

agricultural propaganda work. The school Management will pay them only 50% of their pay and allowances whereas the Government will pay not only the other 50% but an additional emolument of 50% on the pay to make the job attractive. It is presumed that such a body of trained rural school teachers drawn from schools at convenient centres will provide a batch of very useful extension service workers as compared with the usual fieldmen and Demonstration maistries. This requires trial at least in one taluk of each of the regions—particularly in the west coast districts where the difficulties are great in propaganda.

Development of improved strains and plant materials: In regard to the developmental work on the evolution of improved strains, I wish particularly to draw attention to the evolution of strains of some major varieties particularly in North Malabar district. Sufficient attention has not yet been paid to the evolution of strains in some major varieties which occupy thousands of acres like Mundon and Kuttadan for low lying single crop lands, Bali and Orkayama in Saline lands and again in varieties like North Malabar Kayama, Kunhi Kayama, Alli Kannan, Thavvan etc.

Evolution of these strains must be done under North Malabar conditions and not at Agricultural Research Station, Pattambi where the conditions are not similar to that in North Malabar. South Kanara climatic conditions appear to be more allied to North Malabar than South Malabar (Pattambi) and hence the work on evolution of these strains may be better done at Paddy Breeding Station, Kankanadi.

Increasing the Production of Improved Strains of Seed

By

SRI V. T. SUBBIAH MUDALIAR, L. A.

The use of improved strains of seeds has been one of the chief methods of increasing the production of crops. Improved strains of seeds are evolved at the Research Stations by various methods. There are many difficulties encountered at the several stages of building up a strain. With knowledge of the behaviour of the genes and transmission of characters and improved plant breeding technique, various characters are

combined and suitable strains are evolved. Perhaps the greater difficulty appears after a strain is evolved. Its purity requires to be maintained at a high level, for realisation of the full potentialities of the improved strains. The evolution of the strains is done at the Research Stations and laboratories, where the plant material and the various cultivation operations are under control. The multiplication and spread of the strains in the cultivator's field are under conditions, over which effective control is not possible for various reasons.

Improved strains of seeds are required to be produced in large quantities in the cultivator's field. That itself is a problem that defies solution. For instance, rice occupies roughly 10 million acres. Taking that the improved seeds are to be changed once in 5 years in the ryot's field, 2 million acres have to be supplied with improved seeds each year. 5 lakhs of bags or about 35,700 tons of seeds raised in at least 50,000 acres are required for the purpose. It is obviously not possible to raise these seeds in Government farms. The improved paddy seeds required for distribution are therefore raised in cultivators' fields, in what are called seed farms. The seeds required for sowing the seed farms are supplied to selected cultivators under certain conditions. The cultivators are required to multiply the improved strains, under the control and guidance of the Agricultural Demonstrator. The seed farms are spread over the whole talk under his jurisdiction. With the seed farms spread out, he is not able to effect any effective supervision over the seed farms. The seeds get admixed at the various stages. The cultivators raise nurseries of other varieties by the side of seedfarm nurseries, providing chances for the contamination of the seed farm nurseries. Later the rogueing of the seed farms is done by the cultivators, under the supervision of maistries and fieldmen. The staff members are not able to effectively supervise the rogueing and off-types and other varieties of plants are left in the field. The next stage, where the strains get contaminated is the thrashing floor. Thrashing is done on earthen floors, which give room for other varieties to contaminate the strains. Precautions are no doubt taken to avoid contamination taking place in the strains, at the several stages, as far as possible. But they are not very effective in preventing the contamination of the strains. The seeds produced at the seed farms is therefore mixed up with other varieties of seeds, in small proportions. The multiplication of the strains is continued in the subsequent years and the contamination goes on increasing year after year and when the seeds are in general distribution, there are varying degrees of impurities and there are complaints from the cultivators, who purchase these seed farm seeds. It must be recognised that a certain amount of contamination is inevitable in seed farms and our objective should be to produce seeds, where the extent of contamination does not affect the character and value of the improved seeds. It is possible that this point of view may be considered

to be indefensible from the sentical considerations and that the very object of producing improved strains is defeated by allowing contamination to take place at the stage of multiplication of the improved seed material. But we have to take into consideration the fact that the contamination is there, and that it is inevitable.

Admitting facts as they are, we may suggest methods of reducing the contamination taking place in the improved strains of seeds, at the stage of multiplication in the cultivators' fields. It has been suggested off and on by individual officers that seed farms should be concentrated to facilitate intense supervision by the departmental staff. With the central idea of concentrating the seed farms, the following tentative suggestions are offered for consideration. A taluk may normally have to raise not more than 200 acres of paddy seed farms, which are now spread out over the whole taluk. The entire area should be located in one or two villages, close to the taluk headquarters, so as to facilitate the supervision of the seed farms by the Agricultural Demonstrator in an intense manner. The chances of contamination of the seeds of improved strains would be reduced considerably. One fieldman and a maistry may be specially set apart for seed farm work, who will assist the Demonstrator in arranging seedfarms, issuing seeds for seed farm sowings, supervising the raising of nurseries, planting, rogueing, harvesting and thrashing the produce. If possible, the seed farms should be in compact blocks and the co-operation of big landholders having compact areas may have to be enlisted, and their lands used as seed farms.

Individual seed farm ryots should not be asked to raise more than one strain in the season, over the holding in the village. The entire paddy area cultivated by individuals in the village should be taken in as seed farms, irrespective of the quality of the several fields, so as to avoid any seed farm ryot growing more than one variety of paddy in the season. No other strain or variety of paddy should be grown by him. This will avoid contamination of the strain at the nursery and thrashing floor to a very large extent. If in addition to this, rogueing is also done properly, under regular supervision, seeds of offtypes getting into the seed will be considerably reduced. Villages suitable for raising seedfarms in a concentrated manner may not be available in all taluks, but wherever such villages could be located and the ryots concerned could be induced to co-operate with the seed development work, the seed farms could be concentrated.

Summary: Improved strains of seeds multiplied at the various Agricultural Research Stations maintain their purity. Seeds produced in seedfarms in cultivators' lands get contaminated, and there is loss of purity. The contamination takes place in the nursey and the thrashing floor. The off types of plants that come up are also not removed properly.

It has therefore been suggested that the entire seedfarm area should be concentrated in one or two villages, so that the Agricultural Demonstrator could effectively supervise the various seed farm operations. The entire area cultivators should be brought under seed farms and one strain alone should be in the entire holding, so as to avoid contamination at the nursery and the thrashing floor.

Rural Economic Conditions of the Coimbatore District

A Study of some Cultivators

(Summary of a Report on Investigations made during 1951 — '52)

By

S. V. DURAISWAMI, K. MEENAKSHISUNDARAM

and

V. S. NARASIMHAN

Agricultural Economics Section

The Coimbatore Cultivator: The agriculturists of the Coimbatore district are noted for their industry and hard work. Of late, they are also noted for their enterprising spirit, which is exhibited by their adoption of modern farming methods. The district receives low and ill distributed rainfall and in fact, some taluks are so defective in this respect, that failures of rains often result in famine conditions. Of necessity, therefore, the cultivator has to be hard working and try to raise some crop to eke out his living. The only remedy to overcome the deficit rainfall, is to tap the underground resources of water supply and conversion of dry land into gardenlands. This process of well sinking has been going on from early times and the total number of wells in the district utilised for irrigation is 1,08,254 and the area covered for irrigation is nearly $4\frac{1}{2}$ lakhs acres. However, the total area irrigated by wells is only about 17% of the total cultivated area at the present time and therefore the scope for more area coming under irrigation by wells is really very great. Of course, it is a great boon to this district, that the Lower Bhavani Project obviates the sinking of wells, which is a