

## **TURMERIC** **(*Curcuma longa*)**

Turmeric is one of the major spice crops of north eastern region. It is used as spice, dye, cosmetics and in religious ceremonies. Though turmeric has not occupied a significant area in the region due to non-existence of processing industry but now some farmers have started growing turmeric and processing at small scale to generate higher income.



### **Cultivars**

The cultivars suitable for NEH Region are as follows:

**Lakadong:-** This is a popular variety of the region. This variety contains 7.4 per cent curcumin, 21.1 per cent dry matter with an average yield of 19.7 t/ha.

**RCT-1 (Megha ThrmERIC-1):-** This variety has been developed by ICAR Research Complex for NEH Region, Umiam; Meghalaya through clonal selection from Lakadong. This variety has curcumin content around 6.8 per cent with dry matter recovery of 20 per cent. The yield potential of this variety is around 30 t/ha.

### **Climate and Soil**

It prefers warm humid climate with average rainfall of 1500 mm and temperature of 20-30 °C. It thrives well up to 1200 m above mean sea level.

Well-drained, friable sandy loam soil, rich in organic matter is required for better growth and development of turmeric. Drainage is absolutely necessary for prevention of disease incidence.

### **Field Preparation**

The land should be ploughed 4-5 times to bring the soil into fine tilth. Beds of 1m width, 15 cm height and 3m length are prepared at 40 cm spacing. About 2000 beds of 3m x 1m size are prepared in one hectare. The optimum spacing is 30 cm x 30 cm under bed system of planting. A bed of 3m x 1m can accommodate 40 plants.

### **Seed Rate**

About 18-20q healthy disease free rhizomes are sufficient for one hectare of land. The rhizomes should be 4-5 cm in length and 25-30 g in weight.

### **Seed Treatment**

Seed treatment induces early germination and prevents seed borne pathogens and Pests. Seed rhizomes are also treated in hot water at 48 °C for 20 minutes before planting. The seed can also be treated with Dithane-M-45 @ 2 g/l of water.

### **Time of Sowing**

The ideal time of sowing is April to May in this region.

### **Method of Planting:**

Turmeric rhizomes are planted in the furrows at a spacing of 30cm x 30cm. The rhizomes should be treated with 0.3 per cent Agallol or Dithane M-45 or Thiram solution for 30 minutes and then dried in the shade before sowing.

## Manure and Fertilizer

FYM 20 tones/ha should be applied at the time of field preparation followed by N: P: K @ 120: 90:90 Kg/ha. 1/3 nitrogen and full doses of phosphorus and potassium is applied at the time of planting. 1/3 quantity of nitrogen is applied 45 days after planting and remaining 1/3 of nitrogen is applied at 90-95 days after planting.

## Intercultural Operation

**Mulching and Shade-** Locally available mulch material like green leaves, tree leaves, dry grasses and paddy straw may be applied to get optimum yield. Mulching enhances germination, increases organic matter, conserves soil moisture and prevents washing of soil due to heavy rains. The first mulching is done at the time of planting with 12.5 tones of green leaves/ha and second after 40 days after planting with 5 tones of green leaves/ha.

**Weeding-** The first weeding may be done in June followed by subsequent hoeing and earthing from July to September at fortnightly intervals.

### Plant Protection

**Leaf blotch** (*Taphrina maculans*): Brownish yellow spots appear on both the surface of leaves and finally leaves wither. Seed treatment with Indofil @ 0.2% or Bavistin @0.1 % is found effective for control of this disease.

**Leaf spot:** It is an important disease of turmeric. Elliptic to oblong, 4-5 cm long, 1-3 cm wide spots are found on leaves. Later on spots become yellow with grayish white center. Foliarspray of Mancozeb (2.5g/l) during June-September at 15 days interval is found effective.

**Thrips** (*Sciothrips indicus*): The nymphs and adults suck the sap from leaves due to which plants turn yellow and sometimes dry up. Rhizomes formed from the infested plants become smaller in size. Spraying of Rogor or Monocrotophos (2.5ml/l) is found effective to control the insect.

**Scale** (*Aspidiotus hortii*). The grey shell scales damage the crop by sucking the sap from rhizomes and stems resulting into deterioration of rhizome quality. Spraying of 0.05% Quinalphos or Monocrotophos is found effective to control the insect.

## Harvesting and Yield

The crop is ready for harvesting in about 8-9 months after sowing (in the month of December). At the time of maturity dry leaves are cut close to the ground. The rhizomes are dug and mother and fingers are separated before curing. A good crop may yield around 20t/ha.

## Seed Storage and Curing

Rhizome should be treated with Dithane M-45 or Thiram (3g/litre of water) for 30 minutes before storage. Dry grass/paddy straw should be kept at the bottom followed by putting turmeric in the pit and sealing the pit by plastering with mud. Fingers are used for curing and mother rhizomes are generally used for seeds, traditionally the rhizomes are boiled in water in copper or galvanized iron or earthen vessels, boiling is stopped when froth comes out and white fumes appear jiggling out a typical odour. The boiling last for 45-60 minutes when rhizomes are soft.