

GREEN PEAS PRODUCTION GUIDE

Introduction

Green peas or garden peas (*Pisum sativum*) are one of the ancient cultivated vegetables grown for their succulent nutritious green-pods. It belongs to the family *Fabaceae* of the genus, *Pisum*. Some of the common names include *English peas*, *sweet peas*, *garden peas* and so on. Pea is a quick growing annual herbaceous vine that requires the trellis to support growth. The pods measure about 5.1-7.6 cm long, swollen or compressed, straight or slightly curved, filled with single row of 2-10 light-green colored, smooth edible seeds. Peas are a major vegetable and commercial crop, also suitable as forage, hay, silage and green manure. Peas are cultivated for the fresh green seeds, tender green pods, dried seeds and foliage. Dry seeds are used for food and feed. For food, they are cooked whole, split or ground into flour, and boiled or roasted. Fresh peas are canned or frozen in the immature form.

Climatic Conditions for Peas

Climatic conditions are important when growing green peas; it determines the time of sowing and place in the crop rotation. Peas produce best in cool and moist growing conditions. It is important to bear the following factors in mind when growing peas:

Temperature: Peas grows well between 10 and 30°C with an optimum of 20°C. Temperatures above 30°C will cause poor pollination, early maturity and lower yields.

Rainfall: The first key need of peas is good soil moisture content, particularly at flowering and pod development stages. Peas have to be irrigated when conditions become dry but requires a minimum of 400 to 500 mm rainfall during cropping season (about three months).

Soils: Green peas grow best on a wide range of soils (sandy clay loam, sandy loam) but they prefer a heavy soil. Silty soils that tend to form a crust impede germination (due to lack of oxygen) and emergence. Soil conditions required for good yields are:

- Sufficient top soil depth (40 to 50 cm)
- Uniform soil structure
- Well drained soils

- Optimum pH between 6.1 and 7.4.
- Avoid saline soils and saline water.

Planting of Peas

- Peas are sown directly on well prepared moist soils.
- The seeds should be planted at a depth of 2.5 cm if the soils are deep. In dry, light soils the seeds should be planted about 4 cm deep.
- Peas need warm soil to grow and good spacing for adequate sunlight.
- The seeds should be sown in double rows of 10 x 50 cm. More vigorous crop can be cropped to about 250,000. However, the spacing can be reduced during rainy season, in order to increase air circulation and reduce the risk of rust.
- If staked, this is done between the double rows using twigs or short-staked wires and/or strings.
- Average seed requirements range between 30 – 35 kg/ha.
- It matures within 54 to 70 days after planting, depending on the variety.

Fertilizer application:

Fertilizer application must be done in such a way that the dosage of each nutrient is appropriate to actual conditions in each field.

- Mix crop residues and organic matter in the top 20cm of the soil prior to planting. This destroys current weed growth and provides a granular bed for seeding.
- Green peas develop root nodules that fix nitrogen, but for maximum yield, this does not replace mineral nitrogen inputs
- In soils with low organic matter, up to 20tons/ha of manure or compost should be applied before planting or 200 to 400 10:10:20 NPK.
- Split application can be done at 15 days after planting and the second application should be done 25 days after planting.
- Foliar sprays could be done when necessary after flowering.

Plant Maintenance

- Green peas benefit from weeding due to reduced competition for water, sunlight and nutrients.
- Spray penetration of the bean canopy is improved if weeds are removed. Some weeds also host bean pests such as thrips, spider mite and nematodes and should be removed.
- Two hoeing should be done before flowering.
- Weeding must be shallow to avoid damaging green peas roots.
- Selective chemical weeding (e.g. sowing + 15 days, with haloxyfop-R-methyl ester).
- Green pea flowers are self-pollinating (meaning that they contain male and female parts) on the same plant.
- These flowers are dependent on honeybees, other bees, and insects to transfer the pollen from the anthers to the tip of the stigma (female part) to create a pea pod. Take precautions to minimize pesticide use during flower bloom and encourage bee and insect visitation.

Pest Management

Common foliar pea diseases (and their causal organism) include bacterial blight (*Pseudomonas syringae* pv. *pisi*), ascochyta blight (*Ascochyta pisi*, *Mycosphaerella pinodes* and *Phoma medicaginis* var. *pinodella*), powdery mildew (*Erysiphe pisi*), downy mildew (*Peronospora viciae* f. sp. *pisi*), septoria blight (*Septoria pisi*), and white mold (*Sclerotinia sclerotiorum*). *Rhizoctonia* (*Rhizoctonia solani*) and *Pythium* (*Pythium* spp.) are common seed rot and seedling damping-off diseases.

Common root rots include Fusarium root rot (*Fusarium solani* f. sp. *pisi*), Aphanomyces root rot (*Aphanomyces euteiches*), and Fusarium wilt (*Fusarium oxysporum* f. sp. *pisi*).

Economically important pea viral diseases include bean yellow mosaic (BYMV), pea enation mosaic (PEMV), pea seed borne mosaic virus (PSbMV), red clover vein mosaic virus (RCVMV) and pea streak virus (PeSV).

Disease control:

Cultural control: Proper crop rotation will reduce the incidence of pest and diseases. It must be done in such a way that crops closely related to green pea are not allowed to follow it. Recommended crops in green pea rotation include: cab bage, cassava, cereals (maize, sorghum, millet, fodder grass) and sweet potato, while green peas must not follow African egg plant, cucumber, melon, watermelon, okra and lettuce in a rotation. Rotation cycles should not last less than 3 years. Other control methods include:

- Planting certified disease-free seed,
- Planting peas in well-drained soil,
- Avoiding overhead watering and keeping water from splashing on pea vines and foliage,
- Avoiding plant overcrowding by weeding and properly thinning plants and,
- Cleaning up plant debris and removing any plants that are diseased or dying.

Chemical control: Treat with fungicide during susceptible stages of the plant. Other diseases can be controlled through seed treatment and foliar sprays of chemicals.

Insect pests

- Green peas are infested by a number of insect pests throughout its vegetative and production phases.
- Common insect pests that attack peas included thrips, aphids, leaf beetle, Mexican bean beetle, Vegetable leafminer, leafhopper, spider mite, Corn earworm, European corn borer, Stink bugs and Seed maggot.
- Insect pest problems are few and rarely affect pea quality when proper crop rotation is used in home gardens.
- Healthy pea vines tolerate pest damage, while stressed (often water stressed) vines may attract insect pests.

- Beneficial insects, especially insect predators, should be identified and encourage their presence in the field.

Harvest and Storage

- Green peas are ready for harvest 54 to 70 days after planting, depending on their use, peas should be harvested based on their size.
- Harvest sugar or snow peas for their edible pod just as the seeds start to form.
- For tender and sweet shelling peas, harvest when the pods are well developed but not bulging.
- If picked later, shelling peas become starchy and are not as sweet. Do not allow pods to reach the yellowish stage as they become bitter and yields are reduced.
- Harvest by removing the pods from the pea vines 0.64cm above the fruit. Do not trample the vines any more than necessary while harvesting the crop to keep the plants healthy and producing.
- Frequent picking of green peas is essential for optimum quality and continued production. Delayed harvests results in reduced quality products and less productive plants.
- After the final harvest, be sure to remove and destroy the left over plant debris.
- Alternatively, turning the remaining healthy plant material under the soil during the dry season can help replenish nutrients and contribute to the organic matter content of the soil.

NOTE: Feasibility report on Green Peas production is available on request.

For further information, contact

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