

Cucumber powdery mildew (063)

Summary

- Worldwide distribution. On cucurbits, cucumber, melon, pumpkin, squash and zucchini. Some legumes and ornamentals are also susceptible to infection. An important disease.
- White patches of fungus over both side of leaves. The fungus grows over the leaf surfaces, dropping structures ('haustoria') to feed on the leaves. Spores do not need water for germination, but humidity has to be high.
- Leaves die early, fruits suffers sunburn, ripen early, do not store well, or have poor flavour.
- Cultural control: tolerant varieties of cucumber, melon, pumpkin and squash; sites with good air circulation; avoid planting near old crops; weed; collect trash and destroy after harvest; crop rotation.
- Chemical control: for organic production: horticultural oil, potassium bicarbonate, wettable sulphur; for non-organic production: wettable sulphur, chlorothalonil, triazololes.

Common Name

Cucumber powdery mildew

Scientific Name

Two species have been recorded: *Podosphaera xanthii* and *Golovinomyces cichoracearum*; previously *Sphaerotheca fuliginea* and *Erysiphe cichoracearum*, respectively. These are the names of the sexual forms of the powdery mildews, but in Pacific island countries only the asexual form has been found, known as *Oidium* species. Unfortunately, unless the *Oidium* form is examined microscopically soon after collecting identification is difficult.

Even in 1981, the Survey of Agricultural Pests and Diseases¹ recognised that samples identified as *Sphaerotheca fuliginea* were likely confused with *Erysiphe cichoracearum*. Since then other taxonomic complications have arisen from molecular analyses. *Golovinomyces cichoracearum*, for instance, is recognised as a 'species complex', i.e., it is more than one species.

In the interim, and while the taxonomy is better understood, it is best to refer to all powdery mildew fungi of cucurbits from Pacific islands as *Oidium* species.



Photo 1. Powdery mildew, *Oidium* species, on the top surface of a cucumber leaf.



Photo 2. White spots of powdery mildew, *Oidium* species, on the top surface of a pumpkin leaf. The plants appeared in Photo 3.



Photo 3. Powdery mildew, *Oidium* species, on the underside of a pumpkin leaf.



Photo 4. *Oidium* symptoms on okra (*Abelmoschus esculentus*).

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¹Dingley JM, et al. (1981) *Survey of Agricultural Pests and Diseases* Technical Report Volume 2. South Pacific Bureau for Economic Co-operation, United Nations Development Programme, Food and Agricultural Organization of the United Nations, Rome, Italy.

²CABI (2017) *Golovinomyces cichoracearum* (powdery mildew) Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/22065>) and from CABI (2016) *Podosphaera xanthii* (powdery mildew of cucurbits) Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/50922>); and from (including Photo 4) McKenzie E (2013) *Golovinomyces cucurbitacearum*: PaDIL - (<http://www.padil.gov.au>).

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