

Agri. Res. J. Kerala, 1979, 17 (1)

PERFORMANCE OF NINE VARIETIES OF TURMERIC (*CURCUMA LONGA*, L.) IN COCONUT GARDENS

Intercropping in coconut plantations is primarily based on the concept of exploitation of the under utilized soil and radiation resources. Successful intercropping requires that crops and their varieties selected should be adaptable to varying degrees of shade during the course of the day. Nelliat (1976) indicated the possibility of raising turmeric in coconut gardens. Since varietal adaptability to shade tolerance will be the prime factor governing the yield of intercrops and that this information is limiting in turmeric, it is necessary that shade tolerant varieties are spotted out and recommended for intercropping. With this objective an observational trial was carried out in the H block of the farm attached to Coconut Research Station, Pilicode, during the year 1977-'78. The soil of the experimental site was laterite, acidic in reaction with a pH of 5.5 and was moderate in soil fertility. The performance of nine varieties of turmeric were compared viz. Type-1, Wynad local, Rajapuri, G. L Puram, Chayapasuma, Kasthuri thanuka, Armoor, T. Sunder and Sugantham. The experiment was conducted in a randomised Block Design with three replications, in plots of size 14.04 m². The prepared field was laid out in to beds of size 3.6 m x 1.3 m x 0.15m. Farm Yard Manure at the rate of 10 t/ha. was given as basal dose. Nitrogen, phosphorus and potash at the rate of 30:30:60 Kg/ha, respectively were given in three split doses as recommended by the Kerala Agricultural University (Anon., 1976). The rhizomes were planted at a spacing of 30 cm x 15 cm, on 20-5-1977.

Mulching was given with green leaves immediately after planting and 50 days after, at the rate of 15 tonnes per hectare. The crop was weeded and earthed up two months after planting. Two more weedings were given four and five months after planting. No irrigation was provided. The experimental area included 12 coconut palms and all the beds invariably received some shade during the course of the day. The crop was harvested on 18-3-1978. Average number of leaves, number and weight of fingers, of three plants selected at random, from each plot and total yield of rhizomes per plot were recorded. The border rows of each bed were included in selecting observational plants as well in computing per hectare yield. The observations were statistically analysed and utilized for treatment evaluation.

The results are presented in Table 1. The data show that the varietal differences were statistically significant in respect of all the criteria used in treatment evalution. Yield- of fresh rhizome varried from 9.3 to 18.86 tonnes

Table 1 Mean values of yield and yield attributes. (1977-'78)

Varieties	Number of leaves per plant	Number of fingers per plant	Weight of fingers per plant (g)	Yield of fresh rhizomes (Kg./plot)
Type—1	8.67	12.11	202.67	13.4 (14.82)
Wynad local	16.89	9.45	288.33	16.27 (18.07)
Rajapuri	12.44	12.89	178.33	14.43 (16.03)
G. L. Puram	14.56	11.67	253.89	10.63 (11.81)
Chayapasuma	20.11	18.33	245.03	9.43 (10.47)
Kasthuri thanuka	9.89	16.33	185.33	11.97 (13.3)
Armoor	9.78	9.89	106.67	8.79 (9.3)
T. Sunder	13.33	11.67	212.22	15.7 (17.44)
Sugantham	15.22	10.00	281.11	16.97 (18.86)
D. D. at 5%	5.35	1.25	30.25	1.94 (1.8)

Note: Figures in parenthesis are yield in tonnes per hectare

per hectare. "Sugantham", "Wynad local" and "T. Sunder" recorded the highest yield of 18.86, 18.07 and 17.44 tonnes per hectare and the rhizome yield of these varieties were statistically on par with each other. Higher accumulation of dry matter in fingers and mother rhizomes in these varieties might have resulted in higher yield. Highest yield of fresh rhizomes in spite of lower number of fingers suggests that there was better development of fingers, possibly because photosynthetic process was not impaired. Thus the available evidences suggest that these three varieties are adaptable to the conditions of partial shade in coconut gardens. The observations on the performance of "G. L. Puram", "Chayapasuma", "Kasthuri thanuka" and "Type. I" indicate that these varieties failed to give higher yield, though there were larger number of leaves and fingers. The low yield was probably due to poor deposition of synthesised materials in the rhizomes due to reduced photosynthesis. It appears from the higher number of fingers that they may be potentially high yielding varieties in bright sunshine but unsuitable under any form of shade. The variety "Armoor" produced low number of leaves and fingers. The average weight of fingers as well as yield was low. Lower values of number of leaves, fingers, and weight of fingers suggest that this may be a poor variety even under conditions of bright sunshine. Thus the present study revealed that among the nine varieties tested "Sugantham", "Wynad local" and "T. Sunder" are best adapted for cultivation in coconut gardens under rain fed conditions.

സംഗ്രഹി.

പിലികോട് കെര ഗവർണ്ണൻ കേന്ദ്രത്തിൽ 1977—78ൽ നടത്തിയ ഒരു പരീക്ഷണ നമ്പിനും നിന്നും തെങ്ങിന്റെ ഇടവിളയായി കൂഷിചെയ്യുന്ന 'സുഗന്ധ' 'വയനാട്' ഫലാക്കൽ റീഡി. 'സുരംഗ' എന്നൊരു ഇന്ത്യൻ ഇന്ത്യൻ ഫലാക്കൽ മണ്ഡലം അറബിയോജ്യമാണെന്നു കണ്ടു.

Acknowledgement

The authors are indebted to the Associate Professor in charge, Coconut Research Station, Pilicode, for permission and the facilities provided for the study.

REFERENCES

- Anon, 1976. *Package or Practices Recommendations*, Directorate of Extension Education, Kerala Agricultural University, Mannuthy 77—79.
 Nelliat, E. V. 1976, Intensive cropping in coconut gardens. *Indian Farming*, 27, 9—12.

Coconut Research Station,
Pilicode.

N. NEELAKANTAN POTTY
P. K. ASHOKAN
T. C. RADHAKRISHNAN

(M. S. Received: 15-6-1978)