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SCIENTIFIC CULTIVATION OF PEA

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Introduction

The pea (*Pisum sativum)*, often known as garden pea, is a herbaceous annual plant in the Fabaceae family that is practically grown globally for its tasty seeds. Fresh, canned, or frozen peas are all readily available, and their dried forms are frequently used in soups. The edible pods of some kinds, such as sugar peas and snow peas, are consumed raw or cooked like green beans and are commonly used in East Asian cuisines. Its seeds are an excellent source of both protein and dietary fibre, and the plants are not too difficult to cultivate. Peas is highly favoured crop. Both its green-colored pods and dry seeds are highly valued for use in food as vegetables and pulses, respectively.

Appropriate varieties/Hybrids

- ✓ Early smooth seeds: ,Asauji, Boniya, Lucknow Alaska and Meteor.
- ✓ Early wrinkled seeds: Arkel, Early Badger, Early December, Hisar Harit, and Jawahar Matar 4
- ✓ Smooth seeded, mid- to late-maturing: Rachna
- ✓ Mid- to late maturing wrinkled seeds: Alderman, Bonneville, Jawahar Matar-1, and Jawahar Matar - 2
- ✓ Medium-tall variety: Bonneville
- ✓ Dwarf variety: Arkel
- ✓ Green-seeded cultivars: Arkel, Bonnevile, Jawahar Matar 1, Jawahar Matar 2.
- ✓ Double podded varieties: Bonnevile
- ✓ Types of edible podded: Mithi Phali and Aparna.
- ✓ For Canning purpose Lincoln and Early Badger .
- ✓ Dehydration variety Arkel P-87.
- ✓ freezing varieties are Taichung – 12 and Alderman.

Climate and soil

Light soils are ideal for planting pea. Because frequent irrigation tends to boost vegetative growth at the expense of pod production, the soil should retain enough moisture to support the crop to maturity with minimal irrigation. Peas do not do well in extremely acidic soil. The pH of the soil shouldn't fall below 5. The ideal pH range is 6.0 to 7.5. The ideal temperature range is 18 to 22°C, while the seeds can germinate at low temperature of 5°C. The quality of canning

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peas is affected by temperatures closer to 30°C. Peas are extremely drought-sensitive.

Soil preparation

The soil can be sufficiently broken up with two or three ploughings or harrowings, followed by planking, which promotes seed germination and subsequent plant growth.

Seed rate

100–120 kg/ha for early cultivars, 80–90 kg/ha for mid- and late-season varieties.

Sowing time

As a winter crop in the plains, pea is sown from mid-October to mid-November. It is sown on the highlands in May for an October harvest. Sowing takes place in temperate climates from October through March.

Method of Sowing

The main field is directly seeded. The seeds are treat with a bacterium culture (*Rhizobium leguminosarum*) prior to seeding. The seeds are carefully mixed with the gur solution or jaggery to ensure that the seeds are well soaked. After that, seeds are allowed to dry in the shade before being sown. *Phosphobacterium* soil inoculation is just as effective—and occasionally even more so—than Rhizobium seed inoculation. Row-to-row spacing is 30 to 45 cm, and plant-to-plant spacing is 5 to 10 cm. The seeds are spread at a depth of 2-3 cm.

Nutrient management

Leguminous crops like peas require not much in the manner of manures and fertilizers. Peas typically require about 15-20 tonne FYM, 50 kg N, 60–70 kg P, and 60–70 kg K per acre to meet its nutritional needs. The FYM is given when the field is getting ready, and the all three fertilizers can be mixed and applied as a basal application when seeds are sown.

Irrigation managrment

It is important to provide irrigation during the stages of germination, flowering, fruit set, and growth since these processes all require a certain amount of moisture.

Measures to Plant Protection

Powdery mildew: On the leaves and pods, white powdery spots develop. The transmission of the disease is favoured by dry conditions. Hot water should be used to clean seeds. Sulphur or Sulfex (2.5 kg/ha) should be dusted, or Karathane or Dinocap (0.2%) should be apply three times at a 10-day interval. It is possible to develop resistant types like, Pant P-8, PMR-3 Sugar Giant, etc. End of November and December should not be used for sowing.

Downy mildew: On the underside of the leaves, downy mildew appears as spots of grey-brown mould. Only extremely wet weather conditions result in a high incidence of the disease. The affected plants need to be pulled out. Before planting, seeds should be soaked in hot water. Spraying should be done

with 0.2% concentrations of dithane Z-78 or M-45.

Fusarium wilt: Affected plants exhibit yellowing, leaf curling downward, incomplete pod filling. In extreme circumstances, the stem shrivels and the entire plant wilts. Crop rotation should last for a long time. Benlate (2.5glkg of) should be used to treat seeds). Use resistant cultivars, such as Alaska and Resistant Surprise.

Pea aphids: These pests feed on the sap of immature plants. At the time of planting, 30 kg/ha of furadon should be applied along with the seeds. Malathion 0.1% or Rogor 0.03 % should be sprayed. Plant aphid-tolerant or resistant types like Feltham and Meteor.

Pea thrips: They eat the blooms, stalks, and pods of pea plants. The same prevention methods apply to aphids.

Harvesting and Yield

Well-filled pods that have turned light green are harvested for the fresh market. Picking occurs every 7 to 10 days. Early crop yields typically range from 25 to 40 q/ha, mid-season crops from 65 to 85 q/ha, and late-season cultivars from 85 to 115 q/ha.

References

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