

Methods to be adopted to Maximise Production and Development of Improved Strains of Millet Seeds *

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Millet Strains of the Madras State: Millets are small grained cereals which are grown in the drier tracts of this State. There are eight of them, Viz., Cholan, Cumbu, Ragi, Tenai, Varagu, Samai, Panivaragu and Kudiraivali. The total areas occupied by these crops is about 13 million acres, the annual production being about 3 million tons of grain. As a result of the work carried on at the five Millet Stations and seven district Stations, 77 strains have so far been released for distribution. The trials conducted with strains have demonstrated their superiority over the local types and their capacity to yield on the average 10 to 15% more grain than the cultivators' seed. The general demand for improved seeds has been steadily mounting, and if adequate supplies are made available, much larger areas would be cropped with the improved seeds of Millets.

Present Organisation for Production and Distribution of Improved Seeds: It was to remedy this defect of short supply and to produce adequate quantities of improved seeds, and distribute them to the cultivators that a separate organisation under the name of "Seed Development Scheme" was created in 1949. Under this Scheme the organisation and running of primary seed farms and the procurement of seeds are carried on under the dual control of the Seed Development Officers and the District Agricultural Officers. The organisation of secondary seed farm is completely under the District Agricultural Officers and is carried on by the Agricultural Demonstrators in charge of the taluks. The area covered by the improved strains, both through district distribution and natural spread, after the Seed Development Scheme came into existence, is estimated to be about 16 lakhs of acres. Compared with the figures available till the end of 1948, there is an increase of about six lakhs of acres in this area during the course of three years.

Methods suggested to maximise production and development of improved strains of Millets: On a rough estimate, it may be said that the strains already evolved so far are suitable for about 40% of the total area under Millets i. e. about five million acres. Adopting an average seed rate of 10 lb. per acre, about 23,000 tons of improved seeds are required to sow an area of five million acres. Compared with this enormous figure, the

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actual areas of seed farms sown and the quantities of seeds produced are very insignificant and hence there is urgent need to organise this aspect of extension work and devise efficient methods for maximising the production and development of improved strains. The following suggestions are submitted for consideration.

The question may be asked where is the need for State Organisation? Why is it not easy for each farmer to be self-reliant and maintain his seed pure? Our Country is one of millions of small farmers. Most of them do not bother about pure seeds. It is common experience that many farmers, mostly tenant farmers, go to the bazaar or shandy and purchase seeds from the village bania, just at the time of sowing and also paying an exorbitant price for the same. The stuff they will be buying is not surely pure improved seed. The three million tons of millet grains produced in the State are mostly from seed of this kind. For each tenant farmer to keep improved seed separately for his use next year is a bother. He does not have the sustaining power to keep back sufficient seed for sowing for a period of six to eight months. This is the weakest link in the chain of production and it is here that the State should step in with its helping hand. Even in Western Countries where the holdings are very large, many farmers do not bother about the seeds. It is a problem for them to keep seeds pure and free from insects, for a long time. So every year many prefer to purchase marked seed from the certified seeds-men. The production and sale of improved seeds is a thriving business in Agriculture in the United States of America. Until our Country comes up to this level of private enterprise, it is the duty of the State to supply pure seeds to small farmers who are the back bone of our Country's Agriculture.

Intensification of seed development work by reducing jurisdiction: The division of work between Seed Development Officers made at present seems to be too broad to be effectively catered to. There are only two Seed Development Officers, one at Bellary and the other at Coimbatore, to organise and supervise the work in the State. Similarly the subordinate staff also are in charge of areas too wide for effective work. For obtaining the maximum benefit from the Seed Development Schemes, the work should be divided into smaller zones according to the importance of the crop, and other considerations.

Since the multiplication and distribution of improved seeds is as important as the evolution of strains through selection and hybridisation, if real benefit is to be derived from the latter, it is essential that the organisation for the development of seeds should be on a permanent basis just as the breeding work. It must also be remembered that the task of spreading the strain does not cease, once the seed is issued to the cultivators in a village. Improved seeds give increased yields so long as they remain pure, and the best results are obtained by keeping the seeds pure.

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Appointment of Officers familiar with the breeding work on the crop:
As the purity of seeds is the most important consideration in the spread of strain seeds, it is necessary that responsible officers on the Scheme should be persons who are intimately acquainted with the breeding work on the particular crops. Seed farm work is important as long as seeds are pure. If the question of purity is not given its proper place there is no need to spend money on seed farms.

Trial plot work: One of the important stages in the production of improved strains is to choose the best selection as the strain for a particular tract. This is done by what is known as trial plot work. This is carried out in cultivators' lands. The Breeding Station produces improved selections by plant breeding methods. The best three or four are picked out for trial in the Cultivators' fields in the districts. Trial or observation plots are laid out by the Demonstration Staff in the Cultivators' fields in a number of places in the district, compared with the local variety side by side. The best selection from these tests after sufficient confirmation, becomes a strain. This is the first step before seed multiplication of strain starts. The trial plot work is a very important stage in which both the Research Worker and the Demonstrator are equally interested.

Organisation of Seed farms in State owned or leased lands: Supply of improved seeds is one of the most popular work of the Department and is also a most useful result of agricultural Research. The seed supply is popular and the demand for seeds increases year by year. These demands have to be met from primary and secondary seed farms which have therefore, to be arranged on a large scale. Seeds of strains required for sowing primary seed farms are now supplied from the Breeding Stations. Land and irrigation facilities available at the Stations are very limited and it is with great difficulty and by curtailing breeding work to some extent that the supply of nucleus seeds is maintained. If the work of multiplication, storage and distribution of improved seeds is shifted to separate State managed seed farms under the charge of trained men, who will run them under the supervision of the Specialist or the Deputy Directors, it will yield better results. Suitable lands with facilities for irrigation can be acquired or taken on lease near the Breeding Stations and these seed farms can be run with the minimum staff so as to make itself sufficient, if not remunerative. These seed farms will demonstrate to the cultivators that it is worth while growing improved seeds as a commercial proposition for distribution.

Provision of facilities for purchase and storage of Seeds: In the "two year plan of Intensive Cultivation" sanctioned by Government, targets were fixed for areas of seed farms, quantity of seed to be purchased and area to be covered in each year of 1949-'50 and 1950-'51. According

to this Scheme, the quantity of improved seeds of Millet Strains to be purchased was estimated at 68,500 tons or about 8,20,000 bags. Even if this is distributed over 20 taluk depots, each will have to stock 40,000 bags of seeds and the space required for the periodical drying, cleaning and storage of these 40,000 bags is something very large, and the responsibility of keeping so much seed free from insects is too heavy to be shouldered by the Agricultural Demonstrator and his depot Clerk. That was perhaps one of the reasons why the purchase of seed was far below expectation, and the expected target was not often reached. This clearly shows that unless there are facilities for purchase and storage without damage and consequent financial loss to the holder of the stock, this Scheme cannot work satisfactorily. It is better that Seed Development Officers are provided with funds and godowns for purchase of seed from primary seed farms. The procurement of seeds from secondary seed farms may continue to be under the charge of the Agricultural Demonstrators under the guidance of the District Agricultural Officers. The Agricultural Demonstrators must also be provided with sufficient facilities for drying and storage of the seeds. Among the Millets, Cholan is the most easily damaged grain. But experiments conducted at the Millet Breeding Station have shown that if the seeds are dried well initially and then given periodical drying once in one or two months, even Cholan seed can be kept free from insect damage and without impairing viability for 10 to 20 months. Grains intended for seed purpose only can very effectively be protected against insect pests with the help of insecticides also after proper drying.

Provision of financial help to seed farm ryots: Another measure that will substantially help the development and production of improved seeds on a large scale, is the provision of sufficient financial help in the form of advances and loans free of interest. That will induce the cultivators to take up seed multiplication on a large scale. As the seeds have to be dried thoroughly and cleaned well, a higher price than what is fetched by ordinary grain in the open market is justifiable. The sale price of seed can be fixed at the level of price of grain in the open market and the difference of 10% can be subsidised by the State to popularise the work.

SUMMARY: The need for Seed Development Work in the State is explained. Suggestions for making the organisation more efficient, such as (1) reduction of jurisdiction, (2) permanent retention of staff, (3) appointment of officers familiar with breeding work on the crop, (4) intensification of trial plot work, (5) organising State-owned seed farms, (6) provision of proper facilities for purchases and storage of seeds over long periods and (7) provision of sufficient help to seed farm ryots and regulation of sale price, have been made.

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