

## **Potatoes**

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Potato, tatties, papas, spuds. Call them what you like! The humble potato has now gone 'gourmet'. Of course not just any old potato, but the varieties our grandparents grew and appreciated for their taste and different cooking attributes. Supermarket chains are now marketing a range of potato varieties targeting the discerning buyer willing to pay premium price for a more unique product. Organic growers have always acknowledged the unique qualities and flavour of different varieties. Grow your own gourmet crop this season by planting a patch of spuds!



### **Fact File**

**Botanical Name:** Solanum tuberosum

**Family:** Solanaceae – the potato family

**Origin:** South America

**Climatic Range:** Potatoes prefer mild climates with optimum growth and tuber production occurring at temperatures between 16 and 22 degrees Celsius.

**Planting Season:** Potatoes can be established during early spring and summer in cool or frost prone districts and in autumn, winter and spring in warm temperate climates and subtropical regions. Potatoes can also be grown successfully in elevated regions within the tropics during the dry season.

### **Description:**

Botanically speaking a potato is a tuber. A tuber is the swollen tip of a rhizome, which itself is a modified stem. The eyes of a potato are in fact the buds of this modified stem. When a potato tuber is planted some of these buds develop into stems while others form the roots of the plant.

### **Propagation**

While potatoes do flower and can form seeds in the traditional sense, these are not the seed potatoes that are generally used for planting. Seed potatoes are tubers from a previously healthy crop that are saved for replanting. Seed potatoes have exactly the same genetic makeup as the parent crop from which they were collected.

### **Certified Seed Potatoes**

Potatoes are ideally planted using certified seed potatoes available from nurseries, produce stores and through mail order catalogues. This means that the potatoes that you purchase for planting have come from sources that have been tested and deemed to be free of major pests and diseases.

Potatoes are potentially subject to a huge range of disease problems. Some of these, particularly virus diseases, may not have obvious leaf symptoms but cause a significant reduction in yield. Virus diseases cannot be cured and are commonly transferred from one crop to the next by planting infected material. Purchasing disease free certified seed potatoes is one way of reducing the incidence of disease in homegrown potato crops.

Aphids and other sucking insects can spread virus diseases from a diseased crop to a healthy crop, so new seed potatoes should be purchased each planting season. Unfortunately, not all varieties of potatoes are available under certified disease free schemes.

### **Growing Your Own**

Potatoes can be grown in well-prepared garden beds or cultivated using a variety of no-dig methods. Regardless of the method used, good drainage, adequate nutrition, regular watering and full sun are essential.

When planting potatoes, larger tubers may be cut into two or more sections provided that each piece has several well-formed eyes or nodes. Cut potatoes should be allowed to dry out for a day or two before planting. Prepare your seed potatoes for planting by exposing them to light. They



should develop a green tinge to the skin and form stout shoots prior to planting.

### Potatoes under soil

Potatoes prefer fertile, well-drained, slightly acid soil. Garden beds should be prepared in the same way as for production of any vegetable with high nutritional demands. Deeply fork the soil and incorporate plenty of organic material. Avoid using very fresh manure as this can result in the burning of young plants.

Potatoes belong to the same family as tomatoes, capsicums, chillies and eggplants. Avoid growing potatoes in beds that have grown these crops in the previous season. The root systems of all members of the Solanaceae family are subject to attack by soil nematodes (eelworms). Populations of destructive nematodes build up in the soil when successive crops of related plants are grown. Practising crop rotation and incorporating large amounts of organic material is a simple and effective way of guarding against nematode damage.

Seed potatoes should be planted 10-15cm deep (slightly deeper in hot climates) with 25cm between plants and 75cm between each row. As the potatoes begin to grow it is necessary to hill up the soil around each plant to prevent the developing tubers being ruined by exposure to light. A thick layer of mulch can be used to the same effect.

### Potatoes under straw

Forget backbreaking preparation of garden beds, simply collect together some straw, compost and well decomposed animal manure. Wet down a 10-15cm base layer of this nutritious mixture and place your seed potatoes on top. Cover the potatoes with of further 15cm of the no-dig materials. As the potato shoots begin to peep through, continue to build up the materials until your layers total at least 50cm.

Of course, you do not need conventional square beds when using this method. Try creating some cylinders of chicken wire. Line them with newspaper to keep out the light and build up your no-dig layers within this supporting frame. Recycled plastic buckets or 10 litre tins with the base cut out can be used in the same manner. Large terracotta pots are ideal for growing potatoes on balconies or other places where space is limited.

### Harvesting

Commercial potato crops are harvested 12 – 20 weeks after planting, depending on climatic conditions and varieties selected. Homegrown potatoes can be harvested whenever the tubers are considered large enough. ‘Bandicooting’ is a delightful term used to describe the sneaking a few early potatoes from the developing crop. Simply feel beneath the soil or mulch layers of a growing plant. Gently harvest the largest tubers while leaving the undisturbed plant and the remaining tubers to continue to grow. These ‘new’ potatoes are the earliest of the season and traditionally eaten with the skin on.

Dieback of the green top growth of your potato crop generally indicates it is ready for harvest. Potato tubers are considered mature and suitable for long term storage when the skin is firm and does not rub off easily.

### Harvesting and Storage

Potatoes can be stored in the soil for some time in climates where temperatures are cool and the soil perfectly drained. Once you decide to harvest your potatoes, simply brush off the excess soil and store them in a dark, well ventilated, dry environment. Never allow stored potatoes to be exposed to light or they will turn green. The green indicates the formation of solanine, a substance that is poisonous. The leaves, leaf stalks and stems of potatoes are also poisonous.

### Why do varieties fall from favour?

Australians now demonstrate a preference for pasta and rice over home cooked potatoes. When we do buy potatoes, more of us prefer washed, general-purpose varieties that are suitable for a range of cooking applications. An increasing proportion of the potatoes we do eat are consumed as processed potato chips, frozen chips and as commercial French fries sold through fast food outlets. Only a limited number of varieties are suitable for these applications.

### More Mulch

Heavy mulching of potatoes keeps the soil cool, helps to maintain constant moisture levels, controls weeds and prevents developing tubers turning green through exposure to sunlight. It also foils the potato moth, which cannot penetrate the mulch to lay its eggs. Potato moth larvae can ruin a potato crop by eating their way through the stems and tubers.

### Food for Thought

Commercial fast food chains buy their potatoes by weight, but sell them by volume. It takes up to 20% less potatoes to fill a paper cup with long thin chips than it does with thick fat ones. Twenty percent less chips means 20% more profit.

### Peas or Praties?

In Australia, St Patrick's Day, (March 17<sup>th</sup>) is commonly held to be the day to plant sweet peas, but in Ireland it is heralded as the traditional day for planting potatoes. The 'Day of the New Potatoes' is celebrated on the Sunday nearest the 1<sup>st</sup> August when the first of the season's new potatoes are harvested and eaten.

### Chemical Kill

Commercial potato growers keen to harvest potatoes quickly do not want to wait for potato tops to die back naturally. Chemical herbicides sprayed over the green tops are used to efficiently kill off green growth so that crops can be harvested with greater speed. Home grown and commercially produced organic potatoes suddenly seem even more palatable!



Variety	Characteristics	Use	Comments
Atlantic	Round, buff skinned tubers with white flesh.	Good frying/processing variety, but collapses when boiled.	The most popular commercial variety for potato chip production.
Bintje	Yellow skinned, knobby, oval tubers with yellow waxy flesh.	Creamy fleshed variety, excellent boiled or in salads, but also suitable for frying.	Bred in the Netherlands in 1905, it has recently seen a revival in domestic popularity.
Bison	Large, rounded red skinned with shallow eyes.	Good all round, white fleshed potato, best boiled, mashed or baked, but not fried.	Relatively new variety introduced from the USA around 1985.
Coliban	Smooth, waxy skinned, white fleshed round tubers.	Best suited to mashing and baking.	A popular commercial washed potato.
Denali	Oblong to oval, buff colour tubers with white flesh.	Best suited to baking, boiling or mashing, but can be fried.	Used commercially for processing into potato chips.
Desiree	Elongated/oval tubers with smooth pink skin, pale yellow waxy flesh and shallow eyes	Excellent boiled, mashed or roasted potato, but not suited to frying	Developed in the Netherlands this is one of the most popular red skinned varieties.
Exton	Creamy white skin, oval tubers with white flesh	Good all round potato suitable for boiling, baking, salads and frying.	A 1949 Victorian variety popular as commercial washed potato.

Variety	Characteristics	Use	Comments
Katahdin	Flat, round, white/blue blushed skin with white flesh	General purpose potato suitable for boiling, baking salads and frying.	Once popular for washed potatoes now commercially replaced by other varieties.
Kennebec	Large tuber, white skinned and white fleshed variety.	Good all round potato excellent for roasting and chips.	Once popular for processing now largely replaced by other varieties. Hardy.
King Edward	Tendency to kidney shaped tubers, white, pink tinged skin and white flesh.	General purpose variety suitable for mashing, baking or cooked as chips.	Once popular commercially now largely replaced by other varieties.
Kipfler	Small, yellow finger-like potato with pale yellow flesh.	Excellent boiled, mashed or salad potato with a nutty flavour.	Popular gourmet variety that produces good harvests.
Nicola	Medium to small, elongated yellowish skin with yellow flesh.	Excellent mashed, boiled or salad variety	An easy to grow Dutch variety.
Purple Congo	Small finger-like potato with purple skin and flesh.	Floury taste, but great colour contrast when used as a salad, mashed or baked potato.	Very easy to grow.
Red Pontiac	Early maturing, red skinned, white fleshed, rounded tubers.	Excellent boiled, baked or used in salads. Not suitable for frying.	High yielding variety, but has poor keeping qualities.
Russet Burbank	Long tubers with russetted skin and white flesh.	Excellent for baking, roasting or frying.	Popular with fast food chains for production into long French fries.
Sebago	Large, oval, white potato, smooth skin with white flesh	Good all purpose potato also used for processing into potato chips and French fries.	Introduced from the USA in 1940 it remains a popular commercial washed/brushed variety
Sequoia	Cream to white skinned, white fleshed large, flattened oval tubers.	Ideal for mashing, boiling or salads, but not frying.	Introduced from the USA in 1940 and used commercially in canned/processed salads.
Southern Gold	Mauve blushed skin with yellow, waxy flesh.	Best boiled, mashed or used in salads.	Also known as Pink Lady. Popular in Tasmania.
Spunta	Large, elongated often nobbly tubers with yellow skin and yellow flesh.	Good all round variety suitable for mashing, roasting or frying.	A Dutch variety noted as a prolific producer with good storage characteristics.
Toolangi Delight	Deep purple skin, rounded tubers and white flesh.	Most suited to mashing, boiling, roasting and salads, but can also be fried.	Bred in Victoria and released in 1986.

### **Storage**

A clamp is the traditional term given to the method of storing potatoes or other root crops under the protection of a cone-shaped or ridged heap. To make a potato clamp, select a well drained, conveniently located position in the garden, laying down a large circle of dry garden twigs and a thick layer of straw. Pile your mature potatoes in a cone shaped heap on top of the straw, taking care to ensure that all are free of injury and disease. Cover the potatoes with a further layer of clean straw, sealing the entire mound with soil. Pack the soil down hard and smooth the surface as much as possible. The slides of the clamp should be steep to ensure that rainfall runs off. Make a ventilation shaft at the top of the clamp by pulling through some of the straw to form a chimney. This allows excess moisture and heat to escape.

### **Potential Problems**

A range of destructive diseases problems plague conventional potato growers including bacterial wilt, purple top wilt, potato tuber moth, powdery and common scab and stem rot all of which are treated with chemical applications. Despite this, many back yard potato growers who use crop rotation, plenty of compost and invest in certified disease free seed potatoes each season, grow successive potato crops without a problem.

High air temperatures result in increased respiration rates and a reduction in tuber yield. Cool soil temperatures are also desirable for tuber formation. Mulching can help keep the soil cool and tubers protected from exposure to sunlight.

Distance between plants depends largely on the varieties being grown and requirements of the user. Large growing varieties planted close together will produce smaller tubers.