

When blight makes you blue



Late blight causes large brown patches or black spots on leaves and stems. Plants eventually collapse and die

The accidental introduction of new strains of potato blight in the 1980s has had devastating consequences for UK potato and tomato growers. Sally Cunningham explains why, and what gardeners can do to mitigate the effects.

Late blight of potato, caused by *Phytophthora infestans*, has been known in the UK for over 200 years, but until recently it existed as a single strain. Although capable of mutation, it was slow to change. In the late 1970s, consignments of potatoes were imported into the Netherlands from Mexico, the home of the blight pathogen. They carried with them many new strains of blight. Some of these came to the UK, probably within seed potatoes. Both “sexes” of the blight were now present, allowing the blight to interact sexually, and resulting in new strains of the disease.

In 2005, during annual routine surveys of blight, a new strain named ‘Blue 13’, was noted in England. This strain became widespread in the following years and now forms 90%

of the blight population in Great Britain. The sinister aspect of ‘Blue 13’ is that it is more destructive than the older strains. Even worse, it can overcome the innate resistance in some of our favourite varieties; ‘Blue 13’ can infect formerly resistant cultivars, such as ‘Cara’, ‘Valor’, ‘Remarka’, ‘Setanta’, and ‘Lady Balfour’, and frequently proves fatal.

What can you do?

Good husbandry is the prime tactic against blight for all gardeners and growers.

- Remove and destroy any stray potato or tomato plants (“volunteers”), which may have survived from last year.

- Always use best quality seed potatoes from a reputable source; discard any that look unhealthy.
- Use at least a four-year rotation.
- Plant potatoes early, using wide spacings, on an open site.
- Grow tomatoes under cover in cold frames, polytunnels or unheated greenhouses; avoid wetting the foliage.
- Don’t use heavy applications of nitrogen, which encourages soft, disease-prone growth.
- Earth up or mulch potatoes to reduce risk of the tubers being infected.
- Cut down potato foliage as soon as symptoms are noticed. Wait three weeks before digging up the crop.



Mulching potatoes, or growing them through straw as shown here, can reduce the risk of blight infection on the tubers

Composting potato haulms

Put diseased potato and tomato foliage straight on to the compost heap. Cover it with other compostable waste, and put on the lid to prevent the spores spreading on the air. Don’t compost potato tubers (unless crushed so they will not grow in the heap) or tomato fruits.

Next year?

Why not try one or two of the 'Sarpò' potato varieties, which have a very strong blight resistance. Look out for more information about these in a future issue of *The Organic Way*.

Tomato blight

Tomato blight is also caused by *Phytophthora infestans*. Similar, though less severe, symptoms appear on leaves and stems. The fruits develop brown patches, which may not be apparent until several days after they have been picked. The variety 'Ferline' has some blight resistance, but can still develop the disease in a very wet season, just as the fruit starts to ripen.

A cure for tomatoes?

Green fruit picked from blighted plants often develops blight as it ripens. Dr David Shaw of the Savari Research Trust, which brought 'Sarpò' potatoes to the UK, has found a way of "curing" fruit from blighted plants, so that they ripen normally without developing symptoms. Blight stops growing at around 25°C, so he kept polythene bags of green fruit (variety 'Sungold') in an incubator at 40°C. These preliminary experiments



Prappears

Although tomato variety 'Ferline' has some blight resistance, it may succumb in very wet weather

showed that a treatment period of 12 hours or more seemed enough to kill the disease, and allow the fruit to ripen normally over the next few days. However, more work is needed to see if this treatment is successful on all strains of blight and all varieties of tomato.

But how do you provide this sort of

temperature for 12 hours? Dr Shaw used a poultry incubator, but suggests it might be possible to adapt an insulated tank of water, with the tomatoes in a sealed plastic bag. If you try this method, please let us know and we will pass on your findings to Dr Shaw and Garden Organic members.



You can compost blighted foliage. But remember to keep the lid on to prevent spores spreading

Is it really blight?

The spectre of blight is so threatening to some gardeners that they assume any browning of potato leaves is caused by blight, and may destroy the crop unnecessarily. Frost, strong winds, natural dieback of early varieties, nutrient deficiency, grey mould, and target spot, also called early blight (*Alternaria solani*), can all give superficially similar symptoms. True late blight *Phytophthora* infection appears as large rounded or irregular patches of brown or blackish spots on the leaves and stems, sometimes surrounded by a paler halo. These patches enlarge daily and, if the weather is damp, show a fine, white film of mould on the leaf underside. Remaining leaf areas do not become yellow until the disease is much advanced. If the weather remains wet, the whole plant will collapse and die. If the weather turns dry, the fungus spread halts, only to recur when wet weather returns.



Early blight - symptoms differ from late blight

You can recognise early blight (*Alternaria solani*) by dark brown, angular spots on the leaves. The spots are concentrically zoned, and bounded by the leaf veins. Leaves shrivel and drop. Good soil and hygiene should solve this problem