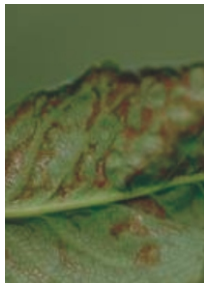
	b) Disease management Damping off	• To monitor the borers incidence Restricted installation of pheromone traps in the field @ 5 no. per acre • Deep ploughing is to be done to expose the insects from the soil. All the shed fruits and part of inflorescence should be collected and destroyed at regular intervals. • Grow trap crops like castor, marigold in the field. • It is a common disease mainly occur in nursery beds. The disease infected seedlings rot at ground level which thereafter die in patches. • Spraying 0.5 to 1.0% Bordeaux mixture @ 3.0g / lit two times one at germination and second spray one week later. • Nursery should be grow in raised beds to avoid water stagnation. • Seed treatment with Trichoderma takes care of seedling rot in nursery.
	Fusarium Wilt	Symptoms are wilting of the plant and upward and inward rolling of leaves where ultimately leaves turn yellow and die. Drenching the soil with 1% Bordeanx mixture @ 3g / lit. Varieties tolerant to diseases should be used wherever the disease is severe. Careful seed selection and adoption of phytosanitary measures will check the diseases of chilli.
	Bacterial leaf spot	Symptoms are small, dark greasy spots on leaf petiole and tender plant parts. In severe cases leaves drop off and causes considerable loss to the crop. Grow resistant vars. (G-4, X-206, G-5). For effective disease control, 10 g of Trichoderma or Pseduomonas sp. per litre of water should be used for spraying. Rouging and early removal of affected plants will control the spread of the diseases.
15	**Harvesting**	Crop is ready for harvesting in about 90 days after transplanting. First harvesting is done at the green stage to stimulate further flush of flowering and fruitset. Chillies are harvested at red stage for canning purpose. Chillies used for drying are picked at fully ripened red stage. There after ripe fruits are picked at intervals of 1-2 weeks and harvesting continues over a period of 3 months with about 5-6 pickings for dry chilly and 8-10 pickings for green chilly depending on season, variety and cultural practices.
16.	**Storage**	Chili is generally stored in jute sacks, which are then kept either in boxes or are hung on the terrace just outside the house, well protected from rain and fog. Green chilly has to be kept in cold storage. Green chillies may be kept under good condition for about 40 days at 320F and 95% R.H.
17.	**Yield**	The yield of fresh chilly varies from 30-40 q/acre depending on variety and growing conditions.The yield of dry chilly is expected to be in the range of 7.5 to 10 q/acre).

Common Insects and Diseases of Turmeric Crop

Fusarium Wilt

Fruit / Pod Borer

Leaf Spot



Chilli Thrip

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Organic Package of Practices for Green Chilly

ICCOA

International Competence Centre For Organic Agriculture (ICCOA),
Bangalore

Organic Package of Practices for Green Chilli

Sl.No.	Organic Activity	Details
1	**Selection and Preparation of Land**	Black soil (rained crop) and well drained chalka or sandy loam soil (irrigated crop) with a pH range of 6.5-7 and more than 1% of organic carbon are well suited for green chilli cultivation. It is required to test the soil once a year to check the levels of pH, organic carbon, macronutrients (NPK), micronutrients and microbial load in the field. If the organic carbon content is less than 1%, apply 20-25 tons/ha of FYM and plough the field 2-3 times to mix the manure thoroughly. Adequate buffer zone must be provided between certified organic fields and non-organic fields at a distance of about 5-7 meters from non-organic fields to prevent drift of prohibited materials on to certified organic fields. Land is prepared to a fine tilth by thorough ploughing / digging. Two to three ploughings are done to bring the soil to fine tilth. In case of direct sowing, three to four ploughings are undertaken and sowing is done along with the last ploughing.
2	**Sowing Season and Time**	Sowing of chilly starts in the month of July and continues till August-September. It is cultivated as a kharif crop.
3	**Variety Selection**	For organic farming open pollinated varieties are preferred. Seed selection is an important step in organic chilly production. Seeds should be carefully selected from the certified organic farms or from farmers' own field which is raised organically. The seeds (which are not treated with chemicals) from local high yielding varieties can also be used in the absence of organically produced seeds. Select disease resistant and locally demand varieties. Red chilli, yellow chilli, lakhauri chilli, janjiri chilli are some of the traditional varieties whereas Pusa Sadabahar, Pusa Jalwa, Punjab Lal, Bhagya Laxmi, Pant C-1, Pant C-2 are some of the improved varieties.
4	**Seed Rate**	The seed rate of green chilli is 2.5-3.0 kg per acre.
5	**Seed Treatment**	Seeds should not be treated with any chemical fungicides or pesticides. The seeds may be treated with Trichoderma and Psuedomonas sp. @ 10 g per kg of seed to prevent incidence of seedling rot in the nursery. Treatment of seed with cow pat pit, beejamrut , amrut pani , panchagavya or trichoderma ensure a good yield and a healthy crop and will protect the crop from disease.
6	**Nursery Raising**	Fresh seeds are sown in well prepared nursery beds. The nursery bed is usually raised from ground level and is prepared by thorough mixing with compost and sand. Seeds treated with Trichoderma are sown and covered thinly using sand. The seeds germinate in 5 to 7 days.
7	**Seed Spacing (nursery)**	About 25-30 nursery beds of 1mx3m size are required to get chili seedlings for one hectare of cultivation.
8	**Seedling Treatment**	Seedlings are kept in the nursery for around 40–45 days before being transplanted in the main field. Treatment of seedlings with jeevamrut will protect the crop from disease.
9	**Soil Fertility Management**	10 tonnes of Farm Yard Manure is applied as basal dose per hectare. Sheep penning @ 2500-3000 sheep per hectare is done if available and neem cake @ 3-4 quintal per hectare is applied with fertilizers at the time of final ploughing. Major nutrients required for good production of chili are nitrogen, phosphorus and potash. Green manure, cultivation of legumes, incorporation of cow pat pit manure, application of amrut pani through the irrigation water and frequent sprays of vermiwash/panchagavya fulfill this requirement. Use of biofertilizers, e.g., Azotobacter and azospirillum is recommended for chili cultivation. Azospirillum is more effective than Azotobacter. It can be applied as seed treatment, seedling treatment or directly mixed with the soil.
10	**Transplanting and spacing (main field)**	Plants should be large enough for transplanting at 6-8 weeks old. It is recommended transplanting is at a spacing of 60 cm in rows 90-105 cm apart with about 17 500 plants per hectare.
11	**Irrigation and water requirement**	Regular irrigation is an important factor for the successful production of chilli crop. The first irrigation is given at the time of transplanting and the subsequent irrigations are given once in a week or 10 days depending on the weather and soil moisture condition. In light soils irrigation is given at 10-12 days intervals, in black cotton soils at 3 week intervals and in summer at 5 to 6 days interval. After every harvest irrigation is given. Flowering and fruit formation are the critical stages for moisture. Scheduling of irrigation is done at IW / CPE ratio of 0.6. However, chilli cannot withstand heavy moisture. Hence irrigation should be given only when necessary. Frequent and heavy irrigations induce lanky vegetative growth and cause flower shedding. During the first month of transplanting, the plants are lightly irrigated. In summer, irrigation on alternate days is sufficient. After transferring from the nursery to the main field, the plants are watered for a month, at intervals of 4–5 days.
12	**Cultural practices and weed management**	Interculture is necessary to keep the field free from weeds, which apart from robbing the crop of nutrients, harbour insects and diseases. Intercultivation is followed by hand weeding to check the weed growth. Frequent shallow cultivation should be done at regular intervals. Under rainfed conditions chilli is successfully rotated with jowar, ragi, cotton, groundnut and castor and as an irrigated crop it is grown in rotation with sugarcane, turmeric, beams, maize or with vegetables. Brinjal, tomato and potato are not recommended for rotation. It can also be inter cropped with ginger, cucurbits, okra and onion. Slash weeding is to be done between the plants.
13	**Staking**	Provide support to the plant with wooden sticks/eucalyptus poles. Staking prevents plants from toppling over due to their shallow root systems.
14	**Crop Protection**	
a)	**Insect management** **Chilli thrips**	Common pest which affect the crop throughout the life cycle. The nymphs and adults infest tender leaves and feed on the sap causing leaf curling, stunted crop growth and damage of buds and flowers.
	Aphids	They suck the cell sap from the leaves and petioles. The quality of the produce is spoiled by imparting blackish colour to the calyx and pods, stunted plant growth and clustered. young leaves.
	Mites	The tiny spider like creatines attack chilli shoot and inflorescence, causing malformation and shedding of flowers. Nymphs and adults suck the cell sap and devitalize the plants. Reduce the use of Nitrogen fertilizers. **Control measures for all:** ● Application of neem cake @ 100 kg/acre is advisable ● Change in the agronomic practices to disturb the life cycle of the grub is also found useful. ● Grass can be heaped at different places in the field and the grubs which accumulate in these heaps may be collected in the early morning and destroyed. ● 400 g/acre of Beauvaria bassiana may be broadcast in the field. ● Application of neem seed kernel extract (NSKE) can be done for control of thrips, aphids and mites. 10 kg of neem seed kernels may be boiled in 15 l of water. 200 ml of this extract may be mixed in 15 l of water and four to five sprays may be given to control sucking pests. ● Release of larvae of Chrysoperla cornea, a bio control agent, once in 15 days is also helpful in controlling thrips and mites.
	Fruit / Pod Borers	The caterpillars eat leaves and later on bores the pods which results in the deterioraction of quality and market price of the produce. Control measures: ● Integrated pest management (IPM) should be followed. Control of borers by poision baits. (5kg bran + 500g carbaryl or 500ml Monocrotophos or Chloropyriphos + 500g jaggery mixed with sufficient quantity of water) and made into small balls and broad cost them in the field in the evening time, so that worms come out from the cracks in the night and eat the bait and are killed.