



**Excerpt from “Vegetables for the Irish Garden” by Klaus Laitenberger,
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Potato

Latin name: Solanum Tuberosum

Family: Solanacea (Nightshade Family)

Related to: Pepper, tomato, aubergine, tobacco, nightshades.

Botanical Classification: Solanum is the name given by Pliny, the roman Naturalist, to one of the night shades; possibly derived from the Latin name Solamen, a solace, from its medicinal values. Tuberosum means tuber-bearing.

Introduction

The potato really is the national vegetable of Ireland. The curious thing about it is that the potato was only introduced to this country relatively recently. It was one of the many exotic plants brought back to Europe from South America by explorers during the sixteenth century. Cultivation spread rapidly throughout Europe as potatoes provided an ideal crop for peasant farmers with small holdings.

By growing potatoes, a small area of land could provide enough nutrition to provide a basic subsistence diet for a family. It soon became the staple food of much of the population.

In Ireland the potato rapidly became the main item in the diet of the poorer people. With this new food source providing a healthy basic diet the rural population rose rapidly. As potatoes could grow on poor soils, the areas under cultivation expanded and even today the outline of old potato ridges can be seen high up on mountainsides especially in the West of Ireland.

The potato is the world's fourth most important food crop after wheat, maize and rice. It is also the most important root crop. It certainly has been the most important crop in Ireland since the 17th century.

History

The potato was first cultivated in Chile and Peru 5000BC.

1563: Introduction into England from Spain by Sir John Hawkins

1586: Second Introduction to Ireland by Sir Frances Drake

1725 onwards: potato became staple crop in Ireland

1740: First potato famine due to severe frosts that destroyed the potato crop

1821: second potato famine due to extreme wet autumn, the crop rotted in the ground

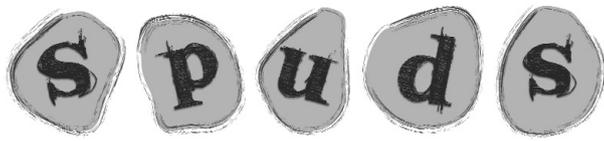
1842: Potato blight arrived in Europe (first in Germany and then Belgium)

1845: Blight arrived in Ireland

1846: Blight destroyed the entire potato crop in Ireland

1879: Another failed potato crop.

Late 1800's: Discovery of Bordeaux Mixture (compound containing copper and sulphur which is harmful to fish, livestock and worms due to build-up of copper in the soil) to control blight



Types of potatoes

Potatoes are classified according to their time of maturity:

- ◆ **First Early**
- ◆ **Second Early**
- ◆ **Early maincrop**
- ◆ **Late maincrop**

The early varieties grow much quicker but are lower yielding than maincrop potatoes. In most years they are also available to avoid blight (harvested before blight arrives). Maincrop potatoes produce a higher yield and can be stored over winter.

There are literally hundreds of varieties available. They come in various shapes (round, oval, knobby), sizes, colours (red, white, blue, purple etc) and textures (waxy or floury). In Ireland the floury potatoes are much preferred.

Soil and site

Potatoes prefer an open, sunny and frost free site. The soil should be fertile and free draining. Avoid low-lying frost pockets. They require a generous application of well decomposed compost or manure. However, if too much fresh manure is incorporated in spring the potatoes often “grow into leaf” at the expense of good tubers. This also makes them more susceptible to blight.

Planting

In Ireland, potatoes are traditionally planted in lazy beds. Potatoes can either be planted in ridges (single row) or using a bed system (double row). If they are planted in ridges it is much easier to earth them up. Plant the seed tubers 10 to 15cm deep into fertile ground. Early potatoes can be chitted in order to get an earlier crop but in this case you may also get a setback from late frost.

Chitting

Buy your early potatoes in February and place them in shallow trays (egg cartons) in a light frost free room. By mid March you will have strong sturdy little green shoots.

Planting times

First earlies: mid march (St. Patrick’s Day)

Second earlies: early April

Maincrop: mid to late April

In Ireland early potatoes were planted on St. Patrick’s Day or on Good Friday. People believed the potatoes would be blessed and healthy. Another belief was to plant the potatoes when a man can stand naked in the potato patch (for the non-Irish people this means he takes his top off).

Spacing

Early potatoes:

Between plants: 25cm Between rows: 50 cm

Maincrop potatoes:

Between plants: 35cm Between rows: 75 cm



Rotation

Potatoes are susceptible to a wide range of diseases. Thus it is essential that they follow a strict rotation programme (minimum of 3 to 4 years).

Plant Care

In case there is a danger of frost and your potatoes shoots are just appearing you can protect them by earthing them up and covering the shoots with soil for protection. When the haulm (shoot) is about 20cm high you should earth them up again. Use a draw hoe and pull loose soil against the haulm. Cover roughly half of the stem (10cm).

How much to grow?

It is very difficult to guess how much land you need to grow all your potatoes. It depends how much you like them. In one garden we grew about 40sqm and that provided more than enough for a family of four from July until April. One square meter may yield 5 to 7 kg of potatoes

Harvesting and storing

Early potatoes can be harvested whenever you feel they are big enough. Some books recommend waiting until they form flowers but this is very dependant on the variety you grow. For example the 'Orla' variety does not flower at all in some years but they are still ready from July onwards. You can start digging one or two plants in late June to see how big they are. Never dig more than you need at the time as the tubers will not store well. The early crop should keep you going until October when you harvest the maincrop.

Maincrop potatoes should be left in the ground until October even if you had to cut the stalks off for blight control much earlier. The reason for this is that the skins have to mature. This would happen naturally if the haulms are dying back. If stored in boxes of sand in cool, frost free shed they will keep until April the following year.

It is important that you harvest all potatoes, even the smallest; otherwise they will become weeds for the following crop.

Potential problems

If you look at gardening books the list of potential potato troubles looks endless. The most common ones are:

Frost Damage:

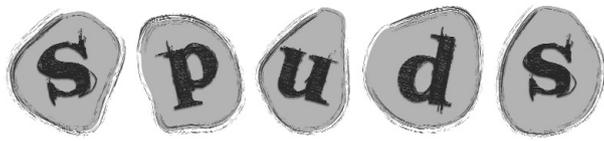
Prevention: earth up shoots before a frost spell or delay planting

Blackleg:

The symptoms include blackening of the stem at ground level and the leaves turn yellow and wilt. The disease is worse on heavy ground during wet weather. There is no treatment for it. You should remove the diseased plants and burn them. The varieties Orla, Rooster and Charlotte are fairly resistant to Blackleg.

Common Scab:

The symptoms are scaly patches on the potatoes. They are however, only on the skin, so the eating quality is not affected. The varieties Nadine, Golden Wonder and kind Edward have good resistance to scab.



Slugs:

Slugs will move to your potatoes in late summer and eat little or big holes into the tubers. It is important to keep your plot well weeded and the potatoes earthed up to minimise the problem. Varieties such as Santé, Charlotte, Nicola and Romano are more resistant to slugs than others.

Potato Blight

For the first two centuries after its arrival, potatoes flourished throughout Europe and there are no historical records of potato blight (*Phytophthora infestans*) affecting crop. The first incidence of blight was recorded in 1842 in Flanders in Belgium. Two years later in 1844 it first affected the crop in Ireland. The following years saw a series of disastrous crop failures which resulted in a widespread famine in Ireland.

What is Potato Blight?

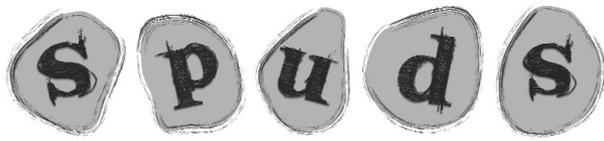
Potato blight is a fungal disease which acts by attacking and killing the tissue of the leaves and tubers. The disease is spread by spores and it can destroy entire crops very quickly (within days in some cases). When a crop is affected by blight the first symptoms are small pale to dark green decaying spots on the leaves. Under certain conditions these grow rapidly into large, brown to black lesions often with yellowish green margin outside the affected area. On young plants, blight travels quickly down the leaf and may affect the tubers. On more mature plants the disease progresses much more slowly. This means that an outbreak of blight early in the growing season has a much more severe effect on the crop. When a potato is affected by blight, darkened areas appear on the skin and the flesh is discoloured by a reddish-brown rot. In addition to the disease travelling through the plant, tubers can become infected through their eyes, wounds and directly through the skin. Potatoes affected by blight are inedible.

Factors affecting the incidence of blight

Susceptibility to blight is very dependant on a number of factors.

- ◆ Temperature and relative humidity
- ◆ Research has identified the conditions required for an outbreak of potato blight. These are named after the scientists who discovered them and when they occur a blight warning is issued by authorities.
- ◆ A **Beaumont Period** occurs where there is a minimum temperature of 10°C and a minimum relative humidity of 75% for 48 hours.
- ◆ A **Smith period** occurs where there is a minimum temperature of 10°C for 48 hours and minimum relative humidity of 90% for at least 11 hours on each of two consecutive days.
- ◆ **Rainfall**
Heavy rainfall greatly increases the incidence of tuber blight. Rainwater is the most common way by which blight spores reach the soil to infect tubers. Heavy rainfall of at least 6mm over a short period is needed to wash blight spores down to the tubers to cause infection.

As the climatic conditions in Ireland especially in the West are ideal for the spread of blight – choosing a blight resistant variety is very important.



Controlling blight

Use of resistant varieties

This is probably the single most effective way of dealing with the problem of potato blight.

Varieties

There are literally hundreds of potato varieties available. In Ireland the favourite varieties are Kerr's Pink, Record and British Queens. Kerr's Pink is unfortunately very susceptible to blight. There are now many blight varieties available like Sarpo Mira and Sarpo Aximo (Hungarian varieties with best blight resistance) or Setanta (Irish bred) However, the more blight resistant varieties tend to be less floury and therefore less appealing to the Irish palate.

Good Agronomic practice:

- ◆ Tubers near the surface of drills are more frequently affected than those which are deeper. Planting in well formed drill will therefore provide protection to the developing tubers.
- ◆ Early planting of potatoes (ideally even chitted) will give them a good start. Their leaves will be more mature and thus more resistant when blight strikes.
- ◆ A good nutrient balance in the soil may lessen the incidence of blight. A high nitrogen content causes lush growth which is more susceptible to fungal disease.
- ◆ Although rarely relevant in Ireland, irrigation increases the overall incident of blight and should be avoided.
- ◆ When a certain amount of leaves (5%) are affected by blight, cutting off and removing the tops will minimise the risk of tuber infection. An interval of about 14 days between removal and lifting is recommended so that the skins can ripen before storage.

**"It is easy to halve a potato where there is love"
Irish Saying**

For further information: www.spuds.ie