

If at the present juncture as a part of the "Grow More Food" campaign advantage is taken to raise this cheap yet delicious root vegetable in all suitable localities, the object of this short note will be more than achieved.

Acknowledgment I am deeply indebted to Sri S. N. Chandrasekhara Ayyar, M.A., Lecturer in Botany, Agricultural College, Coimbatore, for kindly furnishing a complete botanical description of the plant.

Improved Agricultural Practices Introduced in Hindupur Taluk

By K. V. SESHAGIRI RAO,

Assistant Agricultural Demonstrator, Hindupur

Pillipesara in Ragi as a means of grow more food In the taluk of Hindupur of the Anantapur District it is a general practice to grow a crop of *ragi* from March—April to August—September or June—July to October—November in the *ayacut* under tanks aided by wells, instead of paddy because of the insufficient supply of water in the early part of south west monsoon. The crop is invariably transplanted either in beds or in rows and before the end of a month after transplantation, a hoeing or two is given to remove weeds. A few days later in case of failure of rains a light irrigation is given wherever possible. On the small ridges formed at intervals of 3 to 5 feet lablab is raised. Two to four months after the harvest of *ragi* the lands lie fallow but for lablab. A portion of the early planted field is set apart for sugarcane planting. The rest of the whole area or a part of it, is put to paddy depending upon the quantity of water available in tanks.

By way of an improvement of the existing conditions *pillipesara* (*phaseolus trilobus*) was inter-sown in two years at 25 lb. per acre at the time of the final hoeing instead of lablab which resulted in :—

- (i) The yield of *ragi* was about 5 % higher than the one without it.
- (ii) After the harvest of *ragi* 1 to 3 cuttings of *pillipesara* forage was obtained depending upon the duration of the fallow period. Fifteen to twenty animals could be fed continuously on one acre produce with the result that there could be a 50 % higher yield in milk not to speak of the improved condition of the animals and (iii) The subsequent growth when ploughed in was manure to the next crop.

Sugarcane planting. Sugarcane is a paying crop which the *ryots* grow to get money to meet their various items of expenditure. It has been the endeavour of the Agricultural Department to improve it in all aspects viz., varietal, cultural and manurial. One of the methods of planting is to have the setts end to end in the row. With the same number of setts per acre, instead of their being in the line end to end if planted slantingly at about 45 degrees to the sides of the furrow and all in one direction, good results are obtained.

Observations on the two comparative methods of planting during the past six seasons show that (i) the slant planting in the furrow effects greater percentage of buds germinating successfully. When setts are planted end to end in the furrow there is a chance of the setts being pressed down to the level of the unploughed region at the bottom of the furrow. In the case of the setts planted at an angle to the furrow the setts cannot be pressed down so deep. Consequently below the setts there will be no hard layer of earth.

(ii) In the slant planting the stools are nearer each other than in the other system, therefore lodging is less.

(iii) Because of the greater number of plants in unit area and less expense on account of absence of propping the plants, there has been greater nett return per acre.

(iv) Yields were noted to be higher in the slant planting system.

The cultivators of the tract who have been convinced of these advantages are slowly taking to this.

A Plea for the use of Wooden Grinder Rice

By R. SWAMI RAO, L. Ag., M. A., S.,

District Agricultural Officer

AND

Dr. S. RANGASWAMY,

Municipal Health Officer, Cocanada

The food problem, which is looming large in the eyes of all, at the present moment, is not a war time necessity alone. It exists at all times, but during war time the matter assumes tremendous importance and all energies are directed towards the production of more food.

One of the methods suggested to meet the shortage of rice is to improve the quality of rice. Rice, as at present consumed, is mostly machine milled, devoid of germ and bran. This high polishing has been primarily responsible for the prevalence of certain diseases, chiefly beri-beri in the rice growing tracts, chiefly the 'Circars' of the Madras Presidency.

Husking of paddy is done in mills, or by pounding in a mortar. An improved method suggested is by the use of the wooden grinders which shells the paddy but does not remove the bran from the rice. The analysis of rices obtained by the three processes of milling is given below,—

Constituents	Wooden grinder	Hand pounded	Machine milled
1. Protein	7.24	6.79	6.70
2. Fat	2.33	1.42	0.73
3. Ash	1.34	1.14	0.83
4. Carbohydrate	75.04	76.19	77.34
5. Calcium	0.007	0.007	0.005
6. Phosphorus	0.231	0.209	0.158
7. Iron	4.55	3.57	2.88
8. Caloric value	350.10	344.70	342.70
9. Moisture	14.05	14.46	14.40
10. Vitamin	++++	+	...

From the above it is clear that the wooden grinder rice is the best. Recently the Government of Madras have sanctioned a sum of Rs. 2,000 for the manufacture and distribution of wooden grinders in the East Godavari District. Wooden grinder for husking paddy should become as popular as the coffee grinder with the discriminating public.

There are limitations for the use of wooden grinder rice. It takes a longer time to boil, consumes more fuel and the housewives may find it irksome to cook. This can be obviated if it is soaked in water for 3 or 4 hours before boiling. Less quantity should be eaten, otherwise there will be digestive troubles in the beginning. The stuff should not be stocked long, as it is said to be more susceptible to insect attack than the milled rice. It can be stocked for a week in large families and in small families daily requirements may be obtained as in the case of coffee powder by the use of coffee grinder. The use of wooden grinder will be an auxiliary in the 'grow more food campaign' as an aid to National War Effort. If the wooden grinder rice becomes universally popular the shortage of rice in the Presidency will be reduced by nearly 8 per cent.

SELECTED ARTICLE

The Migratory Locust in South India

The migratory locust (*Locusta migratoria* L.) is another of the potential pests of India that may at times assume a serious character. Specimens of the solitary phase are met with in small numbers in almost all parts of India, but so far, no observations appear to have been made anywhere on its breeding habits or on its powers of migration, nor are there any published records of instances of local multiplication.

Observations made in the course of locust surveys carried out in the desert areas of Baluchistan, Sind and Rajputana during 1931—1938 have thrown very interesting light on the migration and breeding of the *solitary* phase of this species (Rao and Bhatia, 1939). In the year 1937 especially, valuable data were obtained which showed how this locust bred in large numbers in spring in the hill-valleys of Baluchistan, and migrated in summer over a distance of over 300 miles to the desert areas of Bikaner and Jaipur, and bred there in July—August. The new generation of adults produced here migrated with the cyclonic winds accompanying a depression from the Bay of Bengal in September into the Palanpur, Sirohi and Mehsana areas of western India and gave rise to large bands of gregarious hoppers there. The hopper infestations found attacking millets in the Sirohi and Mehsana areas in October, 1937 should have been pronounced to have resulted solely from intense local multiplication, if the earlier data in regard to the breeding in Baluchistan and Bikaner had not been collected already.

Mention made by Cotes (1891) in the *Indian Museum Notes* of a great locust invasion in Madras in 1878 prompted me to seek the original records for studying the data, if possible, in correlation with rainfall and seasonal winds. With the kind help of the Government of Madras, printed records of the Proceedings of the Board of Revenue pertaining to the locust infestation of 1878 were obtained in 1938 and studied. Subsequently in 1941, further records were examined with permission at the Madras Records Office, and recently in 1942, data on the prevalence of locusts in 1878 in the Mysore State were, with the kind courtesy of