

## Studies on varietal performance of Turmeric (*Curcuma longa* L.)

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### SUMMARY

Sixteen *Curcuma longa* L. (Turmeric) varieties were assessed for yield and yield components. There were significant differences among the varieties with respect to plant height and maximum plant height was recorded in ACC-657 (119.67cm) followed by ACC-585 (198.98cm). However, there was non-significant difference in the number of branches per plant. Cultivars had significant differences in maturity and ACC-657 and ACC-585 took longer period i.e. 262 and 238 days, respectively. Regarding yield, cultivar RH-5 produced maximum yield of 49.76 tonnes per hectare as compared to other cultivars and it gave significantly higher yield (5.69 tonnes per hectare) of fresh rhizome which was 12.91 per cent higher over check "Rajendra Sonia". Cost : benefit ratio of this genotype (RH-5) indicated more return 1:2.50 over other genotypes.

Key words : High yielding cultivar of turmeric (*Curcuma longa* L.)

**T**urmeric (*Curcuma longa* L.) is one of the most important spices grown in India which plays an important role in the national economy. India is the largest producer and exporter of turmeric in the world and accounts for more than 46 per cent of the world trade. Turmeric is one of the most important cash crop of north Bihar. Farmers grow turmeric as a pure or inter crop with maize and pigeonpea etc. Though wide genetic variability exist in the crop with respect to the growth and yield but not much work seems to have been done on crop improvement through the simple selection of higher yielding genotypes. The present investigation was, therefore under taken to evaluate the performance of different turmeric genotypes with respect to their yield and yield components with a view to identify the superior types with high yield.

### MATERIALS AND METHODS

The experiment was carried out at the Tirhut College of Agriculture, Dholi, Muzaffarpur (Bihar) under All India Co-ordinated Research Project on Spices, Department of Horticulture during the year 2000-2001, 2001-2002 and 2002-2003. The trial was conducted in RBD with three replications using sixteen promising genotypes of turmeric, which was received from the different centres of co-ordinated project. The net plot size was 3.0m x 2.4m and spacing used was 30cm x 20cm. The package and practices for raising the crop was followed as per recommendation. Five plants were randomly selected for recording the various growth characters viz., plant height, number of tillers per plant, days to maturity and yield in tones per hectare. Percentage increased yield over check and cost : benefit ratio of all the genotypes were also calculated.

### RESULTS AND DISCUSSION

Results of the data presented in the Table 1 showed

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highly significant differences among the turmeric genotypes with respect to plant height, days to maturity and yield in all the three years of experimentation while non-significant differences were observed with respect to number of tillers per plant. Philip (1978) also reported significant variation among the turmeric cultivars with respect to all the above-mentioned traits except number of tillers per plant. Maximum plant height was recorded in ACC-657 (119.67cm) followed by ACC-585 (118.98 cm), TU-1 (110.43cm) and ACC-593 (109.81cm). Minimum height was recorded in TCP-2 (65.54cm) followed by TCP-1 (65.78cm). Philip (1978, 1983) also reported maximum plant height in the cultivars "Chayapasupa" among the nineteen cultivars of turmeric. The cultivar RH-5 produced maximum fresh rhizome yield (49.76 tonnes per hectare) and it was significantly superior to all the rest entries. The check 'Rajendra Sonia' (39.70 tonnes/ha) ranked second and it was significantly superior to rest of the cultivars. The fresh rhizome yield per hectare was minimum in the genotype Kerala (17.98 tonnes/ha) which it was at par with ACC-584 (19.47 tonnes/ha). The cultivar RH-5 gave an yield of 5.69 tonnes per hectare which was 12.91 per cent higher yielder as compared to check 'Rajendra Sonia' while rest of the genotypes were inferior to the check 'Rajendra Sonia'. Cultivar RH-5 gave the maximum benefit with a cost benefit ratio of 1 : 2.50 as compared to other genotypes.