

Methods to be Adopted for Maximising Production and Development of Improved Strains — Oilseeds

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Introduction: In the present context of acute shortage of oils and fats in the world, it has become increasingly necessary to augment their production to the maximum extent possible. India, the biggest producer of oilseeds, has a special responsibility in meeting this shortage. Since the commencement of the Second World War, the export of oilseeds from this country has dwindled considerably owing to the development of oil crushing and to the increased consumption for edible and industrial purposes. Hence there is urgent need to step up production of Oilseeds to meet the growing internal demand and also to maintain India's status in the international markets. Otherwise, she may permanently lose the substantial export trade which had been built up all these years and thus fail to earn foreign exchange which the country badly needs at the present moment.

The Panel on Oils and Soaps constituted by the Government of India, went into this question thoroughly and recommended increased targets of production for each of the oilseeds grown in the country with a view to attaining self-sufficiency in respect of both internal consumption and export demand. Madras being the most important oilseeds producing State in the Indian Union has got to play her part in this great effort at self-sufficiency. On the basis of the targets fixed by the Panel, this State is required to increase her present production by more than 50 per cent. To achieve this additional production, it would be necessary with the existing methods of cultivation, to increase the acreage under these crops by another 3 million acres. This is neither possible nor desirable at present. So other avenues of augmenting production will have to be explored. In this paper, the utility of improved strains for this purpose is discussed and suggestions to effect improvements in the present methods of their production and development are given. The crops mainly considered here are groundnut, gingelly and castor.

Methods of Increasing Production: Increasing the areas, adopting intensive cultivation, controlling pests and diseases and using improved strains are the common methods of increasing production. Extending the area under oilseeds at the expense of other crops like cereals, pulses, cotton, etc., is not desirable at present as the production of the latter crops are also far short of the requirements. Under these conditions the extension of area under oilseeds has only limited scope. Any step taken

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for increasing production of oilseeds should necessarily be one that does not interfere with other crops. At best, these can be raised as catch crops in areas which remain fallow. The dryland fallows of the coastal districts and the rice fallows of the deltas could be utilised for growing cold weather gingelly and summer groundnut and gingelly respectively. If a special drive is launched to induce the cultivators to take up to such cultivation, then the present acreage under oilseeds can be increased by about 5 lakhs acres.

Intensive cultivation and control of pests and diseases would no doubt result in increased yield of oilseeds by 10 to 20 per cent. To achieve this, considerable spade work by way of collection of experimental data and carrying out of propaganda will be necessary. This would naturally involve time and may not therefore be capable of giving quick results.

Number of high yielding strains of groundnut, gingelly and castor have been evolved by the Oilseeds Section and trials carried out with these under ryots' conditions have conclusively proved that they are capable of giving increased yields of more than 20 per cent over the local cultivated varieties. If the local varieties are replaced by the improved strains, the present level of production can be increased at least by 20 per cent within a few years. Thus the use of improved strains appears to be the most potent method of increasing production of oilseeds in the State.

Progress of Oilseeds Development Work: Supply of improved strains of oilseeds to the District Officers has been regularly made from the Oilseeds Breeding Station, Tindivanam for the last 10 years. But their multiplication and spread have not proceeded to the extent desired. The area under the improved strains is now estimated to be about 5 lakhs acres which is not even 10 per cent of the total acreage. Review of the developmental work relating to the oilseed strains would show that the following factors have been responsible for this poor spread :

- (i) Inability of the Breeding Station to meet the full requirements of seeds of the District Staff.
- (ii) Failure of the monsoons.
- (iii) Low rate of multiplication in the case of groundnut.
- (iv) Inability of the District Staff to pay the requisite attention to seed development work.
- (v) Absence of incentive to Seed Farm cultivators to produce seeds of good quality.
- (vi) Inability of the department to make available seeds of improved strains at reasonable prices.

All these factors appear to have contributed equally to the low rate of spread of the strains. Unless suitable steps are taken to overcome these limiting factors, the oilseeds development work cannot be expected to record any satisfactory progress in future.

Suggestions to improve existing methods: To make large quantity of pure seeds of the strains available to the cultivators, it is necessary to multiply them on a much larger scale than has hitherto been attempted. With a single nucleus seed centre it would not be possible to meet the requirements of the entire State. Maintenance of a single centre has other serious disadvantages namely (i) the quantity and quality of seeds are adversely affected by vagaries of the seasons and (ii) cost of seeds gets increased on account of transport over long distances. These can be avoided by establishing Nucleus Seed Farms in different parts of the State. The establishment of such Zonal Nucleus Seed Farms would not only result in increased production of improved seeds but would also help in getting over the adverse effects of the season and in reducing the cost of transport. Six such Zonal Nucleus Seed Farms for the large scale multiplication and distribution of improved strains of groundnut and castor have been started this year in this State under a scheme financed by the Indian Central Oilseeds Committee.

The seed rate for groundnut is very high (100 lb. to 150 lb. of pods per acre) and hence the rate of multiplication in the crop even under normal conditions is very low being only 5 to 6 times. As the area devoted to the cultivation of this crop is very large and as the rate of multiplication is low, it is very necessary to organise seed farms on an extensive scale in order to produce large quantities of seeds. In some of the important groundnut growing districts of the State, the area under the crop in each taluk may be more than 50,000 acres. Unless 50 acres of primary seed farms and 250 acres of secondary seed farms are organised in each such taluk every year and their produce systematically procured and distributed, it may not be possible to replace the local with the improved strains in less than 10 years. Thus there is urgent need to organise seed farms of groundnut strains on a very large scale, especially in localities where this crop is extensively cultivated. It is in furtherance of this object that regular supply of nucleus seeds of the groundnut strains are proposed to be made from the six Zonal Nucleus Seed Farms recently started in this State.

The developmental work connected with the improved strains requires considerable attention. Unless proper attention and care is bestowed to the various details connected with the cultivation, roguing, handling produce after harvest, procurement, storage and distribution it will not be possible to supply large quantity of pure seeds of the strains. The District Staff have not been able to pay the desired attention to this

work as it forms one among the several duties assigned to them. Consequently, both the quantity and the quality of seeds distributed have suffered a great deal. In the case of groundnut where the rate of multiplication is low and where quality of seeds is of the utmost importance, special care has to be taken at every stage of this work to get the desired result. The District staff as at present organised is not in a position to devote as much attention and care as the work actually demands. As this item of work is the most important one in our departmental activity, it calls forth for much better attention than in the past. For carrying out this work effectively and efficiently, a special 'Seed Development Wing' will have to be established which can be entrusted with the sole task of multiplication and distribution of improved strains of all the important crops. The Nucleus Seed Farms established in the different tracts will supply necessary nucleus seeds to the Seed Development Staff and they will multiply them in further stages and make large quantity of pure seeds of the strains available to the cultivators. Special Seed Development Officers will have to be appointed for this work. The Seed Development Officers will be in-charge of one or two districts and they should possess adequate knowledge of all the crops. For this purpose, they will be required to undergo intensive training at the main Crop Breeding Stations. This would equip them with requisite knowledge to carry out the work efficiently. They will be assisted by Seed Development Assistants and Fieldmen at the taluk level. It will be the duty of the Subordinate Staff to organise the various stages of seed farms, procure seeds of the desired quality and arrange for their proper distribution. The method of working suggested is similar to the one now carried on in cereals and cotton. But in this new proposal, the Seed Development Staff will be required to handle all the important crops in the tract and carry out the work intensively within a limited area. The officers and subordinate staff now working in the various Seed Development Schemes can be utilised for bringing into existence this 'Seed Development Wing'. Creation of this special wing will go a long way in accelerating the spread of improved strains of oilseeds and take us nearer towards self-sufficiency in a shorter time.

Distribution of market quality seeds will not serve the object in view especially in the case of groundnut as such material cannot be expected to have received adequate drying and cleaning. To secure good seeds that would ensure proper stand of the crop and give remunerative return, it is very necessary that the produce should be thoroughly dried and the seed pods hand-picked to facilitate rejection of immature and damaged pods and other off types. Unless this is scrupulously carried out, it may not be possible to establish a reputation for good quality seeds in groundnuts. The process of drying and cleaning not only involves extra labour but also entails some loss to the cultivator by way of driage and reduction in market value of the rejected produce. To induce the Seed

Farm Cultivators to deliver seeds of the desired quality, adequate compensation will have to be paid by way of premium. The amount of premium to be paid would depend largely on the local conditions and this can be fixed for each of the important producing areas. Without payment of premium, the cultivators cannot reasonably be expected to deliver good quality seeds to the department. For maintaining the reputation of the department, only standard quality seeds should be procured for distribution by payment of adequate premium.

Another equally important factor affecting development of improved strains is their price. The average cultivator being poor and illiterate, cannot appreciate the usefulness of the strains and come forward to purchase them at enhanced rates. As the price of seeds is the major obstacle in the spread of the strains, every endeavour should be made to supply them at reasonable prices. This can be done either by making the seeds available at comparatively cheap rates or exchanging them for the local varieties weight for weight. By adopting these methods even the most conservative among the cultivators can be induced to take up to the strains in preference to the local seed. The adoption of these methods would, however, result in some loss to Government. This loss would be more when the strains are taken in exchange for the local seeds. To make seed development work a success, the Government should undertake to meet this loss. Unless the Government adopted a bold policy in subsidising supply of seeds of improved strains, the progress of their spread in this State cannot be sufficiently rapid to achieve the increased production aimed at within a reasonable time.

Summary: It is very necessary to increase production of oilseeds in the State to meet internal consumption and export demand. Of the different methods of increasing production, use of improved strains is the most potent one, capable of giving substantial and quick results. To make large scale multiplication and distribution of improved strains a success, the present methods of development work will have to be reorganised on the following lines.

- (a) Establishing Nucleus Seed Centres on a Zonal basis so as to ensure regular supply of pure seeds to the Seed Development Staff.
- (b) Organising at least 50 acres of primary seed farms and 250 acres of secondary seed farms of groundnut strains in important groundnut growing taluks to accelerate the rate of their spread.
- (c) Organising a special 'Seed Development Wing' in the department exclusively for the purpose of large scale multiplication and distribution of improved strains.

- (d) Offering adequate premium to Seed Farm Cultivators as inducement for delivering standard quality seeds to the department.
- (e) Making available large quantity of pure seeds of improved strains to the cultivators either on exchange basis or at some reasonable prices.

If these suggestions are adopted, the improved strains of oilseeds would rapidly replace the local varieties and a substantial increase in the production of oilseeds would result within a short time.

OBITUARY

It is with deep sorrow that the demise of Sri C. S. Rajarathna Mudaliar is recorded in this Journal. He was actively connected with particularly the entertainment activities of many College Day and Conferences celebrated in the previous years. We pray that the Almighty should rest the departed soul in peace and give the required strength of mind and body to the members of the bereaved family to overcome the irreparable loss.