

## Zinnia leaf spots (532)

### Summary

- *Cercospora leaf spot*: widespread. In Oceania, common. *Alternaria blight*: moderately widespread world distribution, but not Africa. In Oceania, Tonga.
- Symptoms:
  - *Cercospora*: circular to irregular spots, up to 5mm diameter, light-grey to white centres, reddish borders, merging. Leaves wither and die. Spots on flowers.
  - *Alternaria*: initially circular spots, becoming irregular, up to 10mm; reddish-brown with light-grey centres (which may fall out); merging. Leaves wither and die. Stems with spots – severe at nodes, killing stems and causing dieback; possibly, cankers on stems at soil level. Spots on flowers. Sunflower is an alternative host.
- Spread: spores in wind-blown rain. *Alternaria* with seed.
- Biocontrol: none.
- Biosecurity: risk is from seedborne infections of *Alternaria*.
- Cultural control: hot-water treatment of seed (for *Alternaria* infection) – 51°C for 20 minutes; avoid new plantings next to (or downwind from) older infected plants, or where zinnias planted previously; space plants (allowing air movement), avoid planting in shade; do not give overhead water; collect burn or bury dead plants.
- Chemical control: protectants - copper, mancozeb, chlorothalonil; systemic products – e.g., strobilins or sterol biosynthesis inhibitors (follow manufactures' recommendations).

### Common Name

Zinnia leaf spots; two similar leaf spots occur: one is caused by the fungus *Cercospora*, and is called *Cercospora leaf spot*, the other is caused by the fungus *Alternaria*, and is called *Alternaria blight*. CABI prefers the name 'leaf spot of sunflower' for the latter.

### Scientific Name

*Cercospora zinniae* and *Alternaria zinniae*.



Photo 1. General appearance of zinnias infected by *Cercospora leaf spot*, *Cercospora zinniae*. Note, the spots on the upper leaves, and the withered and dead lower leaves.

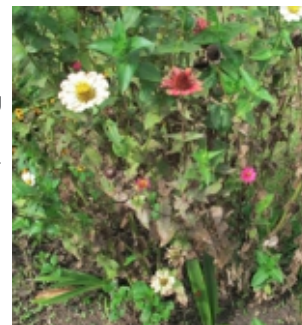


Photo 2. Flower infection of zinnia caused by *Cercospora leaf spot*, *Cercospora zinniae*.



Photo 3. *Alternaria blight*, *Alternaria zinniae*. Note, similarity with infections on Photos 1 and 2.



Photo 4. *Alternaria blight*, *Alternaria zinniae*. Note, infections are darker, more irregular than *Cercospora zinniae*, Photos 1 and 2.



Photo 5. *Alternaria blight*, *Alternaria zinniae*. Spots are more irregular than those of Photos 1 and 2, but both diseases have spots with grey centres.



Photo 6. Spores of Cercospora leaf spot, *Cercospora zinniae*.



Photo 7. Spore of Alternaria blight, *Alternaria zinniae*.

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Information from CABI (2019) *Alternaria zinniae* (leaf spot of zinnia). Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/4536>); and CABI (2019) *Cercospora zinniae*. Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/12298>); and *Alternaria* blight of Zinnia. Missouri Botanic Garden (<https://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/fungal-spots/alternaria-blight.aspx>); and Zinnia-*Alternaria* blight. Pacific Northwest. Pest Management Handbooks. (<https://pnwhandbooks.org/plantdisease/host-diseases/zinnia-alternaria-blight>); and Zinnia insect pests & diseases (2022) Home & Garden Information Center. Clemson University Cooperative Extension Service. (<https://hgic.clemson.edu/factsheet/zinnia-insect-pests-diseases/>); and Common leaf diseases of zinnia (1987) Department of Crop Science. University of Illinois Extension. (<http://ipm.illinois.edu/diseases/rpds/655.pdf>); and Phengsintham P, et al. (2013) Monograph of Cercosporoid fungi from Laos. Current Research in Environmental & Applied Mycology 3(1): 34-158. ([https://creamjournal.org/pdf/Cream\\_3\\_1\\_2.pdf](https://creamjournal.org/pdf/Cream_3_1_2.pdf)). Photo 3 Larry Osborne, Bugwood.org. Photo 4 John Hartman, University of Kentucky, Bugwood.org. Photo 5 Penn State Department of Plant Pathology & Environmental Microbiology Archives, Penn State University, Bugwood.org. Photo 6 Paul Bachi, University of Kentucky Research and Education Center, Bugwood.org. Photo 7. Bruce Watt, University of Maine, Bugwood.org.

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