

LENTIL

Botanical Name: *Lens esculenta*

Family: Leguminosae

Origin: India, Mediterranean region

Economic Importance:

- Lentil is one of the important nutritious old *rabi* pulse crop.
- It is mostly eaten as a Dal.
- Whole Pulse grain is used to preparation of some dishes.
- It is ground into flour to make variety at dishes.
- It also used in preparation of snacks & sweets.
- The dry leaves and stems, empty pods and broken bits all are used as cattle feed.
- Green pods also used as vegetable.
- Crop is also grown as cover crop to check soil erosion.
- It also fixes atmospheric nitrogen.
- A lentil grain contains about 11 per cent water 25 per cent protein & 60 per cent carbohydrates and also rich in calcium, iron & niacin.

Area and Distribution:

Important Lentil growing countries in the world are India, Turkey, Syria, Pakistan, Spain & Bangladesh. India occupies rank 1st in respect of both area and production in world. In case of productivity Australia rank 1st average yield per ha is about 2100 kg. The major lentil growing areas are situated in M.P., U.P., Bihar and W.B. Only U.P. & M.P. contributes about 78% Area & Production in India. Rajasthan rank 1st in Productivity average yield is about 1231 kg/ha.

Climatic requirement:

Lentil requires a cold climate so due that it is grown in rabi season. It is very hardy crop, it can tolerate to frost & severe cold climate. It requires cold weather during early stage & warm at the time of maturity. Optimum temperature requires is 18-30⁰C for obtaining good growth and yield of crop.

Soil requirement:

Lentil can be grown in varieties of soil from light loam to black cotton soils. Well drained loam soils with neutral in reaction are best for lentil. It can withstand a moderate alkali condition but strictly avoid acidic soils.

Field Preparation:

The soil should be made friable and weed free so that seeding could be done at uniform depth. One ploughing with MB plough followed by 2-3 harrowing and

planking is necessary to prepare well pulverized and leveled seed bed. Irrigation layout should be prepared according to irrigation facility.

Seed & sowing:

1. Seed treatment:

Fungicidal seed treatment: seeds should be treated with Thiram or Captain @ 2.5 to 3 gm./kg of seeds.

Bio-fertiliser seed treatment: Seeds should be treated with Rhizobium and PSB @ 250 gm./10 kg of seeds.

2. Time of sowing: Middle of October is best time but it can be extended up to 15th November. Delay in sowing reduction in yield & quality.

3. Method of sowing: Line sowing is best as compared to broadcast method. Sowing with seed cum fertilizer seed Drill. Sowing is also done by putting seeds behind country plough.

4. Seed-rate & Spacing: For Timely sowing 30 to 35 kg/ha and maintain 30 cm spacing in between two rows. For Late sowing 50 to 60 kg/ha and maintain 20 to 25 cm spacing in between two rows.

5. Depth: 3 to 4 cm.

Manures & Fertilizers:

Generally lentil is grown by farmers without addition of manures and fertilizers. But many researchers have shown that if use of manures and fertilizers you can obtained higher yield. So, Apply 5-10 tons of FYM or Compost/ha at the time of land preparation, Lentil is a being leguminous crop fulfills the major part of its nitrogen requirement through process of symbiotic nitrogen fixation , so apply only 25-30 kg at N as a starter dose before formation of root nodules and 50-60 kg P₂O₅ per ha.

Water management:

Lentil crop is mostly grown in un-irrigated areas because it can tolerate drought condition in some extent. By providing one or two irrigations particularly when winter rains are not properly distributed, higher yields can be obtained. Apply first irrigation at 45 days of planting & second if needed at pod filling stage.

Weed control:

Lentil being slow in growth in early stages suffers adversely from competition with weeds. The period from 30 to 60 days after sowing is most crucial for competition with weeds. The field should be kept free from weeds up to 40-50 days after sowing. Two manual hand weedings, one at 25-30 days another at 45-50 DAS should be done. Weedicides like Fluchloralin (Basalin) can be used safely @ 0.75 kg at in 800-1000 lit of water as pre-planting spray is quite effective or Metribuzine @ 1.0 to 1.5 kg a. i. per ha. in 800-1000 lit of water as pre emergence spray.

Pest & Diseases:

Seedling mortality, Wilt, Rust, Powdery mildew, and downy mildew are the important diseases. While, Not many insect pests damage to lentil crop. However, polyphagous insects like hairy caterpillar, semi-looper do some damage.

Harvesting & threshing:

Lentil should be harvested when the pods are ripe but the plants have not become dead ripe. The plants should not be allowed to become dead ripe otherwise a large quantity of produce may be lost due to shattering. As such it would be an advantage to harvest in the early morning when dew is present. The produce should be allowed to dry completely on the threshing floor before threshing. Threshing is done either by trampling under the feet of bullocks. Clean the seed and dry it in the sun to bring down to 12 per cent for safe storage.

Yield:

By adopting the above mentioned improved technology, the yield of Lentil obtained **20-25 quintals** of grains per hectare.

Varieties:

Shivalik, Makika, Pant L-4, Sapana, Priya, Narendra lentil-1, IPL-81, VL Lentil-4, VL Lentil-103, Pant L-406, Pant L-234, Pant L 639, Pusa 6, BR 25, BR-36