

CAULIFLOWER

(*Brassica oleracea* L. var. *botrytis*)

Cauliflower is a cool season vegetable grown for its white and tender curd. The curd contains a good amount of vitamin B and protein. It is also a rich source of minerals mainly phosphorus and sodium.



Varieties

The different varieties suitable for the region are as follows:

Season	Var./ hybrids	Days to 50 % maturity	Yield q/ha
Early	Himkaran(Hybrid)	45	247
	Pusa Early Synthetic (OP)	68	230
Mid	PusaSharad(OP)	72	320
	No.497 (Hybrid)	70	240
Late	Himani(Hybrid)	90	440
	Mahima (Hybrid)	92	310
	Poosi (OP)	95	250
	Meghalaya Local	150	420

Soil and Climate

Cauliflower can be grown in a wide variety of soils, but sandy and clay loam soils are most suited. It prefers well-drained upland soil for proper growth. The optimum pH range is 6.0 -7.0.

It is a cool season crop and is sensitive to very low and high temperatures. The optimum temperature range for curd initiation and development is 20-25 °C for early season, 15-20 °C for mid season and 8-12 °C for late season.

Field preparation

For preparation of field, soil is ploughed 2-3 times with power tiller or with spade. Planking is done during the last ploughing to make friable soil bed for transplanting. Raised beds of 1 m width, 4-5 m length and 30 cm above the soil are prepared.

Seed rate

Early season: **600g/ha** Mid and Late season: **400-500 g/ha**

Sowing time

Early season: June-July, Mid season: August-September, Late season: October November.

Nursery Raising

The nursery bed should be thoroughly prepared by adding well rotten FYM or compost @ 4kg/m². Before sowing, the seeds should be treated with Captan or Thiram @ 2.5g/kg seeds to get rid of fungal diseases. The seeds are sown at a spacing of 2-3 cm between seeds and 8-10 cm between lines. The depth of sowing is 1-1.5cm. After sowing, the seeds are covered with a mixture of fine soil and sieved FYM. After this, a light irrigation is provided with a water can. The nursery bed should be kept weed free.

Transplanting and spacing

Four to six weeks old healthy seedlings having 4-6 leaves should be transplanted. Before transplanting, hardening of seedlings should be done by withholding irrigation for 4-6 days prior to transplanting. Seedlings should be watered a day prior to uprooting and transplanting to avoid damage to the root system.

Spacing: Early season: 4S x 30 cm, Mid season: 60 x 4S cm, Late season: 60 x 60 cm

Manures and fertilizers

About 20 tones FYM per hectare should be added in the soil one month before transplanting in the soil. Besides FYM, 120 kg nitrogen, 60 kg phosphorous, 60 kg potash should be applied for one hectare. Half dose of nitrogen and full dose of phosphorous and potash should be given at the time of transplanting and remaining amount of nitrogen should be given in two split doses i.e. 30 and 45 days after transplanting as top dressing.

Irrigation

First light irrigation should be given just after transplanting; further irrigations are to be given depending on weather and soil type. However, regular maintenance of soil moisture is essential during growth and curd development.

Intercultural Operations

Very shallow hoeing should be done to remove weeds and to avoid injury to the root system. Two to three weeding are sufficient to control the weeds followed by earthing up.

Disorders

Browning: It is caused due to Boron deficiency. The symptoms first appear as water soaked lesions in the stem, leaf and on the surface of the curd which later become rusty.

Brown in color. To control, soil application of Borax @ 10-15 kg/ha is recommended. In case of acute deficiency, spraying of Borax solution should be done @ 0.25% to 0.5%.

Whiptail: This disorder is caused due to the deficiency of Molybdenum. Young cauliflower plants become chlorotic and may turn white, particularly along the leaf margins, leaves also become cupped and wither. Whiptail develops with high nitrate supply and low molybdenum. So in acidic soil, heavy application of nitrogenous fertilizers should be avoided. Application of 1.5 kg Sodium or Ammonium molybdate per hectare is recommended mixed with fertilizers or irrigation water when the plants are set in the field. Spraying the crop with 0.1 % Ammonium molybdate can also be done.

Buttoning: This disorder of cauliflower is marked by the development of small curd or button when the plants are small. The causes of buttoning are over-aged seedlings, poor nitrogen supply and wrong selection of cultivars (when variety from early group is transplanted late in the season). Maintenance of adequate supply of nutrients and good plant population checks the disorder.

Riceyness: This disorder is marked by velvety or granular appearance on the surface of the curd. It may occur due to higher or lower temperature than the optimum required for a particular variety, temperature fluctuation at the time of curd development, poor seed stock. Selection of proper variety and transplanting at right time controls this malady. Good seed stock and favourable weather conditions tend to prevent this disorder.

Harvesting and Yield

Harvesting should be done as soon as the curds attain right maturity and compactness. If the harvesting is delayed the curds become over mature, deteriorate in quality and turn into loose, leafy, ricy or fuzzy types.

Average yield of early season varieties is 150 - 200 q/ha, mid season 250 - 300 q/ha and late season varieties have an average yield of 350 - 400q/ha.