

# Potato-tuber problems

GWF340

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There are several serious diseases of potato tubers. Most can be avoided by preparing the ground well before planting, and watering during dry spells.

## Common scab

### Q What is common scab?

**A** This disease (*Streptomyces scabies*) is the most common tuber problem for gardeners. Yield is lowered slightly, but the real waste comes in the extra peeling needed to prepare the potatoes for eating.

Common scab also affects other root vegetables such as beetroot, radish, turnips and swedes, but it is seldom serious in these crops.

### Q How do I recognise common scab?

**A** Look out for corky irregular wide and flat bumps, often in groups. These are frequently pitted and covered in scabs. Stems are also attacked, but not noticeably.

### Q When should I expect it?

**A** Dry, alkaline, sandy or chalky soils and hot dry summers promote scab attacks. The disease is an *actinomycete* - like a bacterium, but with threads of mycelium-like fungi. It lives in the soil, infecting tubers through natural openings like lenticels. The scabs release more of the resting bodies into the soil, where they remain dormant, ready to infect the next crop.

### Q What can I do about common scab?

**A** Once the crop is affected there is no cure for this disease. The tubers may look unappetising but they are still edible if peeled. Storage is not affected.

### Q Can common scab be avoided?

**A** Yes: by avoiding using lime before planting potatoes. Use plenty of organic matter such as compost, leaf mould and manure, when preparing the soil. Water during dry spells and grow resistant varieties. 'Pentland Crown', 'Golden Wonder', 'Nadine', 'Wilja', and 'Maris Peer' are relatively resistant, but 'Desirée' and 'Maris Piper' are very prone to attack.

Avoid sowing infected seed, but as the disease is widespread in most soils it is hard to avoid. Similarly, don't compost diseased peelings or old potatoes.

## Powdery scab

### Q What is it?

**A** This is a fungal disease (*Spongospora subterranea*), but unlike common scab, is not particularly common. It sometimes affects tomato and watercress roots. It has an free-living, mobile stage in the soil, during which time it can transmit mop-top virus.

### Q How do I recognise powdery scab?

**A** You will notice raised irregular scabs which release a powder of spores. This powder is brown and the spores can survive for as long as ten years in the soil. Before the scabs burst, there may be surrounding areas of discoloured skin. In extreme cases cankers form, disfiguring the tubers with large outgrowths. These are not spreading and cauliflower-like, as in

wart disease. Another factor that differentiates powdery scab from both wart disease and common scab are the tumour-like growths which form on the roots.

### Q When is it likely to attack?

**A** It is associated with heavy soils and wet seasons, but if potatoes are overwatered, it can occur in any summer and on light soils.

The spores germinate in the soil and release swimming spores that affect roots by travelling in the soil moisture. More spores are released from these roots; they enter tubers through natural openings such as lenticels and wounds. Here, new scabs are produced. If there is a dry spell followed by wet weather, cankers and tumours are produced. Spores from these cankers then attack newly formed tuber tissues, making more scabs.

### Q What can I do about powdery scab?

**A** Once a crop is attacked there is no cure. Spores are long-lived so do not grow potatoes on infected sites for at least three years.

### Q Can it be avoided?

**A** Avoid manure from places where potatoes are fed to animals and reject affected or damaged seed.

### Q Are there any resistant varieties?

**A** 'Santé' is exceptionally resistant. Others to consider are 'King Edward', 'Desirée', 'Maxine', 'Pentland Dell' and 'Record'.

## Wart disease

### Q What is it?

**A** A fungal disease (*Synchytrium endobioticum*) that was once extremely serious and is still subject to legislation, making it a notifiable disease. However, all of the varieties that are now commonly grown are resistant to wart disease except for a few, such as 'King Edward' and 'Sharpe's Express'.

### Q How do I recognise wart disease?

**A** This disease produces cauliflower-like outgrowths on the tubers, stolons and leaves, often spreading from eyes on tubers into cauliflower-like masses. Tubers may become engulfed by the outgrowths. It can develop in storage from barely visible warts.

### Q When should I expect it?

**A** Hopefully, never. If you do see it, you should phone your local office of the Department for Environment, Food and Rural Affairs (Defra) 08459 335577 in England and Wales or Department of Agriculture and Rural Development Northern Ireland (DARDNI) 02890 524999, or Scottish Executive Rural Affairs Department (SEERAD) 08457 741741 or 0131 556 8400. They will advise you what action you should take.

## Black scurf

### Q What is it?

**A** A fungal disease (*Rhizoctonia solani*) which damages early potato shoots in cold, wet soils. Later, it infects and damages stems and tubers, which develop black spots.

### Q How do I recognise black scurf?

**A** Look out for black speckles, which can be scraped off the tubers. Earlier in the season, watch out for brown

stem bases; these infected areas may go right around the stem. The leaves become rolled and wilted. A white powdery collar can sometimes be seen around the stem at ground level, too. In severe cases, where they are planted in cold soils, the young sprouts are killed and the crop does not survive.

### Q Could I mistake black scurf for anything else?

**A** You could mistake this for the more serious blackleg disease, but the stems in this disease are blackened at ground level and the plants killed. Leaf-roll virus also affects the foliage.

### Q When should I expect it?

**A** It is carried on the seed, or is already present in the soil. It is most likely to occur when the conditions are cool and on light soils.

### Q What can I do about it?

**A** The spots don't look good, but the potato beneath is sound and can be cooked as usual. Losses are from extra peeling, not reduced yield.

Sprout potato seed indoors and delay sowing until the soil is warm - mid-April should be fine. As an extra insurance, a fleece covering will warm the crop up. Try not to grow potatoes on the same spot of ground more often than once in three years.

## Growth cracks

### Q What are they?

**A** When the tubers have deep cracks that have healed over with a rough, callus-like covering, this is a sign that the tuber has grown very fast when wet weather followed dry. In these conditions, the tubers stop growing, then have a spurt of growth when it rains. Viruses can occasionally cause cracks as well, but soil-moisture changes are the main cause. This problem makes the tubers harder to clean or peel, but they are perfectly edible.

### Q What can I do about growth cracks?

**A** Try not to let potatoes dry out completely. Water heavily in dry periods, especially if your soil is prone to drying out. Adding organic matter may help your soil hold moisture, but watering is the only certain way to limit growth cracks.

## Second growth

### Q What is it?

**A** Tubers with knobbly protuberances at the eyes could be suffering from second growth. These can make the tuber knobbly, or can lead to their elongation. Sometimes numerous small, useless tubers are formed. This happens when wet weather follows a dry spell. The tubers stop growing, and then grow rapidly in the renewed moisture.

### Q What can I do about it?

**A** The tubers are still edible, but cleaning and peeling is harder, so waste is greater. Provide an even water supply, to avoid the stop-start growth conditions that promote this problem. The only sure way to do this is to water regularly. Adding extra water-retaining organic matter might help, too.