



## Pacific Pests, Pathogens & Weeds - Mini Fact Sheet Edition

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### Cabbage black leaf spot (133)



Photo 1. Roughly circular leaf spots, with concentric rings, mostly between the veins on cabbage caused by black leaf spot, *Alternaria brassicicola*.



Photo 2. Cabbage leaf spot, possibly *Alternaria brassicicola*, showing dark brown areas where spores are forming, and a large spot (lower left) with a crack in the centre; later, the crack will widen and the centre of the spot will fall out becoming similar to Photo 5.



Photo 3. Spots of black leaf spot, *Alternaria brassicicola*, on Chinese cabbage.



Photo 4. Single leaf spot on a cabbage leaf caused by *Alternaria brassicicola*, showing the "shot-hole" effect: the centre of the spot rots and falls out. A yellow margin or halo is also seen.



Photo 5. Spores of black leaf spot, *Alternaria brassicicola*. Compare with spores of cabbage grey leaf spot, *Alternaria brassicae* (see Fact sheet no. 310).

### Summary

- Worldwide distribution. Temperate as well as tropical countries. Members of cabbage family, including broccoli, cabbage, cauliflower, mustard, oilseed rape, and cruciferous weeds are hosts, including weeds. An important disease, although the spots are mainly on the outer leaves which are removed before sale.
- Spots with ring patterns, and dark spore masses on underside of leaves. Spots fall out when old. Rots occur on heads of broccoli and cauliflower. Worse in cool areas.
- Seed infection causes damping-off, and lower quality.
- Spread in water splash, wind-driven rain, and in seed.

- Cultural control: seed - hot water (50°C for 25-30 mins.); nursery hygiene: clean trays, pasteurise soil or use soilless mixes, and discard infected seedlings; weed; space plants to allow air movement; avoid overhead irrigation; collect and destroy debris after harvest; crop rotation.
- Chemical control: seed - captan or thiram; field - copper, mancozeb, chlorothalonil.

## Common Name

Cabbage black leaf spot

## Scientific Name

*Alternaria brassicicola*. Another *Alternaria* fungus, *Alternaria brassicae*, grey leaf spot, also occurs, and causes similar symptoms (see **Fact Sheet no. 310**). Microscopic examination of the spores is needed to distinguish between the two species (Photo 5).



Photo 5. Spores of black leaf spot, *Alternaria brassicicola*. Compare with spores of cabbage grey leaf spot, *Alternaria brassicae* (see **Fact sheet no. 310**).

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Information (and Photo 1) from Gerlach WWP (1988) *Plant diseases of Western Samoa*. Samoan German Crop Protection Project, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Germany; and (with Photo 4) from *Diseases of vegetable crops in Australia* (2010). Editors, Denis Persley, Tony Cooke, Susan House. CSIRO Publishing. Photo 4 Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org. Photos 5 (taken by Eric McKenzie), and used in this fact sheet, appeared previously in McKenzie E (2013) *Alternaria brassicicola*. Available online: PaDIL - (<http://www.padil.gov.au>).

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