Performance of turmeric (*Curcuma longa* L.) varieties in the hill zone of Karnataka, India

K S SHESHAGIRI & B C UTHAIAH

University of Agricultural Sciences (Bangalore)
Regional Research Station
Mudigere - 577 132, Karnataka, India.

ABSTRACT

A field experiment was conducted at Mudigere (Karnataka, India) to assess the yield performance of six elite turmeric (*Curcuma longa*) varieties under rainfed conditions. The yield of fresh turmeric was maximum in BSR-1 (16.57 t/ha) followed by Waigon (15.45 t/ha). BSR-1 was also superior in growth attributes.

Key words: *Curcuma longa*, turmeric, varieties, yield.

Turmeric (*Curcuma longa* L.) (Zingiberaceae), an important spice crop, is mainly grown in southern India. Wide genetic variability exists in turmeric with regard to growth and yield (Muralidharan & Balakrishnan 1972; Rao, Reddy & Subbarayudu 1975; Philip & Nair 1986; Pujari, Patil & Sapkal 1987; Indiresh *et al.* 1990). In India, the hill zone of Karnataka with an annual rainfall of 2400 mm has great potential for the crop under rainfed conditions. Hence the present investigation was carried out at the Regional Research Station, Mudigere (Karnataka, India) during 1991-1993 to assess the yield and growth performance of six turmeric varieties under rainfed conditions in this region.

The trial was laid out with six promising turmeric varieties in a Randomised Block Design with three replications. A spacing of 40 cm × 30 cm was maintained with a plot size of 3.00 m × 2.25 m . Planting was done in May during 1991 and in June during 1992. The Regional Research Station has a subtropical climate. Generally the monsoon is followed by a dry spell from November to March. The total rainfall was 2450 and 2700 mm during 1991 and 1992, respectively with 110 rainy days during both the years. Soil pH was 6.2 and soils were sandy loam. The crop was grown under rainfed conditions with recommended cultural practices. Ten plants were selected at random from each plot and studied for growth parameters. The data on plant height, leaves/clump, tillers/clump and length and breadth of leaves were recorded at 120 days after planting. The crop was harvested 240 days after planting and fresh turmeric yield and other yield parameters were recorded.

There were significant variations in

Table 1. Growth characters, yield components and yield of turmeric varieties

Variety	Plant height (cm)	Leaves/ clump	Tillers/ clump	Leaf length	Leaf breadth (cm)	Length of fingers		No. of fingers		Yield* (t/ha)
						Primary (cm)	Secondary (cm)	Primary (cm)	Secondary (cm)	
BSR-1	39.65	16.30	3.35	41.50	14.50	7.02	4.26	6.70	17.55	16.57
CO-1	35.47	14.82	3.35	37.50	14.12	6.92	4.03	8.60	23.10	14.35
Kasturi	31.34	14.42	2.87	36.25	12.75	6.04	3.86	5.65	10.91	14.45
Armoor	33.09	14.25	2.67	38.00	12.75	6.70	4.24	6.25	14.10	15.13
Waigon	31.70	14.90	2.97	37.00	13.25	7.04	4.90	5.35	14.56	15.45
PCT-8	33.50	13.95	2.77	36.50	12.87	6.33	3.96	8.10	19.86	12.49
CD at 5%	2.75	1.48	0.41	NS	NS	0.63	0.69	2.24	7.31	1.20
SEm ±	0.91	0.49	0.14	1.47	0.46	0.21	0.23	0.74	2.43	0.39

Values indicate pooled data for 1991 and 1992
* Fresh rhizomes

growth characters and yield components among the six turmeric varieties evaluated (Table 1). Maximum plant height was recorded in BSR - 1 (39.65 cm) which was significantly superior over other varieties. The number of leaves/clump was higher in BSR-1 (17.10) followed by Waigon (14.90). BSR-1 and CO-1 produced maximum number of tillers/clump (3.35) followed by Waigon (2.97). However the differences in length and breadth of leaves among the varieties were non significant. Among rhizome characters, significant variations were observed only in length and number of primary and secondary fingers/clump. Waigon was superior in length of primary (7.04 cm) and secondary (4.90 cm) fingers followed by BSR-1. Maximum yield of fresh turmeric (16.57 t/ha) was obtained in BSR-1 followed by Waigon (15.45 t/ha). Similar variations in growth and yield of turmeric were also reported by other workers (Rao 1965; Aiyadurai 1966; Rao, Reddy & Subbarayudu 1975; Philip 1983; Philip & Nair 1983).

Acknowledgements

We thank the Director of Research, University of Agricultural Sciences, Bangalore and the Associate Director of Research, Regional Research Station, Mudigere for facilities provided and encouragement.

References

Aiyadurai S C 1966 A review of research on spices and cashew in India. Indian Council of Agricultural Research, New Delhi.

Indiresh K M, Uthaiah B C, Sridhara Herale P & Balakrishna Rao K 1990 Morphological, rhizome and yield characters of different turmeric varieties in Coastal Karnataka. Mysore J. agric. Sci. 24 : 484-490.

Joseph Philip & Nair P C S 1986 Studies on variability, heritability and genetic advance in turmeric types. Indian Cocoa, Arecanut & Spices J. 10 : 29-30.

Muralidharan A & Balakrishnan S 1972 Studies on the performance of some varieties of turmeric and its fertilizer requirement . Agric. Res. J. Kerala 10 : 112-115.

Philip J 1983 Studies on growth, yield and quality components in different turmeric types. Indian Cocoa, Arecanut & Spices J. 6 : 93-97.

Philip J & Nair P C S 1983 Morphological and yield characters of turmeric types. Indian Cocoa, Arecanut & Spices J. 6 : 61-67.

Pujari P D, Patil R B & Sapkal R T 1987 Studies on growth, yield and quality components in different turmeric varieties. Indian Cocoa, Arecanut & Spices J. 11 : 15-17.

Rao R M, Reddy R C K & Subharayudu M 1975 Promising turmeric types of Andhra Pradesh. Indian Spices 12 : 2-5.

Rao V T 1965 Curing and processing of turmeric in Andhra Pradesh with special reference to Duggirala. Spices Bull. 4 : 91-95.