

Citrus powdery mildew

Have you seen this citrus disease?

What is citrus powdery mildew?

Citrus powdery mildew is a fungal disease that causes leaf and shoot distortion, premature leaf and fruit drop, and twig and branch dieback. Severe infection can significantly reduce tree productivity, fruit quality and yield. The disease can also be a major problem in citrus nurseries. It has been reported to cause serious damage to mandarins, particularly nursery stock, in Asia.

The disease is common in parts of Asia where it is prevalent in shady, poorly ventilated orchards. There have also been reports from Uganda, Israel, Central and South America and the United States (California). Citrus powdery mildew is not known to occur in Australia.

Citrus powdery mildew is a plant disease and is not harmful to people or animals.

What causes citrus powdery mildew?

Citrus powdery mildew is caused by the fungi *Oidium citri* and *O. tingitaninum*. Powdery mildew on other crops, though similar looking, is caused by different species of powdery mildew fungi.

Which citrus plants are affected?

All citrus cultivars can be affected, though some cultivars appear more susceptible than others. In India, the citrus varieties that are most susceptible are mandarins, sweet oranges and tangerines.

What does citrus powdery mildew look like?

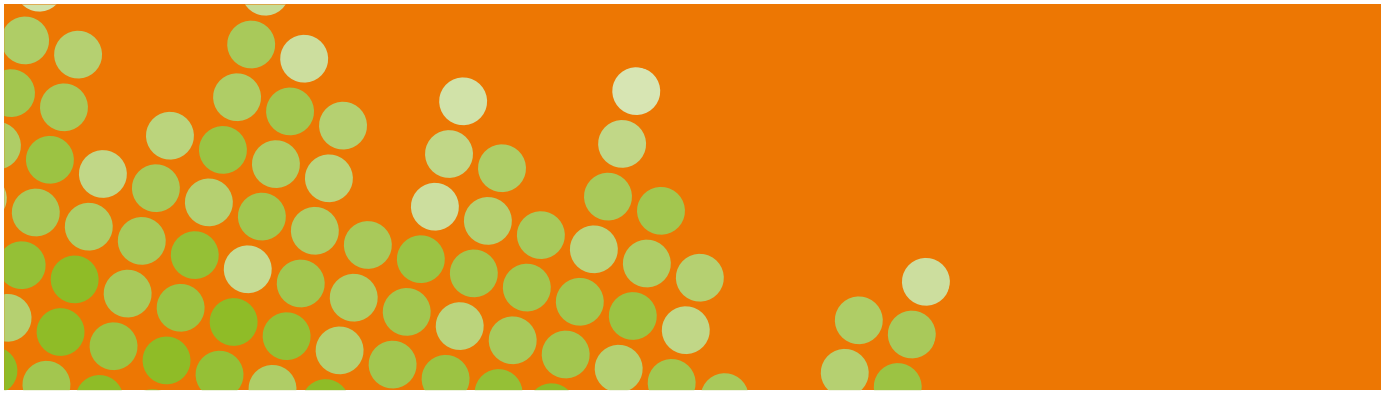
Leaves

- White 'powdery' spores develop mostly on the upper leaf surface.
- Young leaves turn a pale whitish-grey-green.
- The ends of mildewed leaves can twist and curl upward.
- Young shoots can wither and die back.
- Severe infection causes defoliation.



Early symptoms of citrus powdery mildew on leaves

Photo courtesy of S. Hardy, NSW DPI



Citrus powdery mildew on leaves

Photo courtesy of S. Hardy, NSW DPI

Fruit

- White 'powdery' spores develop on young fruit.
- Infected fruit fall prematurely.



Young citrus fruit covered with white 'powdery' spores

Photo courtesy of S. Hardy, NSW DPI

Trees

- Infection usually appears first on the new flush and immature growth.
- Plants can develop twig and branch dieback.



Tree dieback caused by citrus powdery mildew

Photo courtesy of N. Donovan, NSW DPI



Powdery mildew infected leaves can become twisted and curled, leading to withering and defoliation

Photo courtesy of A. Beattie, University of Western Sydney

How is citrus powdery mildew spread?

This disease produces tiny, powdery spores that can survive on fallen leaves. It can be transported long distances by wind, on people (clothing, hands), equipment (e.g. pruning tools, mechanical harvesters or hedgers) or vehicles.

Movement of infected citrus planting material poses a significant threat. The Australian Quarantine and Inspection Service (AQIS) closely regulates approved host plant imports and monitors for illegal plant movement.

How can I protect my farm from citrus powdery mildew?

There are simple steps you can take to protect your farm:

- Be aware of exotic citrus pest threats like citrus powdery mildew.
- Purchase healthy propagation material from reputable nurseries that use Auscitrus seed and budwood, which is routinely tested for disease. On receipt of any new plants, check that they are free from pest and disease. If citrus powdery mildew is detected, isolate suspect nursery material from healthy plants until official checks are completed.
- If you have been to an overseas country that has citrus powdery mildew, do not wear your travel clothes into any nursery or orchard until after they have been washed in hot soapy water.
- Keep your farm clean. Use good sanitation and hygiene practices. Remember – workers, visitors, vehicles and equipment can spread diseases. Make sure equipment is clean before it enters your farm.
- Check your crop. Make sure you and your farm workers are familiar with symptoms of citrus powdery mildew.
- Report anything unusual.



The tiny, powdery spores of citrus powdery mildew can be transported on people (clothing illustrated), equipment (e.g. pruning tools, mechanical harvesters or hedgers) or vehicles

Photo courtesy of A. Miles, DEEDI



Have you seen citrus powdery mildew?

Be on the lookout for this disease, and immediately report it to Biosecurity Queensland. Do not move any plant material off your property—this can spread the disease.

Call Biosecurity Queensland on 13 25 23 or the National Exotic Plant Pest Hotline on 1800 084 881.

Further information

For more information, call Biosecurity Queensland on **13 25 23** or visit **www.biosecurity.qld.gov.au**



Citrus powdery mildew on Cleopatra mandarin leaves

Photo courtesy of N. Donovan, Industry & Investment NSW

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Immature citrus fruit covered with powdery mildew

Photo courtesy of S. Hardy, NSW DPI