

Performance of turmeric (*Curcuma longa* L.) varieties in lower Pulney hills of Tamil Nadu, India

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ABSTRACT

Eight turmeric (*Curcuma longa*) varieties were evaluated under rainfed conditions for two crop seasons at lower Pulney hills, Tamil Nadu, India. The varieties differed among themselves with regard to yield and growth characters such as plant height, number of tillers per plant, leaves per tiller, leaf length and breadth and curing percentage. Suvarna (PCT-8) had maximum number of tillers per plant but was inferior to others in relation to other growth traits. The highest yield (t/ha - fresh rhizomes) was recorded in BSR-1 (20.88), followed by Suvarna (19.32) and Suroma (19.04).

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

India is the largest producer and exporter of turmeric (*Curcuma longa* L.) in the world. Turmeric is mainly grown in Andhra Pradesh, Tamil Nadu, Kerala, Bihar, Orissa and Maharashtra in India. Twelve improved varieties of turmeric have been released by various organisations (Edison *et al.* 1991). The performance of different turmeric cultivars has been examined at various locations (Rao, Reddy & Subbarayudu 1975; Subbarayudu, Reddy & Rao 1976; Philip 1983; Reddy, Rao & Reddy 1988 & 1989). Systematic efforts on introduction and evaluation of improved varieties were not undertaken at lower Pulney hills of Tamil Nadu wherein a large extent of area is under cultivation

of turmeric with inferior local varieties. Hence the present study was carried out to evaluate the performance of improved turmeric varieties in this region.

The experiment was carried out for two crop seasons (1992-93 and 1993-94) under rainfed conditions at Indian Cardamom Research Institute, Regional Station, Thadiankudisai (lower Pulney hills of Tamil Nadu, India). The trial was laid out in RBD with three replications using seven promising varieties, viz; Suvarna (PCT-8), Suguna (PCT-13), Sudarsana (PCT-14), Suroma (PTS-24), BSR-1, CO-1, Lakodong and a local type (as check). The net plot size was 3 m x 1 m and the package of practices

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recommended by the National Research Centre for Spices, Calicut was followed. Observations on growth characters like height of pseudostem, number of tillers; number of leaves and leaf length and width were recorded from 12 randomly selected plants per plot. Fresh turmeric yield was recorded from each plot which was used for computation of per hectare yield. A sample of 1 kg of fresh rhizome from each plot was dried after boiling to determine curing percentage and curcumin content.

The results indicated that there were significant variations among the varieties. Suvarna had maximum number of tillers per plant (4.76) but was inferior to others with regard to other growth attributes. BSR-1 had highest number of leaves per tiller (6.16). Maximum fresh rhizome yield (t/ha) was recorded in BSR-1 (20.88) followed by Suvarna (19.32) and Suroma (19.04). Yield (t/ha) of Suguna (11.57), Lakadong (13.46) and Sudarsana (13.95) was less than the local variety (16.84). Curing percentage was maximum in Lakadong (24.87) followed by Suroma (22.78). No seasonal effect was noticed with regard to curing percentage. The variation in curing percentage may be due to genetic factors rather than the environmental conditions under which they were grown as reported by Sharma & Krishnamurthy (1960), Rao (1965) and Philip (1983). The curcumin content varied from 3.37 to 5.44 per cent. Lakadong had the highest curcumin content followed by Suvarna (4.68%) and CO-1 (3.79%).

The varieties exhibited highly significant variations for yield. The interaction between treatments and seasons was significant for height of tillers and yield. However no significant interaction was seen for the variables like

tillers per plant, leaves per tiller, leaf length and breadth and curing percentage. The highest yield during both the crop seasons was obtained in BSR-1. Lakadong which had maximum curing percentage and curcumin content exhibited lower vigour with regard to all growth traits and yield. The variations in yield and growth attributes among the turmeric varieties grown under same agroecological conditions can be attributed to genetic factors. This is in conformity with the observations of Aiyadurai (1966), Subbarayudu, Reddy & Rao (1976) and Jalgaonkar, Patil & Rajput (1988). BSR-1, Suvarna and Suroma can be popularised at lower Pulneys for increasing the productivity and production of turmeric these areas.

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