



Pea enation mosaic: pods may be badly malformed. If using susceptible varieties, plant early to avoid aphid infestation.

Powdery mildew: plants are dwarfed if infested early. Affected pods may develop small brown to black necrotic spots. Spring seedlings have less mildew problems than autumn plantings.

Root rot and damping off: infected plants are stunted and lower leaves are yellow. Avoid compacted and wet soils. Avoid using too much nitrogen.

### Harvesting

Garden peas are ready for harvest about 18 to 21 days after flowering. The pods should be picked when the seeds are plump and shell before use. Use garden peas immediately for best quality and flavour (refrigerate if not used immediately).

### References

- Sauer, J.D., 1993. *Historical geography of crop plants: A select roster*. Florida: RC Press, Boca Raton.
- Zohary, D. & Hopf, M., 2000. *Domestication of plants in the Old World: The origin and spread of cultivated plants in West Africa, Europe and the Nile Valley*. New York: Oxford University Press Inc.
- <http://www.hort.purdue.edu/newcrop/cropfactsheets/pea.html>

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### Origin and distribution

Peas were introduced into North America with the first European settlers and are now the world's fourth largest legume crop. Important centres of production include Europe, China, India, North America, New Zealand and Australia.

### Soil and climatic requirements

Edible pod peas require consistently cool growing conditions and do not produce well in hotter areas. Peas are cool season vegetables with optimum growing temperatures between 13° and 18° C. In milder growing areas where peas are grown year round, growth and development are considerably slower during the winter months. Flowering and pod set are sometimes interrupted by frosts, but plants recover and produce normally if frosts are brief. Peas prefer a soil with a pH range of 5,8 to 7,0.



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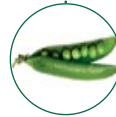
Printed and published by:  
Department of Agriculture, Forestry and Fisheries

Obtainable from:  
Resource Centre  
Directorate: Communication Services  
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On a pH scale of 0 to 14, 7.0 is neutral, with 5.8 tending to the acid side. The best way of achieving maximum yield is to have soil tests every few years to keep the pH level balanced. This ensures that fertilisers will be more efficient and symbiotic nitrogen-fixing bacteria will thrive. Highly acid soil inhibits the bacteria found on pea roots.

A quantity of 2 kg lime should be applied on every 92 m<sup>2</sup> in a pea garden. These lime applications must be repeated once every three to four years for soil pH balance.

Peas tolerate some high temperature during vegetative growth but flowering is initiated when plants are smaller. Pod and seed development are so rapid that quality and yield are reduced by high temperatures. Humidity, frequent rains, early morning dew and extended periods of cloudy weather increase fungal disease pressure. Disease pressure is generally higher during rainy weather months.

## Uses

Peas are eaten fresh, canned and frozen. Some varieties have thin pod membranes and are consumed whole, while others must be shelled. Mature peas are usually dried and split, and often used in soups and purée. Mushy peas are dried peas that have been rehydrated and mashed; they are a popular accompaniment to fish and chips or meat pies in England and Australia. Immature peas have a higher sugar content and are eaten as a green vegetable. In some parts of Asia and Africa, the leaves of the pea plant are cooked and eaten like spinach.

## Human health benefits and concerns

Peas are a high-protein food (25%) but as with most legumes, the protein is low in the amino acid methionine. They are high in dietary fibre, high in potassium and low in sodium. They are a good source of B-vitamins, especially folate and thiamine, as well as vitamins A, C, and E.

## Cultural practices

### Soil preparation

Peas grow in all soil types that are rich in organic matter, well drained and fertile. Approximately 5 to 8 cm of well composted organic



matter and 0.45 kg of all-purpose fertiliser (8-8-8) per 9 m<sup>2</sup> of garden area needs to be incorporated before planting. Work the compost and fertiliser into the soil to a depth of 15 cm.

### Planting

A quantity of 0.056–0.085 kg of seed should be used when planting 30 m of row. Extra seed can be stored and used the next year. Plant seeds 2 cm deep, spaced 2 to 5 cm apart, in rows 30–60 cm apart. No thinning is necessary if plant stands are too thick.

Planting dates for garden peas are 14 to 21 days, usually from March until 1 April in warm regions and 1 May in cooler regions. Peas require 60 to 70 days to mature, depending on variety. Garden peas can be planted again mid-August and mid-September in warm areas for autumn production. Mulching the crop during the summer will improve soil water loss and increase nutrient availability. Yields of autumn-grown peas are not as good as the spring-sown plantings.

### Support

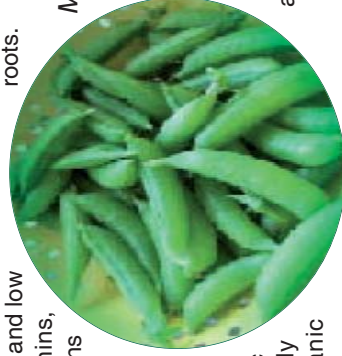
Most pea varieties are self-supporting during growth. Taller pea varieties are more productive and easier to harvest if caged, trellised or fenced. Wooden poles, wire cages, or other fencing materials make ideal supports for peas.

### Fertilisation

Peas do not require additional fertiliser if an all-purpose fertiliser and compost was applied at planting. Additional applications of nitrogen will over-stimulate leaf growth, and will delay flowering and reduce pod set. Most peas fix some nitrogen from the air via soil bacteria attached to the plant roots.

### Mulches and row covers

Fabric row covers help to protect very early plantings from frosts. Addition of organic mulches such as grass clippings, straw and shredded newspapers in the heat of summer helps to control weeds, improve soil water-holding capacity and reduce soil temperatures in autumn pea plantings.



### Irrigation

Application of water regularly throughout the growth is best for production. Soils should be allowed to dry off until half of the available water is used before returning the soil to field capacity. Overwatering and wet soil promotes root rot diseases and slows plant growth. Water needs are critical after flowering. Drought stress will decrease yield owing to pod abortion and reduce seed size, increase pod stringiness, and alter seed quality. Watering volumes depend on soil type and organic matter content.

### Weed control

Controlling weeds with regular cultivation, especially when plants are small, encourages good crop quality. The soil should also be cultivated shallowly around plants to avoid root damage, which, in turn, slows plant growth. Weed control is essential during the first 6 weeks of growth.

### Pest control and disease control

#### INSECTS

Pea aphid: this insect transmits pea enation virus which causes curling, mottling and deformation of the leaves. Wash aphids from plants with a strong stream of water. Destroy infested plants after harvest.

Army worms and cutworms: army worms will climb the plants and feed on leaves and stems. Cutworms do most of their feeding near the soil surface. Controlling weeds and debris in the garden that provide cover for worms eliminates pest populations.

Pea weevil: adult females lay eggs on young pea pods and the larvae burrow into the pod and feed on the seed. Early planting and harvest minimises exposure. Picking off adults when found, is one of the best control methods.

#### DISEASES

Fusarium wilt: becomes a problem when soil temperatures exceed 21°C. Normally causes a downward curling of leaves and stems become brittle. Planting early as to allow the crop to develop before the soil reaches the optimum temperature for wilt development.

