

# **SPICE CROPS**

## ***FENNEL (SAUNF)***

**PF-35:** This variety was developed by Gujarat Agricultural University. It is moderately spreading, comparatively tall and big um-belled variety. Its seed size is medium and colour is green. The seed is hairless having fine ridges.

**Gujarat Fennel-1:** This variety was also released by Gujarat Agricultural University in 1985. It has a spreading and bushy habit of growth. Umbels are bigger in size and seeds are green in colour. It yields about 20q/ha.

### **Cultural Operations**

**Seed Rate:** Fennel crop can be grown either direct sown or transplanted. In direct sown crop 10-15 kg seed/ha is required while in case of transplanted 4-6 kg/ha is sufficient for raising seedlings.

**Sowing Time:** The optimum time of direct seeding is first fort-night of October. In case of transplanted crop, nursery should be raised in September.

**Spacing:** 30-40 cm between rows and 20 cm between plants.

**Manuring:** About 20 Tons FYM, 50 kg N and 25 kg P<sub>2</sub>O<sub>5</sub> per hectare. The half of nitrogen and all P<sub>2</sub>O<sub>5</sub> is to be applied before sowing and rest of N as top dressing at the time of flowering.

**Chemical Weed Control:** Weedicide pendimethalin @1.0 kg/ha (Stomp 30% 3.3 litres) as pre-emergence within 8 days of sowing in 600-700 litres of water. It should be supplemented with one hand weeding at 60 days after sowing. Proper soil moisture at the time of application of herbicide is essential.

**Yield:** 15-20q/ha.

# ***CORIANDER (DHANIA)***

## **Recommended Varieties**

**Narnaul Selection:** This variety was developed by HAU, Hisar. The plant of this variety has more number of branches. The seeds are bolder in size as compared to the local type and greenish brown in colour. Two cuttings can be taken without reduction in yield. It yields about 15-20 q/ha.

**Pant Haritima:** This variety has been developed by Pant Nagar. The plant has more vegetative growth. The seeds are small in size and greenish brown in colour. Two cuttings can be taken without reduction in yield. It yields about 15-20 q seed/ha.

## **Cultural Operations**

**Seed Rate:** 8-10 kg per hectare (for Spice Crop)

10-15 kg per hectare (for Green Leaves)

**Sowing Time:** October to December for green leaves and first fortnight of November for seed crop. Seed halves should be sown rather than whole seed.

**Spacing:** Row to row 20-30 cm and plant to plant 20 cm.

**Manuring:** About 20 tons FYM, 60kg N and 25 kg P<sub>2</sub>O<sub>5</sub> per hectare. The half of nitrogen and phosphorous is to be applied before sowing and rest of N as top dressing after 6-8 weeks of seeding.

**Weed Control:** Any one of the following recommendations can be used for chemical weed control in Coriander.

- ✓ Basalin @ 2.5-3 litres per hectare as pre sowing.
- ✓ Stomp @4-5 litres per hectare.
- ✓ Combination of Basalin @1.25-1.5 l + stomp 2.0-2.5 litres per hectare.
- ✓ Combination of stomp 2.0-2.5 l + tribunal 0.7- 1.0 kg per hectare.

## **Note:**

- I. Basalin should be used as pre- sowing incorporated in the soil while other weedicides are to be used as pre-emergence.
- II. Proper soil moisture at the time of application of weedicide is essential.

# ***FENUGREEK (METHI)***

## **Recommended Varieties**

**Pusa Early Bunching:** It is a desi methi and has been developed by IARI, New Delhi. It grows faster and plants are straight. Flowers axillary, white and pods are long, flat and green. It is high yielding and seeds are of big size. Yield depends upon the number of cuttings.

**Kasuri:** It is high yielding variety of kasuri methi, rosette habit trifoliate leaves, late flowering, flowers yellow borne in dense terminal racemes. Pods sickle shaped, flat, small and green. Many cuttings can be done due to late flowering.

## **Cultural Operations**

**Seed Rate:** Desi – 30 -25 kg per hectare.

Kasuri– 10 kg per hectare.

**Sowing Time:** Mid September to November for green leaves and for the seed crop, first week of October is the best time for sowing.

**Spacing:** 20-25cm between rows and 10cm between plants.

**Manuring:** About 20 tons FYM, 60 kg N and 50 kg P<sub>2</sub> O<sub>5</sub> per hectare.

**Chemical Weed Control:** Weedicide Methabenzthiazuron @ 1.0% kg/ha or Pendimethalin @ 1.0 kg/ha (Stomp 30% 3.3 l) (Tribunal 70% 1.4kg/ha) as pre-emergence should be applied before the germination of crop. Proper soil moisture at the time of herbicide application is essential for weed control.

**Yield:** It depends upon variety and cuttings. The average yield of methi is as follows:

**Desi:** 70-80 q/ha

**Kasuri:** 50-60 q/ha

**Seed Yield:** Desi; 15-20 q/ha, Kasuri: 6-8 q/ha

# **CUMIN (JEERA)**

## **Recommended Varieties**

**RS-1:** This variety was developed by Rajasthan. The plant is green in colour and early maturing. It has pink flowers. The grains are bold, shining and brown in colour. The crop matures in 100-110 days. It yields about 5-7 q/ha.

**Rz-19:** This variety has been recently released in Rajasthan Agril University, Jobner Campus. The variety has green coloured plants. The branching is comparatively more and hence there is an increase in number of umbels per plant. It has dark pink flowers. The grains are bold, attractive and deep brown in colour. The crop matures in about 125 days. It has greater resistance against disease like *Fusarium* wilt and *Alternaria* blight as compared to RS-1 and other local varieties. It yields about 6-8 quintals per hectare.

## **Cultural Operations**

**Seed Rate:** 8-10 kg per hectare for line sowing and 10-15 kg/ha for broadcasting.

**Seed Treatment:** The seed should be treated with Bavistin or Benlate @ 2gm per kg of seed before sowing.

**Sowing Time:** The optimum time of direct seeding is 15<sup>th</sup> November to 15<sup>th</sup> December.

**Spacing:** 20-30 cm between rows and 10 cm between plants. The sowing can be done by broadcasting followed by raking so that the seed may be covered uniformly with soil. The seed should not be covered more than 2 cm deep.

**Manuring :** About 15-20 tons FYM, 30 kg N and 20 kg P<sub>2</sub>O<sub>5</sub> per hectare. The half of nitrogen and all P<sub>2</sub>O<sub>5</sub> are to be applied before sowing and rest of N as top dressing after four weeks of seeding.

**Weed Control :** Any of the following weedicides can be applied for chemical weed control in cumin.

1. Fluchloralin @ 1.0 kg/ha (Basalin 45% 2.2 litres ) as pre-sowing incorporated in the soil.
2. Methabenzthiazuron @ 1.0 kg/ha (Tribunil 70% 1.25 kg/ha) as pre-emergence within 8 days of sowing in 600-700 litres of water. Proper soil moisture at the time of application of herbicide is essential.

**Irrigation:** Crop is irrigated 2 to 4 times and no irrigation is given after flowering.

**Disease Control**

Disease, casual agent and symptoms	Control measures
<b>Alternaria blight</b> ( <i>Alternaria burnsii</i> )  Symptoms are similar as described in root vegetables	Similar as in root vegetables.

# ***TURMERIC (HALDI)***

## **Recommended Variety**

Local

## **Cultural Operations**

**Sowing Time:** May to July (Before the onset of monsoon).

**Speed Rate:** 15-20 q/ha (rhizome).

**Spacing:** Row to row 40-50 cm and plant to plant 15-20 cm.

**Manures/Fertilizers:** Add 25 tons FYM, 100 kg N, 50 kg P<sub>2</sub>O<sub>5</sub> and 50 kg K<sub>2</sub>O per hectare. Apply organic manure at the time of first ploughing about 3 weeks before planting/sowing. The 1/3 of nitrogen and full dose of phosphorous and potash is to be applied at time of planting and rest of nitrogen as top-dressing in two installments.

**Yield:** 150-200 q/ha.

## **Disease Control**

Disease, casual agent and symptoms	Control measures
1. <b>Leaf blotch</b> ( <i>Taphrina maculans</i> ): Blotches occur on leaves which cover the large area, later leading to withering.	Spray with Blitox-50 or Dithane M-45 @ 0.2% at 10-15 days interval.
2. <b>Leaf spot</b> ( <i>Colletotrichum capsici</i> ): Oblong brown spots with black concentric rings formed on leaves, withering of leaves takes place later on.	As in case of leaf blotch disease.

# ***GINGER (ADRAKH)***

## **Recommended Variety**

Local

## **Cultural Operations**

**Sowing Time:** April to June.

**Speed Rate:** 10-15 q/ha (rhizomes).

**Spacing:** Row to row 45 cm and plant to plant 30 cm.

**Manures/Fertilizers:** Add 25 tons FYM before sowing, 100-120 kg N and 50 kg each  $P_2O_5$  and  $K_2O$  per hectare is sufficient. Apply organic manure at the time of first ploughing about 3 weeks before planting/sowing. The 1/3 of nitrogen and full dose of  $P_2O_5$  and  $K_2O$  before planting and remaining nitrogen may be added as top-dressing at the time of earthing up in two installments.

**Yield:** 150-200 q/ha.