

Control:

- (i) Picking and destruction of the larvae at the early stages of the crop.
- (ii) Growing of two rows of mustard after every 25 rows of the crop.

Leaf Webber: The leaves are skeletonized by the larvae which remains on the under surface of leaves in webs and feed on them. They also attack flower buds and pods. The insect commonly attacks on early grown crop.

Control:

- (i) Picking and destruction of the larvae at the early stages of the crop.
- (ii) Crop should be sprayed with b Cyfluthrin @ 0.5 ml/litre of water.

Damping off: It is a common disease of nursery. In severe condition the affected seedlings drooped and fall off due to infection at the collar region.

Control: Seed should be treated with thiram @ 2g/kg seed before sowing. After seed germination seedling should be drenched with bavistin @ 1g/litre or dithane-M-45 @ 2g/litre of water.

Sclerotinia drying or white rot: Caused by *Sclerotinia sclerotiorum* (Lib.). The pathogen is soil-borne. It is a serious disease particularly in the hilly region. The fungus advances to the bases of the outer leaves and plant suddenly wilts.

Control:

- (i) Deep ploughing as the sclerotia of the fungus cannot survive below 15 cm.
- (ii) Soil drenching with bavistin @ 1 g/litre of water.
- (iii) Seedling dipping in 0.25% benlate suspension for 5-8 minutes before planting.

Black rot: The pathogen attacks primarily the above ground parts of plants. The leaves midrib forming "V" shaped area, which is the most characteristics symptom of the disease. The bacterium is transmitted through seed.

Control: Seed treatment with hot water of 50 °C for 30 minutes is found effective to control disease. Spray with copper oxychloride @ 3 g/litre of water at 10 days interval.

Harvesting and yield:

The crops become ready for harvesting after 80-90 days of transplanting. The average yield of 175-240 q/ha can be obtained depending upon the variety (Table 1).

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BROCCOLI

Package of Practices for Cultivation in Meghalaya



Technology Mission (MM-I)



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MEGHALAYA

Sprouting broccoli (*Brassica oleracea* L. var *Italica*) belongs to family *Brassicaceae*, is an important cole crop after cabbage and cauliflower. It contains vitamins A, 130 and 22 times higher than cauliflower and cabbage, respectively, and also thiamine, riboflavin, niacin, vitamin C and minerals (Ca, P, K, and Fe). Broccoli is the richest source of protein among cole crops. It has a very powerful anti cancerous compound-glycosinolate, which provides protection against bowl cancer. More over, broccoli is the only vegetable, which is rich in selenium which acts as an antioxidant. From the last few years it is becoming popular among the farmers of NEH region due to its high nutritive value and export potential.

Varieties:

Solan Green Head and KTS-1 are the open pollinated varieties, which have good yield potential. Among the hybrids, Fiesta, Lucky and Pushpa are high yielding. These varieties/hybrids were found suitable for cultivation under Meghalaya condition.

Table 1. Yield potential of different varieties/hybrids.

Varieties/ hybrids	Days to head maturity	Marketable head weight (g)	Yield q/ha
Solan Green Head	80	350	175
KTS	80	380	195
Lucky	85	410	225
Fiesta	78	425	240
Pushpa	82	375	180

Climate:

It is a cool season crop but sensitive to very low and high temperature. In warm weather, bud clusters become loose quickly. Average temperature from 10-25 °C is ideal to get a good crop.

Soil:

Sandy and silt loam soils are most suited for broccoli. It grows well in well-drained upland soil. It does well at a soil pH of 5.8 to 7.2.

Nursery raising:

In some parts of the NEH region, where the temperature is mild during August-September, the seeds are sown in 1st week of August while in other parts; the seeds are sown in 1st fortnight of September. The nursery bed should be prepared by addition of well rotten FYM @ 4 kg/m². About 500 g seeds are sufficient for transplanting in one-hectare area. Seed should be treated with captan or thiram @ 2.5g/kg of seeds before sowing. The seeds should be sown at a spacing of 8-10 cm between lines, 2-3 cm between seeds and 1-1.5 cm deep. After sowing, light irrigation should be given by water can. The nursery should be protected from heavy rains. Weeding and intercultural operations in nursery beds should be done at regular interval to get healthy seedlings.

Nutritional requirement:

About 15-20 tonnes FYM should be added one month before transplanting in the field. 120 kg nitrogen, 80 kg phosphorus and 60 Kg potash and 10 kg boron should also be applied for one hectare. Half amount of nitrogen and full dose of

phosphorus, potash and boron should be given at the time of transplanting and the remaining dose of nitrogen in two splits *i.e.* 30 and 45 days after transplanting as top dressing.

Transplanting:

The seedlings become ready for transplanting after 4-6 weeks of sowing. Transplanting should be done in the afternoon at a distance of 45x 30 cm.

Irrigation:

Frequent but light irrigation is essential through out the crop growth. Proper moisture can be maintained during winter by providing irrigation at 10 days interval.

Intercultural operation:

The intercultural operations would be done regularly to keep the crop free from weeds. Shallow hoeing should be done in order to remove weeds and avoid injury to the roots after 20-25 days of transplanting. Side dressing of remaining nitrogenous fertilizers should also be done for healthy growth of crop.

Plant protection:

Cutworm:

The caterpillars are 3-4 cm long, grey or brown to almost black with various markings. The caterpillars hide during day time and feed at night. It causes damage by biting the foliage and by cutting down the young seedlings just above the ground level.