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COMPARATIVE PERFORMANCE OF LESSER YAM

The lesser yam [*Dioscorea esculenta,* (Lour) Burk] is a tuber crop grown in many of the homesteads in Kerala. The varieties of *D. esculenta* vary widely in their yield and yield attributes (Anon , 1972). Preliminary yield trials conducted at Central Tuber Crops Research Institute, Trivandrum, revealed that De-11 and De-17 were more promising for cultivation in the low rainfall tracts of the state (Hrishi and Eshwari Amma, 1973). The present studies were carried out at the Coconut Research Station, Nileswar to screen a few varieties of lesser yam for their yielding potential under the agro-climatic conditions of north Malabar,

The soil of the experimental site is acidic red sandy loam.

The four varieties of lesser yam De-11, De-17, De-23 and De-40 were supplied by the Central Tuber Crops Research Institute, Trivandrum for this experiment. The trial was laid out in randomised block design and replicated five times in plots of size 4.5 m x 4.5 m. The crop was planted during April and harvested in December. The trial was conducted for three seasons, during 1976, 1977, and 1978.

During the year 1978 the trial was expanded to include two more varieties viz., De-51 and De-52.

Pits of size 30 cm^3 were opened at a spacing of 75 cm x 75 cm. The top soil from the pits was mixed with farm yard manure at the rate of 0.5 kg per pit and this was used for refilling the pits. Single seed tubers were planted in each pit and mulched with dry leaves. Fertilizers were applied to the crop to supply 80, 60 and 120 kg/ha of N, P_2O_5 and K_2O respectively. The first dose of fertilizers i. e., half of N, half of K_2O and full quantity of P_2O_5 was applied within one week of sprouting. The remaining quantity of N and K_2O was applied one month after the first dose.

The crop was weeded and earthed up twice along with the application of fertilizers. The plants were trailed on separate poles.

Three observational plants were selected at random from each plot during the third year of the trial and the observations on number of tubers and weight of tubers per plant were recorded. The consumer acceptability of the cooked tubers was assessed by the taste pannel method (Jellinck, 1964).

The tuber yield data of the four varieties tested during all the three seasons were pooled. The 1979 data were analysed separately also to get comparison of the two varieties included in the trial during this year only.

The varieties did not differ significantly in respect of number of tubers and weight of tubers per plant (Table 1). De-11 showed tendency to produce more number of tubers per plant. De-11 produced maximum number of tubers. With respect to development of tubers also De-11 showed promising trend by recording the highest tuber yield per plant.

Analysis of the yield data showed that the four varieties compared during 1976,1977 and 1978 did not differ significantly. The varieties showed significant difference with respect to yield during 1978. During 1979 the varieties De–11 and De-40 recorded high yield. The other varieties, De-17, De-23, De–51 and De-52 were inferior to De–11 and De-40. Pooled analysis of the three years' yield data of the varieties De-11, De-17, De-23 and De–40 showed that the varieties were not significantly different. A comparison of the yield recorded during the three years indicated the high yielding ability of De-17 and De–11. In a preliminary investigation conducted at Central Tuber Crops Research Institute Trivandrum, De-11 was recorded as the best variety (Anon., 1972).

The year to year variation in yield of tubers was highly significant. This was mainly due to the rainfall pattern of the experimental tract during the corresponding years. The early pre–monsoon showers received just before and after the planting of the tubers encouraged the establishment and tuber production of the first year crop. During the later two years the pre–monsoon showers received were negligible, the planting was delayed, and the crop was exposed to very heavy rain fall during the early phase. During May, 1978 the rainfall received (505 mm) was almost four times more than that received (128 mm) in May, 1976. The lowest yield in all the varieties corresponded to this year.

Data on acceptability of tubers to local consumers showed that De–40 is the most preferred and De-11 the least. The consumer preference for the varieties De-17 and De-23 was also low. The fact that De–40 is as good as De–11 in yield, with a far higher consumer preference showed that De-40 was relatively more suitable for cultivation in the high rainfall tracts.

Table 1

Mean yield of tuber, number of tubers and quality of tubers

Varieties	Mean yield, kg/ha				No.of tubers per plant	Weight of tubers per plant	Marks scored in cooking quality test
	1976	19/7	1978	Pooled			
De-11	15342	5120	4421	8571	12.2	460	8
De-17	19716	5120	2469	9575	7.7	230	20
De-23	14862	4636	2469	7669	11.0	260	26
De–40	14613	4907	4008	8142	9.1	300	64
De–51		—	1048	—	5.8	250	60
De-52	—	—	2412	—	10.8	250	19
CD (0.05)	NS	NS	1337	NS	NS	NS	—
SEm±	1627	583		591	7.1	172	—

സംഗ്രഹം

നീലേശ്വരം കേര ഗവേഷണ കേന്ദ്രത്തിൽ താരതമ്യ പഠനത്തിന് വിധേയമാക്കിയ ചെറുകിഴങ്ങുകളിൽ ഡി. ഇ. 40 എന്ന ഇനമാണ് കൃഷിക്ക് ഏറ്റവും യോജിച്ചതെന്ന് കണ്ടു.

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