

Strawberry black spot



What is it and where is it found?

Strawberry black spot is an economically important disease of strawberries caused by the fungus *Colletotrichum acutatum*. The fungus can remain unobserved in strawberry plants until the crucial fruiting period. Then, if conditions are favourable for the disease, it develops rapidly resulting in substantial losses (up to 80% yield loss) both in the field and when the fruit reaches market. This fungus can also infect a wide range of other plants, both within and outside the UK, such as anemone, lupin, camellia and apple.

The disease is found in nearly all countries where strawberries are grown. It was first found in the UK in 1983 on strawberry plants imported from California and, since then, measures have been taken to prevent establishment and to eradicate the disease whenever it has been detected in propagation crops. Reported outbreaks in recent years have mostly been associated with infected runners imported from the European mainland.



What are the symptoms?



On fruit, sunken, brown, circular spots develop as the fruit ripens. The spots darken with age, hence the name 'black spot', and can expand to engulf the whole fruit if this is left on the plant.

In **dry weather**, minute salmon coloured crusts of spores are just visible between the seeds within the spots. **If the fruit becomes infected well before ripening**, the development of the spots may be arrested, they then turn black and the fruits become distorted. The fungus will inevitably cause a post-harvest rot of some fruits which were apparently healthy at picking. **On foliage**, small spots can develop, while black, elongated, depressed lesions can occur on stolons and flower stalks. However, except where conditions are especially favourable for the disease, these symptoms are rare and inconspicuous.



Early symptoms on ripe fruits: spots initially brown

How does it develop and spread?

The disease is spread when infected strawberry runners are traded. However, symptoms are rarely seen as the fungus is usually latent on this material. Once planted, fungus in the crown of the plant produces spores which are spread by water-splash to other parts of the plant, where they cause the symptoms described above. The fungus can survive from year to year around the crown of infected plants or on infected crop debris left in the soil. It may also survive on a wide range of common weeds. **The disease can be spread within the crop by:**

- water-splash;
- insects;
- handling and picking;

and is favoured by warm, humid conditions (optimum temperature 25°C). The disease builds up rapidly during the first year of cropping and is usually more severe in the second and subsequent years, especially where successive waves of ripening fruit on everbearing cultivars coincide with periods of warm, wet weather.

What is being done?

Defra Plant Health and Seeds Inspectors (PHSI) carry out regular inspections to ensure that planting material in the Plant Health Propagation Scheme (PHPS) is free from the disease. In addition, non-PHPS strawberry propagation material is inspected for plant passporting purposes. Defra are also prepared to sample and test any consignments of imported or suspect runners that are brought to their attention.

What action can be taken?

There are no totally effective chemicals to control against strawberry black spot. However, the following cultural measures can help to prevent the disease getting a hold:

Nitrogen	Limit nitrogen applications to 40 kg/ha/yr on June bearers, and 80 kg/ha/yr on ever bearers.
Mulch	Apply a straw mulch between rows and on any plastic mulch to limit dispersal of spores through water splash.
Picking intervals	Minimise the amount of ripe fruit on the crop at any one time by keeping picking intervals as short as possible.
No Paraquat	Avoid Paraquat for weed and runner control as it encourages development of the fungus.
Plant debris	Wherever possible, collect plant debris from the field after harvest and either burn or bury it deeply.
Crop management	Improve air circulation by crown thinning, good weed control and removal of rotten and over-ripe berries as these will all help reduce the risk. Consider moving off June bearers after harvest and possibly again in the spring. If possible debris should be collected and destroyed.
Crop duration	Keeping a crop for only 1 or 2 years greatly reduces the risk of development and spread of this disease.
Fungicides	General advice is given in the Horticultural Development Council (HDC) Factsheet 14/02 but qualified advice should be sought for current products. They must be used in conjunction with appropriate cultural measures.

Keep a good look out

Strawberry black spot is an EC-listed quarantine disease and should be notified on strawberry crops whenever found. Strawberry runners must be free from the disease. When the disease is found on propagating crops, infected runner mother plants must be destroyed immediately, hygiene measures implemented and other measures taken as directed by PHSI. Infected propagating crops cannot be plant passported. At the end of cropping, all affected beds are required to be destroyed and either the soil sterilised or the field put down to grass for a period of time. When confirmed on fruiting crops in the UK, growers are advised to implement hygiene measures and apply sprays to protect new growth. Further information on the disease can be obtained from the HDC Factsheet 14/02.

If you suspect the presence of this disease on your premises, you should immediately inform your local Defra Plant Health and Seeds Inspector or the PHSI HQ, York:

Tel: 01904 455174

Fax: 01904 455197

Email: planthealth.info@defra.gsi.gov.uk

Website: www.defra.gov.uk/planth/ph.htm

Published by the Department for Environment,
Food and Rural Affairs. © Crown Copyright 2006.

Printed on material that contains a minimum of 100% recycled fibre
for uncoated paper and 75% recycled fibre for coated paper.

www.defra.gov.uk

PB2253 T12087