Worker immediately contacts a foster home, where the child is taken away. Complete investigations and enquiries are made in a couple of days and then the child is handed over to a permanent foster home. The lady in-charge of the home looks after the children like her own. The children are encouraged to go to normal schools and lead a normal life. Mrs. Sekich was constantly anxious about the welfare of the boys she had in her house. She cooked their meals, washed their clothes and saw to all their comforts. Once a week, the boys were allowed to go to the movies and for swimming. She drove the boys in her car to school and then drove them back home. For all the work these boys did to help the Sekich family on the farm or with the poultry they were paid like any other farm labour. This money the boys used as their pocket money. Mrs. Sekich was getting $50 per month per boy. One is inclined to think her job to be easy and good, but I am sure she was spending the whole amount on them and not keeping a single cent out of it as profit for herself. The responsibility she had to shoulder was tremendous. Only a person with lot of spirit of self-sacrifice and patience could do a job of this kind. Never did she feel absolutely at rest and peaceful. Quite often on the walls could be

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Award of Prizes for Life Membership Enrolment and other Organizational work during 1965-66

As in the previous year, the following awards will be made : The enrolment and other work done during the period from 1st April 1965 to 15th December, 1966 will be considered for awards :

1 (*a*) Dr. Rajendra Prasad Rolling Shield and Rs. 500/- cash to the State Krishak Samaj for enrolling the highest number of Life Members.
   (*b*) Cash award of Rs. 500/- to the State Krishak Samaj for enrolling the second highest number of Life Members (Minimum 250 Life Members).
   (*c*) Cash award of Rs 300/- to the State Krishak Samaj for enrolling the third highest number of Life Members (minimum 150 Life Members).
2 Cash award of Rs. 500/- to the district enrolling 50 and more Life Members.
3 Gold Medal (14 ct.) to the individual enrolling 100 or more Life Members.
4 Silver Medal to the individual enrolling 50 and more Life Members.
5 (*a*) Certificate to individuals enrolling 25 and more Life Members.
   (*b*) Certificate of Appreciation for outstanding organizational and other work.

The Governing Body, at its meeting held on 13th August 1966 at Savada (Jalgaon), also decided to award a Trophy to the State Krishak Samaj for all-round performance. to perpetuate the memory of the late Dr. Deshmukh.

seen marks of extinguished cigarettes. We saw a lovely table with leg broken. On enquiring we found that one of the boys, in a fit of temper had just smashed it. Instances of breaking crockery in a fit of anger, expressing resentment, were also the foster parents had to go through all the trouble of finding them out. Yet the satisfaction of doing something for the boys, mostly from broken homes, was a great reward for Mrs. Sekich."

Problems of Divorce : work of Miss Boe, Dirccter of "Family Service" Madison, Wisconsin

"We discussed with her (Miss Boe) mainly the problem of divroce. She explained to us how her agency tried to prevent the breaking of families. She said that they encouraged young men and women who were having trouble to go to them and discuss their difficulties. In many cases the husband and wife came together and some times alone. On the whole, she felt that it was the young men who were more keen to settle the affair than the women and in most of the cases it was found that the troubles and problems were more or less imaginary and with some guidance the couples were able to tide over the crisis. Miss Boe attributed the high rate of divorce in America to early marriages."

Characteristics of Ameriean People

"The group during its stay of two months, observed that the people of America are extremely hard-working. The work with machines on their farms, in the in home and practically everywhere. The machines do the work for them in a matter of minutes, which would otherwise take hours. But to operate these machines that work fast, the people had also to work like machines. They could not afford their expensive machines to lie idle, and so they themselves could not afford their expensive machines to lie idle, and so they themselves could not afford to relax, except in the evenings when they had finished the day's work.

Among other characteristics of the American people that impressed us are their remarkable cordiality, friendliness and hospitality. Our hosts did evrythings to make us happy and comfortable and devoted a good deal of their time to take us as much as they could during our short stay. Invariably, before we went to new hosts, we felt reluctant to stay with strangers, i. e., the new hosts, but very soon we started liking them also, so much so that at the time of parting we had actually to force ourselves to say "good bye". The hour of parting was always sad.

"Another thing that I noticed was that the American are very good at brushing aside their sentiments, sorrows etc., so that their work may not suffer. People of other nationalities, who do not know them, may take them to be quite matter-of-fact. Even when there is a death in a family, unlike most Indians, they do not suspend their work for days and sit at home to observe mourning. Yet, it is not that they have love for their kith and kin any the less than we do."

"Sense of cleanliness, and orderliness, generally is remarkable. One hardly sees any place littered with filth or pieces of paper etc. Their picnic spots are as clean as any can be. It was observed that after a picnic was over the whole place was cleaned up immediately."

"One very noteworthy thing about the Americans living in rural areas is that about 75 percent of the rural people are complete teetotallers."

"yet another great quality of theirs is the dignity of labour. No one hesitates to do any type of work. A man is always proud of his work profession and is free to mix with people of other professions. We in India lack this quality very much. I should like to add a word about the women of America. We noticed right from the beginning that in America it is the woman who is the pivot round which the society moves. She is the person who is always up and about. Man is busy earning money. The running of the house the education of the children the social functions, etc., are all seen to by the woman".

TAICHUNG NATIVE-1 PADDY SUCCESSFUL IN ANDRHA PRADESH

Hundreds of farmers of West Godavari District of Andhra Pradesh are highly pleased with the preformance of the new high-yielding dwarf paddy variety—Taichung Native-1, which has given them a yield of two to three times of what they normally get from their local varieties.

Last rabi, Taichung Native-1 was planted for the first time in over 1,600 hectares (4,000 acres) of paddy land. The district become richer by about 4,000 tons of extra grain.

Every farmer who grew this variety in *dalua* (rabi) seasson obtained increased yields. Shri Kommareddi Narendra Babu of Potunuru and Shri Nallaparaju Pullam Raju and Shri G. Satyanarayana Raju of Srungavruksham obtained on an average 7.500 kilos of paddy per hectare (6,600 lbs. per acre). The highest yield was recorded by Shri Kottapalli Pullamraju and his son Nagaraju and it was 8,000 kilos of paddy per hectare (7.000 lbs. per acre). They got a net income of Rs. 11,000 from their 3.25 hectare (8 acre) plot.

Another farmer K. Narendra Babu of Potunuru obtained a yield of about 7,000 kilos of paddy per hectare (6,200 pounds per acre) from his 14 hectares (35 acres) of Taichung Native-1, as against the 32,000 kilos per hectere (2,8000 lbs. per acre) from the local improved variety SLO 16.

All these farmers were convinced that given the proper attention through improved practices, the new variety could yield more paddy than has ever been harvested anywhere in the district. They were also aware that the variety had a weakness when it came to blight disease. They had been alerted against this disease, and had strictly followed the plant protection schedule recommended.

They had sprayed Streptochlor mixed with copper fungicide four

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PADDY—ROUND—THE—YEAR

Teaching and tilling are professions poles apart—but to Narasimha Raju both are close to his heart. And this teacher-cum-tiller has a unique agricultural achievement to his credit.

Narasimha Raju raised three crops of paddy last year—harvesting 116 quintals a hectare from his farm in Rayalam village in West Godavari district in Andhra Pradesh. Normally, farmers in this district raise two crops in a year : the first between June and November; the second between January and May.

Raju got the time for the third crop by choosing SLO-19, a quick-maturing variety for his second crop two months earlier i.e. in September. Thus he was able to utilize the period from September to December for growing the third crop.

But Raju did not just raise three crops. He grew good crops, thanks to the advice and help of the extension workers. From the nursery stage to the harvest, Raju adopted improved practices.

For example, Raju took special care to manure the first crop well and take timely plant protection measures.

He applied 2·5 tons cattle manure per hectare at the nursery stage. To the main field,he gave 22·5 tons cattle manure,125 kilos ammonium sulphate, 250 kilos superphosphate and 55 kilos muriate of potash per hectare. Three weeks after transplanning, he added 50 kilos ammonium sulphate nitrate and 50 kilos urea per hectare.

He had treated his seed with agrosan G. N. still, he sprayed the nursery twice with endrin. Again before transplanting, he dipped the seedings in endrin solution. He also gave one endrin spray and two parathion sprays to the standing crop.

"I was also very careful about irrigation. Every fourth day, I drained the field and let in fresh water. I never allowed the water level to rise higher than five to eight centimeters", said Raju.

All this paid Raju well, His paddy plants gave 15 to 20 tillers each, whereas his neighbours' fields each plant had hardly eight to ten. The crop gave 47 quintals of paddy,

Raju did not waste any time. Three days before the harvest, he sowed sannhemp in the field. When the crop was six feet high, he cut the top three feet for use as fodder He ploughed in the remaining part of the plants. He used no other fertilizer for he knew his second crop would benefit from fertilizers given to the first crop. He harvested the second crop in mid-September getting 37 quintals a hectare.

For the crop, Raju chose as many as five varieties : Taichung Native, Chinan-2, Ptb-10, IJ-4339 and CH-45. His reason : to find a variety best suited for his field.

Raju had ensured that seedlings for the third crop were ready as soon as the second had harvested. He transplanted the seedlings five days after harvesting the second crop.

This time he fertilized the crop heavily—34 quintals paddy-straw, 41 quintals calotropis leaves, 19 tons water-hyacinth, 6 quintals pig manure and 6 quintals superphosphate per hectare.

To the plots where Taichung Native-1 and Chinan-2 were sown he added 345 kilos of ammonium sulphate plus 83 kilos of urea and 322 kilos of ammonium sulphate plus 83 kilos of urea respectively.

He gave each of the other three plots 35 kilos of urea and 85 kilos of ammonium sulphate per hectare.

The crop from the five plots gave Raju an average yield of 32 quintals per hectare.

With his three-crop-a- year achievement on the farm, Raju is still a modest man that he is as a teacher. "Any farmer ean take three crops in a year," is what Raju tells all.

(Farm Feature No. 2/66)

Foodgranis Policy Committee invites Samaj's Views

The Union Ministry of Food & Agriculture, has set up a Foodgrains Policy Committee under the chairmanship of Shri B. Venkatappiah to recommend the policy regarding procurement, distribution and movement of foodgrains in the country. The Committee invited the views of the Samaj on these matters Accordingly, a Delegation consisting of the following met the Committee on 25th July, 1966.

1 Capt. Charan Singh, Punjab
2 Shri Satwant Singh, Punjab
3 Shri V.V. Patil, Maharashtra
4 Shri M.C. Bondaria, Madhya Pradesh
5 Shri R. B. Deshpande, Secretary B. K. S., and
6 Shri Om Prakash, Asstt. Secratary, B. K. S

The Delegation amongt other things, stressed upon the Committee the following points :

Zonal system

1 It kills the incentive of farmers of surplus States by artificially depressing the prices.
2 Consumers have to pay unduly high prices in deficit States.
3 It leades to reprisals from other States, as in the case of Gujrat.
4 It leads to anti-social practices like smuggling.

Procurement

1 Levy system is very troublesome to producers.
2 If necessary it should be on rational basis.
3 Farmers owning 5 or less acres of land be exempted.
4 Provision should be made for wages to be paid in kind to labour, seed for their own use, & personal consumption.

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UREA IN PLANNED DEVELOPMENT OF INDIAN AGRICULTURE

(From Japan Urea Centre News, July 1966)

There are no two opinions as to the fact that use of fertilizer is the most important single factor contributing to higher agriculture production. Thus, the solution to country's much talked about immediate need for rapidly increasing agricultural production per unit area, it could be firmly asserted, rests with intensive and adequate application of fertilizers.

Of the three major plant nutrients required for plant growth viz, nitrogen, phosphorus and potasium, a great stress is laid on increased use of nitrogen, since Indian soils are deficient in nitrogen all over the country. Basically, nitrogen is a must for food and cash crops. The absence or lack of nitrogen in the soil adversely affects crop production, resulting in stunted growth and poor yields, The necessity, therefore, is for greater use of nitrogenous ferfilzers so that the soil productivity which otherwise may limit crop production is increased.

Of the various nirogenous fertilizers available in today's market, urea is a promising economic 'carrier' of nitrogen. With the progress of technology, production and consumption of urea in the re cent years, has gained increasing importance and today, urea is considered as a major nitrogenous fertilizer in the world.

Urea was first imported in India in 1952 for experimental purposes. It was soon realised that urea was a good nitrogenous fertilizer for Indian soil and it was decided to produce urea in the country. The first urea plant started to function at Sindri in 1959-60. The production of urea in the country has risen from 3,839 M/tonnes in 1959-60 to 52,000 M/tonnes in 1965-66. It is expected to go upto 700,000 tonnes in 1968-69 and show a phenomenal rise to 25,00,000 tonnes in 1970-71, the final year of Fourth Plan. It is expected that by 1970-71, India would be the foremost among the new producers of urea in the developing countries of the world.

A massive planned production of urea in the country has been guided by the following three main considerations :

(1) The basic raw materials in the production of urea are natural gas, naptha and coal. The abundant supply of these raw materials are assured by steel mills, coal mines and oil refineries already in operation in the country.

(2) High analysis of nitrogen in urea which is 2.2 times that of ammonium sulphate spells accountable reduction in transportation, storage and handling costs.

(3) The production cost of a tonne of nitrogen in the form of urea is cheaper than the tonne of nitrogen in any other form.

The consumption of urea in the country is gradually increasing from 7,189 tonnes in 1956-57 to 3,45,253 tonnes in 1965-66. This spurt in consumption of urea far exceeds its production in the country. In order to meet this requirement, India has drawn a massive production plan of urea by 1970-71.

Urea having been introduced in the country in the recent past majority of our farming community is still unaware of its application and potentialities. It is therefore, necessary that farmers are guided and educated in its proper use.

If urea production target is achieved and also its production is to reach the soil, it is essential that a vigorous promotion compaign is undertaken considerably in advance of the proposed production. The cultivators must be familiarised with the use of urea, otherwise there may be difficulties encountered in marketing of urea fertilizer.

The progress in the production of urea in the country is remarkable and is a very important feature of nitrogen industry in the country. The introduction of urea fertilizer in the country, relatively a new innovation for Indian farmers, who have been using ammonium sulphate over a number of years, and therefore, more intensive efforts are to be made to encourage the use of urea, the future nitrogenous fertilizer of the country.

Indian Farm Leaders Leave for USA

A group of ten Indian Farm Leaders left for U.S.A. on Thursday 18th August, 1966, under the Farmers Exchange Programme, jointly sponsored by the Bharat Krishak Samaj and Farmers and World Affairs, Inc , U.S.A. The group will remain in USA for about six weeks and will visit Washington, Massachusetts, New York, Indiana, Montana and California. For most of the time they will stay with farm families on their farms. The names of the participants are :

1 Shri Maganti Ankineedu, M.P. (*Andhra Pradesh*)
2 Shri Manibhai Bhimbhai Desai (*Gujarat*)
3 Shri Bhola Nath Dubey (*Jammu & Kashmir*)
4 Shri T. G. Narayana Swamy (*Kerala*)
5 Shri S. S. Selot (*Madhya Pradesh*)
6 Shri B. R. Barwale (*Maharashtra*)
7 Ch. Attar Singh (*Punjab*)
8 Shri Muni Deo (*Uttar Pradesh*)
9 Ch. Karan Singh (*Delhi*)
10 Shri A. K. D. Raja (*Madras*).

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times from 30th to 60th day of planting at ten-day intervals to save the crop from blight and blast diseases. They knew they had to be careful about the stem borer too. So they had sprayed endrin four times, once a week beginning from the 27th day up to the 57th day of transplanting.

Cautioned that they had to feed the variety well,everyone had applied 110 kilos nitrogen, 25 kilos potash, 30 kilos phosphoric acid per hectare (97 pounds nitrogen, 22 pounds potash and 26 ponnds phosphoric acid per acre)in addition to compost manure, farmyard manure, green manure or hay to satisfy the hunger.

In the current kharif 1966 season, Taichung Native-1 will be grown on an area of about one lakh acres in Andhra Pradesh. The farmers of West Godavari district, who made initial succesful attempts with this variety in the last rabi (*Dalua*) crop, will take a lead and may record even better yields than obtained by them before.

(Farm Feature No. 3/66)

Quinoa Papalisa. Oka. Isano— The new Foods from Ancient Plants

Quinoa, Papalisa, Oka, Isano are names that ring strangely on the Northern ear. But these commonplace plants of the Adnean highlands of South America could eventually become everyday items on dinner tables oceans away from there native soils.

Even though little-known outside the Andes, some of these crops have a long history and were grown even before maize. The Incas ate not only the grain of the quinoa but also the leaves as salad. Most of the plants have a high nutritive value and a higher protein content than such cereals as wheat, maize and rice. Moreover, they are hardy and can be succesfully grown above 2,000 meters and even in areas where patches of snow lie throughout the year.

But when all this is said, ie must be added that not many farmers are growing these crops and those who are, are growing them under primitive conditions and getting only the smallest of yields. The result is that the total world production of quinoa, for instance, is only about 1,000 tons per year.

Andes is very backward and poor area. Most people are illiterate and standard of living is very poor.

A five year programme is now being started to select and breed better varities of the plants, stimulate there use among farmers and distribute more and better seed. Eventually the new varieties will be taken abroad for tests in other lands. The$283, 000-project has been financed for its first years by the Oxford Committee for Famine Relief, as a contribution to the Freedom from Hunger Campaign of the Food and Agriculture Organization.

At an Institute, built by the Bolivian Government at Paracamya perched 3, 788 meters up in the Andes, hundered of varieties of the plants have been collected from Bolivia and surrounding countries with similar climates. They have been planted to determine their yield, resistance to pests and diseases, and their reaction to temperature, wind and rainfall. Their protein, mineral and vitamin content will be analysed at the Institutes's laboratory and experimental fields have also been planted in other areas at differing altitudes and resultant differences in climate. When the best varieties are chosen, seed production will begin on a large scale and the seeds distributed to farmers in the whole Altiplano.

The Patacamaya Institute will train farmers and farm leaders in better farming methodes.

Bolivia is a logical starting-point for the development of the plants. Some research has already been done by renowned Bolivian scientists and the plants are familiar if not properly exploited by the Bolivian farmers. They are also known but not widely used—mainly because there is not enough of them in Chile. Peru and Colembia. If produced abundantly, they could become an important food for the seven millions who live in the Andes. Or they could also follow the path of the potato, which was uprooted from its native Andean home and carried off across the Atlantic to become a staple food in Europe and eventually North America.

(FAO Feature FR—402/66)

New cultivating Technique Eliminates Ploughing

Ploughing is eliminated,and cultivating and seeding for certain crops carried out simultaneously,with a new technique developed jointly by two British firms—Howard Rotavator Co. Ltd. and Plant Protection Ltd. The technique is said to improve farming efficiency and give important advantages over conventional methods. It has been used successfully for direct seeding of cereals, kale, bean and grass crops.

Pasture and stubble are first sprayed with a chemical weed killer. This operation should be carried out 7-14 days before sowing. The chemical becomes inactivated after it has suppressed weeds by killing off all the herbage above ground.

A specially designed machine is then used to cut narrow slots in the soil, and at the same time, via seed drills mounted on the equipment, set seeds in the slots and cover them with earth.

The effect of the operation is to plant seeds at shallow depths, with the least possible soil disturbance and with tillage reduced to a fraction of the amount involved in conventional operations.

Only 50 tons of soil are disturbed per acre compared with 1,000 tons in full cultivation methods, it is claimed. An acre of ground can be worked in an hour, against four-and-a half hours for established methods. The machine cuts 15 continuous slots varying in depth and width, according to the type of seed being sown.

Advantages claimed for the technique are the ability to penetrate the hardest ground, and to seed land normally regarded as unsuitable for ploughing. Soil moisture loss is reduced and erosion prevented, while winter-sown crops are protected from frost damage by snow trapped in trash left from the weed killing operation.

The seeding and cultivating machine can be used with any tractor with over 40 h. p. available at its power take-off point and fitted with three-point linkage.

The amount chemical weed killer needed for a given area depends on grasses and weeds present, but is normally four or six pints an acre. smaller quantities have been needed prior to kale seeding, it is said.

Management of land after the new technique has been used is the same as for conventional cropping, except that no inter-row weeding is necessary. (B.I.S B-459)

OXFAM SENDING DRILLING RIGS TO MAHARASHTRA

Equipment for Irrigation Project

Oxfam, the well-known welfare and relief organization in Britain, is sending three borings ring to help augment the water supply at Jalna, Maharashtra. The first of the three rigs has already been despatched, and the other two will follow shortly.

Announcing this a spokesman for Oxfam said that the rings, which cost approximately £7,000 (Rs. 1.47 lakhs) each, would be used in Maharashtra by the Scottish agricultural missionary, the Rev. Johan McLeod, who has initiated an irrigation scheme at Jalna.

Over 200 Wells

The boring rigs are made by a British firm, which has made a gift of one of them. The rigs, it is claimed, can sink a well in a matter of hours even in rocky terrain and bring water to the surface for villages and farms. During the past year Mr. McLeod's team of qualified Indians have sunk or deepened 41 open irrigation wells and over 200 wells for supplying drinking water

The first rig for Jalna was provided by Christian Aid (another relief organization) last year. The Oxfarm rigs, which include tractor compressors, a land-rover,pumps, generators drill grinders, trailors and repair and serving facilities, will enable a much great area to be irrigated.

In the past six months Oxfam has financed irrigation projects in India to the tune of £42,000. In September the organization is sending a British volunteer worker, Mr. David Redferm, to train with Mr. McLeod in the techniques of water drilling.

(B. I. S. B-900)

(Continued from Page 5)

5 Prices fixed should not only be remunerative but should also be incentive. The increasing cost of production should be taken into consideration.

6 As far as possible, procurement should be done through co-opratives and at places convenient to the producers.

Distribution

1 Equitable distribution is very important.

2 Government should have buffer stocks to curb the anti-social activities of traders.

3 Food Corporation of India should build up stocks by entering into the market at the harvest time, and by giving timely inputs like fertilizers to producrs against supply of foodgrains.

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