

Parsnip canker

GWF338

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A disease which causes roots to blacken, crack and eventually rot. Avoid it by growing resistant varieties and by improving the soil conditions.

Q What is parsnip canker?

A Black or orange patches on the roots are a sign of parsnip canker. The patches usually occur near the shoulder of the roots and the crown of the plants. In severe cases, the roots crack and rot. There are two kinds.

Black canker, which is actually tinged purple. It is considered to be mainly caused by the fungus *Itersonilia pastinacae*. Other fungi thought to be involved are *Phoma* and *Mycocentrospora acerina*.

Brown or orange canker is thought to be caused by invasion of the fungus *Itersonilia pastinacae*. It is not usually damaging, but it gets into damaged roots. It is also responsible for leaf-spot disease.

Q Can I confuse it with anything else?

A The rusty-brown rotting roots caused by carrot fly can be confused with parsnip canker. Look for the tunnels and possibly maggots. Rots caused by *Sclerotinia* don't usually develop on roots in the ground, but can do on ones in store. The fluffy white mould and associated resting bodies are quite different from canker.

Q Where does parsnip canker come from?

A The fungi survive in the soil and build up to damaging levels if too many parsnip crops are grown in the same place too often. There is some evidence that the disease is carried on the outside of seed, and in seed that has not been cleaned properly. There is no way for a gardener to tell if the seed is contaminated.

Q What makes it worse?

A Predisposing factors include a badly drained soil. A low or acid pH also makes the disease more likely and more severe.

Carrot-fly injury and damage from hoeing can let the disease into the roots. Keeping down carrot fly by covering the roots

with fleece or insect-proof mesh in May and June will reduce damage. Hand weeding may be preferable to hoeing, especially in cloddy or stony soil.

Early sowings and large roots are worst affected. Sowing in late April, May and even June will help reduce incidence. Spacing more closely than is usual will produce smaller roots. Where canker is a problem, aim for plants about 7.5cm apart.

Q Can it be cured?

A Once the canker has started there is no way to reverse the effect. No amount of watering, liming or fertiliser will have any effect. Once an attack has been detected, use up the roots as fast as possible. Ideally, harvest roots immediately and store in damp

GROUND LIMESTONE			
Application rate to adjust pH to 6.5 in g a sq m (oz per sq yd)			
Test results: pH	Clay soil	Loam soil	Sandy soil
6.0	420 (13)	270 (8)	140 (4)
5.5	800 (24)	540 (16)	270 (8)
5.0	1200 (36)	800 (24)	420 (13)
4.5	1200 (36)	1080 (32)	540 (16)

sand. Don't let debris get back on to the vegetable plot. Clear away all crop remains in the spring. This reduces the amount of disease organisms in the soil.

Q Can it be avoided?

A Improving drainage, by putting in drains, double-digging to destroy compacted soil and making raised beds, will reduce the severity. Improving drainage can be difficult on clay soils however. Adding organic matter, such as mushroom compost, well-rotted manure and garden compost, will improve the soil structure, which in turn enhances drainage. Although it is often said that manuring causes fanged or forked roots, there is no evidence that this is the case.

If your soil is acid, add lime to raise the pH to 6.5. If you don't know the pH, either use a cheap kit for a rough-and-ready pH determination or take advantage of the *Gardening Which?* Soil Analysis Service. For more details about this service call 0845 307 4000. The table overleaf, shows how much lime to add.

Q Can it be prevented?

A Total prevention on soils predisposed to canker is unlikely, but

the incidence can be greatly reduced by following the guidelines in this factsheet.

Q What chemicals can be used to control it?

A No chemicals have been found that prevent or cure the disease.

Q Are there any resistant varieties?

A Canker-resistant varieties are available - 'Alba', 'Arrow', 'Avonresistor', 'Bayonetta', 'Cobham Improved', 'Gladiator', 'Imperial Crown', 'Javelin', 'Marrow Improved', 'White Gem' and 'White Spear' are ones to look out for. They should always be used where canker is a problem. They are the most cost-effective control measure although cannot be guaranteed. Where conditions are tough for parsnips and the canker risk great, 'Bayonetta' and 'Javelin' are the most resistant.

Q Are there any varieties I should avoid?

A 'Offenham' is reputed to be especially susceptible, and 'Lancer' and 'Yatesnip' seem less resistant than the ones mentioned above.

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