PEA
(Pisum sativum)

Pea is very popular crop. Its green pods as well as dry seeds are in great demand for cooking as vegetable and as pulse, respectively. It is highly nutritive containing high percentage of proteins, carbohydrates, vitamins A &K and calcium and phosphorus.

Suitable varieties/Hybrids

Early smooth seeded: Alaska, Asauji, Lucknow Boniya, Meteor.
Early wrinkled seeded: Arkel, Early Badger, Early December, Hisar Harit, Jawahar Matar 4.
Mid to late maturing smooth seeded: Rachna
Mid to late maturing wrinkled seeded: Alderman, Bonneville, Jawahar Matar-1, Jawahar Matar - 2.
Medium tall varieties: Bonneville.
Dwarf varieties: Arkel
Green seeded varieties; Arkel, Bonnevile, Jawahar Matar -1, Jawahar Marar= Z
Double podded varieties: Bonnevile.
Edible podded varieties: Aparna, Mithi Phali
Canning varieties: Early Badger, Lincoln.
Varieties for dehydration: Arkel, P - 87.
Varieties for freezing: Alderman, Taichung - 12.

Soil and climate

Pea should be sown in light soils. Soil should retain sufficient moisture to carry the crop to maturity with minimum irrigation, as frequent irrigation tends to increase vegetative growth at the expense of pod formation. Pea does not thrive well on highly acidic soil. The soil pH should not go below 5. The favorable pH is 6.0 - 7.5.

The seeds can germinate at a minimum temperature of 5°C and the optimum temperature range is 18 - 22°C. Temperature nearer to 30°C affects the quality of canning peas. Peas are very sensitive to drought.

Soil preparation

Two to three ploughings or harrowing followed by planking are sufficient to make soil pulverized that facilitates seed germination and further plant growth.

Seed rate

Early varieties: 100 - 120 kg/ha, Mid and Late season: 80 - 90 kg/ha.

Sowing time

In the plains, pea is sown during mid October to mid November as winter crop. In the hills, it is sown in May as an autumn crop. In temperate regions, sowing is done during October to March.

Method of Sowing

Seeds are directly sown in the main field. Before sowing, the seeds are treated with bacterium culture (*Rhizobium leguminosarum*). Jaggery or gur solution is mixed with the seeds thoroughly so that seeds are soaked well. Thereafter, seeds are allowed to dry in shade prior to sowing. Soil inoculation with phosphobacterium is equally effective and sometimes better than seed inoculation with Rhizobium.

The seeds are sown at a depth of 2-3 cm, with a row-to-row distance of 30-45 cm and plant-to-plant distance of 5-10 cm.

Manures and fertilizers

Being a leguminous crop, pea has low requirement of manures and fertilizers. About 15-20 tonne FYM, 50 kg N, 60-70 kg P and 60-70 kg K per hectare usually fulfill the nutritional requirement of pea crop. The FYM is applied at the time of field preparation and all the three fertilizers are combined and can be applied as basal at the time of sowing.

Irrigation

Sufficient moisture is essential during germination, flowering, fruit set and growth; hence care should be taken to provide irrigation during these periods.

Plant protection measures

Powdery mildew: White powdery patches form on leaves and pods. Dry weather favours the spread of the disease. Seeds should be treated with hot water. Dusting should be done with sulphur or Sulfex (2.5 kg/ha), or Karathane or Dinocap (0.2%) should be sprayed thrice at 10 days interval. Resistant varieties such as Sugar Giant, Pant P-8, PMR-3 etc can be grown. Sowing should be avoided in end November and December.

Downy mildew: The spots of grey brown mould appear on the under surface of the leaves. Incidence of the disease is only severe in very wet weather conditions. The affected plants should be uprooted. Seeds should be treated with hot water before sowing. Dithane Z-78 or Dithane M-45 at 0.2% concentration should be sprayed.

Fusarium wilt: Affected plants show yellowing and downward curling of leaves and incomplete filling of pods. In severe cases, the whole plants wilt and the stem gets shriveled. Long crop rotation should be followed. Seeds should be treated with Benlate (2.5glkg of seeds). Resistant varieties like Alaska, Resistant Surprise should be used.

Pea aphids: They suck sap from younger parts of the plants. Furadon should be applied 30 kg/ha with seeds at the time of planting. Spraying should be done with Rogor 0.03% or Malathion 0.1 %. Tolerant /resistant varieties to aphids like Feltham and Meteor should be planted.

Pea thrips: They feed on the flowers, stems and pods. Control measures are same as aphids.

Harvesting and Yield

For fresh market, well filled pods when turn light green are harvested. Picking is done at 7-10 days interval.

The average yield of early crop is 25-40 q/ha, mid season crop 65-85 q/ha and late season cultivars 85-115 q/ha.