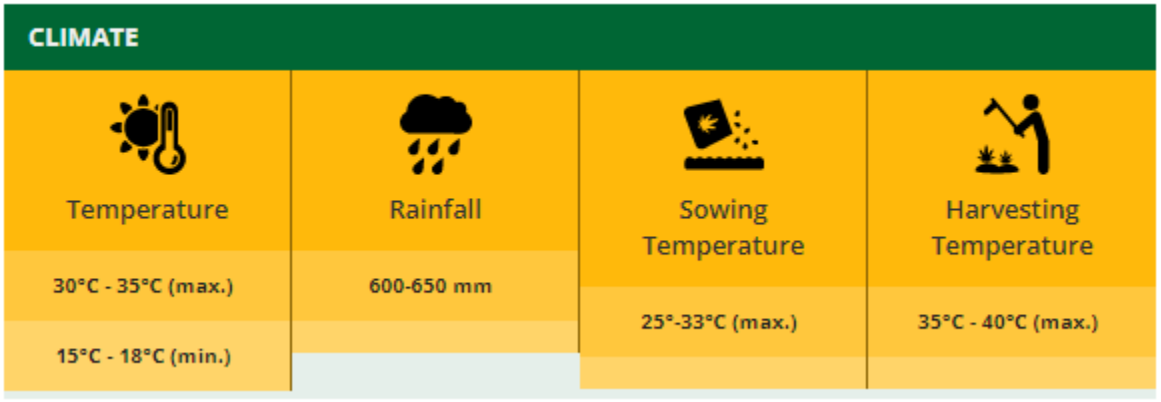
PEGION PEAS FARMING

GENERAL INFORMATION

It is a popular pulses crop and it is rich source of Protein. It is cultivated in tropical and semitropical regions. It is important legumes crop of rain fed and semi-arid tropics and it can grow as single crop or intermixed with cereals. It enriches soil through symbiotic nitrogen fixation. Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh are major Pigeon pea producing states in India.



SOIL

It grows on variety of soil. It gives best result on fertile and well drained loamy soils. The saline-alkaline or waterlogged soils are unfit for its cultivation. It can grow successfully on soils having pH ranges from 6.5 to 7.5.

POPULAR VARIETIES WITH THEIR YIELD

AL-15: It is a short duration variety, matures in 135 days. Pods are borne in clusters. It gives average yield of 5.5 qtl/acre.

AL 201: It is early maturity variety. It matures in about 140 days. Main stem is stronger than side branches. Each pod contains 3-5 yellowish brown and medium size seeds. It gives average yield of 6.2 qtl/acre.

PPH 4: First Arhar hybrid in Punjab. It matures in 145 days. Plants are tall and about 2.5 to 3 meter tall. Each pod contains 5 yellowish brown seeds of medium size. It gives average yield of 7.2-8 qtl/acre.

PAU 881 (2007): Its an early maturing variety with an indeterminate growth habit. It develops in 132 days and leaves the field in plenty of time to sow the next wheat crop. Its plants reach a height of about

2 metres. Pods are abundant, with each pod containing about 3-5 yellow brown, medium-sized seeds. Its average grain yield per acre is around 5.1 quintals.

AL 882 (2018): It has a semi-determinate growth habit and is a short statured, early maturing variety. It develops in about 132 days and leaves the field in plenty of time for the next wheat crop to be sown. Its plants are compact and grow to be between 1.6 and 1.8 metres tall. Pods are produced in various and scattered clusters near the top of the plant. Podding is abundant, with each pod containing 3-5 medium-sized yellowish brown seeds. The average grain yield per acre is around 5.4 quintals.

Other state varieties:

IPA 206: It is a long duration variety resistant to Wilt, Medium seed size seeds with oval shape and purple coloured seed coat. Its average yield is 10q/acre. It is recommended for UP area.

IPA 203: It shows resistance to Sterility Mosaic disease (SMD), Fusarium wilt, and phytophthora blight, large seed size with high yielding (7-8q/acre) nature. It is recommended for NPEZ (North East Plain Zone).

UPAS-120: This variety matures earlier (120-125 days). These are medium-sized, semi-spreading plants. The seeds are small and light brown. The average yield per acre is 6-8 quintals. It is vulnerable to the sterility mosaic disease.

ICPL 151 (Jagriti): Ready to harvest in 120-130 days. It gives average yield of 4 to 5 qtl/acre.

Pusa Ageti: Dwarf bold seeded variety, ready to harvest in 150 to 160 days. It gives average yield of 5 qtl /acre.

Pusa 84: Medium tall, semi spreading variety, ready to harvest in 140 to 150 days.

IPH 09-5 (Hybrid)

LAND PREPARATION

Prepared land by taking one deep ploughing followed by two or three times harrowing. Planking should be followed after each ploughing. It cannot withstand in water logging conditions, prepared field in such a way that water stagnation should not take place. Crop Rotation: Follow crop rotation of Arhar with Wheat or Barley or Sufed Senji or Sugarcane.

SOWING

Time of sowing

Timely sowing of crop is important as delay in sowing leads to yield loss. Sow crop in second fortnight of May for obtaining high grain yield

Spacing

For sowing use spacing of 50 cm between the rows while 25 cm between the plant.

Sowing Depth

Seed are sown with help of seed drill at depth of about 7-10 cm.

Method of sowing

Seeds can be sown by broadcasting method but line sowing with help of seed drill is more efficient way of sowing for good yield.

SEED

Seed rate

For good yield use seed rate of 6 kg per acre.

Seed Treatment

Select healthy seeds and bold seeds for sowing. Treat seeds with Carbendazim or Thiram@2gm per Kg of seeds. After chemical treatment, treat seed with Trichoderma viride@4gm/kg of seeds or Pseudomonas Fluorescens@10gm/Kg of seeds

Fungicide name	Quantity (Dosage per kg seed)
Carbendazim	2gm
Thiram	3gm

FERTILIZER

Fertilizer Requirement (kg/acre)

UREA	DAP or SSP	MOP	ZINC

13	35	100	20	-

Nutrient Requirement (kg/acre)

NITROGEN	PHOSPHORUS	POTASH
6	16	12

Apply N:P:K @ 6:16:12kg/acre in form of Urea @ 13kg, DAP @ 35kg or SSP @ 100kg, and MOP @ 20kg/acre. Drill all fertilizer in soil at time of sowing. Apply fertilizer based on soil testing results. Also K should be apply when soil testing show deficiency of it. In DAP is to be used, do not apply Nitrogen fertilizer.

WEED CONTROL

Chemical weed control

Take one hoeing, about three weeks after sowing and another hoeing about six week after sowing. Apply Pendimethalin @ 1Ltr/acre in 150-200ltr of water as pre-emergence herbicide within 2 days after sowing, followed by hand weeding six to seven weeks after sowing.

IRRIGATION

Three to four week after sowing apply first irrigation. Remaining irrigations are depends upon rainfall intensity. Flower initiation and pod setting stages are the most crucial to drought stress. Therefore, irrigation at these stages is essential for good yield. Avoid excessive irrigation as it leads to more vegetative growth and incidence of Phytophthora and alternaria blight. Do not apply irrigation after mid-September; it will affect maturity of crop.

PLANT PROTECTION

- **Pest and their control**

Blister beetles: Also known as flower beetles, they feed on flower and thus reduces pod numbers. Adults are black beetles with bright red coloration on the forewings.

To control it, spraying Deltamethrin 2.8EC @ 200ml or Indoxacarb 14.5SC @ 200ml per acre using 100-125 litres of water per acre. Take spray in evening hours and if necessary repeat the spray after 10 days.

Pod Borer: This is the most serious pest and causes damage up to 75% reduction in yield. It feed on leaves causes skeletonization of leaves also feeds on flower and green pods. On pods they make circular holes and feed on grains.

Install Pheromone traps for Helicoverpa armigera @ 12/ha. In case of low infestation, handpicked grown up larvae. At early stage use HNPV or Neem extract @ 50gm/Litre of water. Use of chemicals are necessary after ETL level. (ETL: 2 early instar larvae/plant or 5-8 eggs/plant).

If incidence is observed, spray crop with Indoxacarb 14.5SC @ 200ml or Spinosad 45SC @ 60ml/100-125litres of water per acre using manually operated knapsack sprayer. Take spray in evening hour.

- **Disease and their control**

Cercospora leaf spot: Greyish brown to dark spots are observed under surface of leaves. In severe condition spots are observed on petioles and stems along with leaf drop.

To control this disease, use disease free seeds and before sowing treat seeds with Captan or Thiram@3gm per kg seed.

Wilt: This disease causes considerable loss in yield. It can affect at the seedling stage as well as in an advanced stage of plant growth. Initially affected plant show dropping of petioles and gives dull green color. Afterwards all leaves turn yellow and become straw colored.

Grow resistant varieties. In primary stage of wilt, to control mix 1 kg of Trichoderma in 200 kg well decomposed cow dung and keep it for 3 days, then apply it in wilt affected area. If wilt is observed in fields, spray 300 ml Propiconazol with 200 Litre of water per acre.

Cankers: It causes due to various fungus. Cankers are developed on stem and twigs. It causes breaking of plants at affected place.
Follow suitable crop rotation. In severe conditions, spray crop with Mancozeb 75WP @ 2gm per Litre of water.

Sterility Mosaic: It is caused due to eriophyid mite. Due to infection of this disease, either no flowering or little flowering is observed. Leaves are of pale color. Plant gives bushy appearance.
Grow resistant variety. For mite control Spray Fenazaquin 10% EC @ 300 ml/acre with 200 Ltr water.

Phytophthora stem blight: If it occurred at seedling stage, young seedling dies after emergence. Brown or black necrotic lesions are observed on stem. On leaflet, circular or irregular lesions are form and whole foliage becomes blighted.

If Infestation Phytophthora blight observed, to control spray with Metalaxyl 8%+Mancozeb 64% @ 2gm/Ltr of water.

HARVESTING

For vegetable purpose harvest plant when leaves and pods are of green color. For grain purpose, when 75-80% pods turn brown and dry, it is right time of harvesting. Delay in harvesting result in damage of seeds. Harvesting can be done manually by cutting stem or by Machine. After harvesting keep bundles of plant upright for drying purpose. Grains are removed from plant by threshing or by traditionally i.e beating plants with sticks.

POST-HARVEST

Grains of harvested crop must be well dried before storage. And take care to avoid the pulse beetle infestation in storage.