

Investigation in Double and Triple Cropping of Paddy in Chingleput District *

by

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Synopsis: Double cropping of rice is the usual practice in areas of Southern India where either canal irrigation facilities are available or protective irrigation is assured on account of availability of wells. In such areas, yield of rice can still further be stepped up by introducing the possibility of growing three crops of rice on the same land as it is proved that a total yield of 7926 lb. can be realised when three crops are raised. Strain TKM. 6 has been found to be suitable for cultivating in sornavari season and Co. 18 for the Navarai season in the Chingleput District.

Introduction: Rice is the most important of the crops cultivated in the Chingleput district occupying 70% of the cultivable area raised throughout the year in all the three seasons viz., Sornavari (May to September), Samba (August to February) and Navarai (December to March).

There are three different methods of cultivation viz., dry, semidry and wet. Dry cultivation forms 40% of the total cultivable area of which 40% is occupied by dry paddy. Semidry cultivation is followed in lands fed by irrigation tanks holding water for about three months. About 75% of the paddy area in this district comes under this system. Wet cultivation is carried out in lands that receive their water supply from spring channels and irrigation tanks. Lands with tank irrigation are also supplemented by wells in the later stages of the crop.

In the dry and semi-dry areas the following rotations are in vogue viz., paddy followed by paddy, gingelly or ragi followed by paddy, and groundnut or cumbu followed by paddy. In the wet areas the following rotations are adopted viz., paddy followed by paddy, ragi or gingelly raised in May-June followed by samba paddy and groundnut, ragi or gingelly raised in January or February followed by samba paddy. The object of this paper is to assess the relative merits of raising three crops of paddy and that of cultivating two crops of paddy on the same land and to explain the possibility of growing three crops of rice in a year on the same land where there is assured irrigation supply and where the soil is well drained by adopting intensive methods of cultivation and judicious manuring schedule and show that it is beneficial to cultivate the land throughout the year rather than leaving it fallow.

Material and Methods: The trial was laid out for three years from 1958-'59 to 1960-'61 with the following treatments:

- Tr. 1. Three crops of paddy Sornavari (TKM. 6), Samba (Co. 2), Navarai (Co. 18).
- Tr. 2. Two crops of paddy-Sornavari TKM. 6, Samba Co. 25, Navarai fallow.

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Tr. 3. Two crops of paddy-Sornavari fallow, Samba Co. 25, Navarai TKM. 6.

Tr. 4. Two crops of paddy followed by a Green - } Sornavari TKM. 6.
manure crop (sesbania) } Samba Co. 25.

For sornavari and Navarai seasons the strains TKM. 6 and Co. 18 were selected as they are popular among the ryots. For samba season Co. 2 was selected in Treatment 1 as it is a medium duration strain. For the other treatments in samba season Co. 25 was selected as it is a high yielding long duration and blast resistant strain. A seed rate of 30 lb. per acre for samba season and 35 lb. per acre for Sornavari and Navarai seasons was used.

Five thousand pounds of green leaf, 150 lb. of superphosphate and 75 lb. of ammonium sulphate per acre were applied as basal dressing and a second dose of ammonium sulphate at 75 lb. per acre was also applied one month after planting for each crop in the different seasons. Nurseries were raised in other fields and seedlings were transplanted adopting a spacing of 10"×6" for samba season and 10"×4" for sornavari and Navarai seasons.

Results: The yield data i. e. acre yield of grain and the net profit per acre (Rupees) realised for the three years are furnished in Table I.

It is seen that raising three crops of paddy on the same land in one cropping year has given maximum return per acre. This is followed by treatment 2 i. e. (TKM. 6 in sornavari season followed by Co. 25 in samba season). Raising three crops has recorded a total yield of 7926 lb. in one acre whereas double cropping has yielded 5895 lb. total yield per acre. It has also been proved that strain TKM. 6 yields better in sornavari than in Navarai season. In Navarai season the performance of Co. 18 is better than TKM. 6. TKM. 6 has recorded better yield when raised in Sornavari season after leaving the lands fallow in Navarai season following a long duration samba paddy than after a sesbania crop in navarai season. The sesbania crop in Navarai following a long duration samba crop has not increased the yield of the succeeding crop of TKM. 6 Sornavari season.

TABLE I.
Acre Yield of Grain.

	Three crops			Two crops			Two crops & Sesbania		
	Sornavari Samba Navarai	TKM. 6 Co. 2 Co. 18	Sornavari Samba Navarai	TKM. 6 Co. 25 Fallow	Samba Navarai Sornavari	Co. 25 TKM. 6 Fallow	Sornavari Samba Navarai	TKM. 6 Co. 25 Sesbania	
Grain yield lb. per acre.									
1958-'59	3207	3204	2630	3621	2922	3424	2818	1998	
1959-'60	2926	2730	2932	2858	2539	2078	2807	2374	
1960-'61	2754	2114	2121	2762	1984	2409	2350	2086	
Mean yield per acre for three years	2982	2683	2261	3080	2815	2969	2678	2153	
Total	7926		5895		4312		4831		
1958-'59	424	332	264	543	275	468	335	163	
1959-'60	381	330	198	385	306	180	371	234	
1960-'61	335	210	109	318	232	252	211	273	
Mean	380	293	190	415	238	300	305	223	
Total per cropping year	863		653		389		443		

Net Profit per acre (Rupees)