



Performance of Short Duration Cassava (*Manihot esculenta* Crantz) Varieties on Yield and Quality under Manipur condition

Cassava (*Manihot esculenta* Crantz) is also known as yuca, tapioca, manioc or mandioca. It is an important starchy food crop of tropical and sub tropical country. It is grown for the supplementing carbohydrate in the diet of North-Eastern region of India. As a raw material, cassava is considered as food security crop, cash crop, feed crop and also as raw materials for industrial uses and can be processed into a wide variety of products for food and industrial uses such as starches, flours, alcohol, glucose and other products. It is widely grown as a rainfed crop in the valley and Jhum area in the entire North – Eastern states of India. Although, the agro climatic condition of Manipur are well suited for cassava cultivation, the area and productivity is very low which is mainly due to the lack of technical input and non availability of good quality planting material. In the present study, in order to identify the varieties suitable for Manipur condition, the performance of cassava varieties released from ICAR-CTCRI were evaluated along with Manipur local.

The present study was conducted during 2011-2013 at Horticultural Research Farm, CAU, Andro. The soil type is clay loam and acidic in reaction (pH 5.24). Stem cutting of uniform size (four node cutting) were collected and planted in the nursery bed. Four to five leaves stage rooted

plants were transplanted by dibbling at 90 cm X 75 cm spacing. The variety such as Sree Vijaya, CI-848, CI-850, Sree Jaya, H-119, Sree Prakash and Manipur local were used in the study. The experiment was conducted in RBD with three replications. The parameters such as number of tuber per plant, tuber diameter (cm), tuber length (cm), single tuber weight (g), tuber yield per plant (g), tuber yield per hectare ($t\ ha^{-1}$), dry matter and starch content (fresh weight basis) were recorded. Observations were recorded on five randomly selected plants from each replication. The tubers were harvested at seventh month after planting. Observed data were subjected to statistical analysis and interpretation were made accordingly.

Varietal variation was found in yield and yield characters/parameters of cassava (Table 1). Sree Prakash recorded the maximum number of tuber (3.55) per plant and tuber diameter (5.40 cm) which was on par with Sree Jaya whereas the minimum number of tuber (2.93) and tuber diameter (4.28 cm) was recorded from Manipur local. Maximum tuber length (36.46 cm) was observed in Sree Jaya and the minimum tuber length was found in H-119 (30.59). Sree Prakash recorded the maximum single tuber weight (479.40 g), tuber yield per plant (1699.33 g) and tuber yield per hectare ($24.68\ tha^{-1}$). However, the

Table 1. Effect of cassava varieties on yield, yield attributes and quality.

Variety	Number of tuber per plant	Mean tuber length (cm)	Mean tuber diameter (cm)	Single tuber weight (g)	Tuber yield per plant(g)	Tuber yield tha^{-1}	Dry matter content (%)	Starch content (%)
Sree Vijaya	3.22	32.26	4.13	237.91	766.83	11.36	40.24	24.80
CI-848	3.38	33.39	4.54	269.82	909.97	13.48	36.09	20.06
Sree Jaya	3.51	36.46	5.19	422.32	1484.50	21.99	40.94	24.06
CI-850	3.53	33.83	4.87	329.11	1161.12	17.20	44.70	23.04
H-119	3.51	30.59	4.49	258.98	908.59	12.46	40.73	21.10
Local	2.93	32.44	4.28	252.70	739.43	10.94	39.48	21.80
Sree Prakash	3.55	35.11	5.40	479.40	1699.33	24.68	41.12	22.04
S.Ed (\pm)	0.07	1.20	0.13	4.77	33.16	0.55	1.27	1.12
CD (0.05)	0.16	2.62	0.29	10.40	72.29	1.21	2.77	2.44

minimum tuber yield per plant (739.43 g) and tuber yield per hectare (10.94 tha¹) was recorded from local variety and minimum single tuber weight (237.91 g) was noticed in Sree Vijaya. Such variability in yield and yielding parameters might be genetic makeup of varieties. Results obtained by Hedge et al. (1993), Nageswari et al. (1997), Ruth and Ramaswamy (2001) and Bharathi et al. (2005) also confirms the results.

The results on quality analysis revealed that the highest dry matter content (44.70%) was observed from CI-850 which was significantly higher than the rest of the varieties and was followed by Sree Prakash (41.12%) which was at par with Sree Jaya (40.94%), H-119(40.73%) and Sree Vijaya(40.24%) while the minimum tuber dry matter was recorded from CI-848(36.09%). The highest starch content was observed from Sree Vijaya (24.80%) which was at par with Sree Jaya (24.06%) and CI-850(23.04) while the minimum was recorded from CI-848(20.06%). Results are in line with the findings of Sen and Goswami (1992) and Samutthong *et al.* (2013).

The results revealed that Sree Prakash was superior with respect to yield while Sree Vijaya and CI-850 recorded

the highest starch and dry matter content respectively under Manipur condition.

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Received: 6 November 2016

Accepted: 28 November 2016

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