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Short Communication

EVALUATION OF TURMERIC GERMPLASM FOR YIELD AND QUALITY

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Turmeric is a colourful spice combining properties of a dye, cosmetic and drug. Turmeric owe its properties to the colouring principle *curcumin.* Alleppey turmeric from Kerala, renowned for the high curcumin content is in short supply in trade circles. This has necessitated the evaluation of turmeric genotypes so as to identify high yielding types with high *curcumin* content suitable for Kerala conditions. With this objective the present study was undertaken at the College of Horticulture, Vellanikkara, Thrissur during 1991-93.

A preliminary evaluation of 17 turmeric genotypes obtained from NBPGR Regional Station, Vellanikkara, Thrissur was conducted during 1991-92. Selection was based primarily on fresh rhizome yield and types producing more than 3 kg/m^2. During 1992-93 an experiment was laid out in a randomized block design with 11 treatments and three replications. The treatments comprised 10 selected NBPGR collections and *Sugandham* the variety popular throughout India served as control. The plot size was 2 m^2 with 50 cm interchannel. Seed rhizomes (720 g/plot) were planted on raised beds at a spacing of 25 × 25 cm. The cultural and manurial practices adopted were as per the Package of Practices Recommendations (Anon., 1989). The biometric characters were recorded four months after planting. The crop was harvested when the vegetative parts withered by nine months after planting. Fresh rhizome yield was recorded and the curing percentage and *curcumin* content were analysed as per standard procedures.

Data on biometric characters, yield and *curcumin* content are presented in Table 1. Among the biometric characters plant height alone showed significant difference depending on turmeric types. Maximum plant height was shown by the type VK 112 (156.00 cm) followed by CK 99 (141.00 cm) which were on par. Though not significant, maximum number of leaves/plant (24.00) and

maximum number of tillers/plant (2.00) were recorded for VK 116. The type VK 112 had maximum leaf length whereas leaf width was highest for VK 121. In conformity with the present finding, Subbarayudu *et al.* (1976) and Philip and Nair (1983) also could not observe any significant variation in number of tillers among the turmeric types.

Table 1. Biometric characters, yield of rhizomes, curing per cent and curcumin content as influenced by turmeric types

Treatments	Accession	Plant height (cm)	No. of tillers/ plant	No. of leaves/ plant	Leaf length (cm)	Leaf width (cm)	Raw yield kg ha^{-1}	Curing (%)	Cured yield kg ha^{-1}	Curcumin content (%)
VK 88	IC 70130	126.33	1.88	23.00	56.33	14.33	32.88	20.76	6.83	5.02
VK 96	IC 70133	119.67	1.63	18.67	45.67	12.00	30.40	22.98	7.00	7.85
VK 99	IC 88752	141.00	1.47	15.00	53.67	15.00	29.97	17.71	5.33	6.98
VK 107	IC 70011	135.00	1.28	13.00	57.67	15.00	32.10	19.62	6.29	6.99
VK 109	IC 136894	138.00	1.28	12.33	47.00	11.67	29.40	22.22	6.51	5.13
VK 111	IC 88643	89.33	1.67	13.67	45.67	14.67	24.53	23.76	5.83	6.82
VK 112	IC 136887	156.00	1.73	17.33	63.67	17.00	22.2	20.35	4.51	7.23
VK 115	IC 88658	132.33	1.62	15.33	50.33	15.00	31.53	18.37	5.79	6.29
VK 116	IC 88662	98.00	2.00	24.00	50.33	14.83	38.83	21.68	8.43	6.88
VK 121	IC 136868	102.00	1.61	14.00	53.67	17.33	43.02	16.32	7.00	5.40
Sugandham	(control)	117.67	1.14	12.67	54.67	15.00	25.42	17.43	4.44	5.25
		23.71*	NS	NS	NS	NS	3.52*	0.64*	0.78*	0.22*

NS - Not significant

* - significant at 5% level

Raw rhizome yield was significantly influenced by the turmeric types. Highest raw yield (43.02 tonns ha^{-1}) was recorded for VK 121 and it differed significantly from other types. Curing percentage was found to be significantly high in most of the types except VK 121 and VK 99 when compared to the check variety. The highest curing percentage was recorded for VK 111 (23.76%) followed by VK 96 (22.98%).

The turmeric genotypes, differed significantly with regard to cured yield. The cured yield was significantly high in all the types except VK 112 which was *at par* with *Sugandham*, the check variety. Cured yield was found to be

maximum for VK 116 (8.43 tonnes ha^{-1}) followed by VK 96 and VK 121 (7.00 tonnes ha^{-1}) which were *at par*. Significant and positive correlation of rhizome yield with number of leaves as observed by Reddy and Rao (1988) holds true in this study also. VK 116 which recorded maximum number of leaves produced significantly high rhizome yield also.

Significant difference was observed in the *curcumin* content among the turmeric germplasm. Excepting VK 88 and VK 109, all other types had high curcumin content compared to the check variety. The *curcumin* content was found to be highest in VK 96 (7.85%) followed by VK 112 (7.23%) and these are collections from Kerala representing the Alleppey type.

The results indicated that the turmeric types VK 116 and VK 96 are promising with regard to cured yield of rhizomes and high *curcumin* content.

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