



**Fig. 1.** *Microdochium panattonianum*: conidiophores, conidiogenous cells and conidia (a); shot hole lesions (b & c); and sunken pits on midrib of lettuce leaf (d). Photo credits B. Sutton *et al.* (a) and H. Golzar (b, c, d).

**Common Name:** *Microdochium panattonianum* (synonym: *Marssonina panattoniana*)

**Disease:** Anthracnose (lettuce shot hole or ring spot)

**Classification:** K: Fungi, P: Anamorphic fungi, G: *Microdochium*

Lettuce anthracnose caused by *Microdochium panattonianum* is an important disease of lettuce worldwide. The disease has been previously reported in New South Wales, South Australia, Tasmania, Victoria and New Zealand, however this is the first report of anthracnose of lettuce in Western Australia.

**Fungal characteristics:**

White to pink spore masses of the fungus are often visible on the surface of leaf lesions. Fungal colony has a slow growth on potato dextrose agar (PDA), pale pink in color and without aerial mycelium. Conidiogenous cells hyaline, cylindrical to irregular, conidiophores, 8–12 µm long and 3–4 µm wide, conidia fusiform, with one septum, slightly curved, constricted at the septa, 14 × 3 µm size in average and form abundantly on PDA. Microsclerotia not produced on PDA but formed on infested leaves. Teleomorph stage of the fungus has not been reported.

**Symptoms and impact:**

The first symptoms of anthracnose appear as small circular to angular water soaked lesions on the lower leaves. Centres of lesions become necrotic and often fall out leading to a shot hole appearance. Similar sunken lesions on the veins develop and form pits along the midribs. In severe outbreak, anthracnose lesions coalesce and leaf tissues turn brown and may result in entire crop loss.

**Host range:**

Commercial cultivars of lettuce (*Lactuca sativa*) as well as wild species including *L. serriola*, *L. scariola* and *Cichorium endivia* have been reported as hosts.

**Disease dispersal:**

The pathogen is able to survive in infested debris. Microsclerotia have been reported as source of inoculum and can survive in the soil as long as 4 years. Rain, free water, splashing water and cool wet weather are important in dispersal of fungal propagules and conidia on the lower leaves to initiate the disease. Because the pathogen is favored by leaf wetness, cool conditions, and high humidity anthracnose may spread on the lettuce grown in winter and early spring in Western Australia.

**Management and control:**

Cultural practices and sanitation are recommended for reduction of primary inoculum and disease dispersal. Crop rotation with non-host plants, ploughing and burying of infested debris reduce the carryover of the inoculum in the soil. Sprinkler irrigation should be avoided or operated in the afternoon to minimise wetness period of the plant canopy. Destruction of wild lettuce and other related hosts have been suggested for reduction of sources of fungal inoculum. Resistant cultivars are recommended, however, known resistant cultivars are limited. When conditions favour disease development, application of registered fungicides may be economically justified.

**Further Reading:**

- Galea and Price (1988) *Plant Pathology* **37**, 54-63
- Parman *et al.* (1991) *Australasian Plant Pathology* **20**, 103-107
- Sutton *et al.* (1986) *Transactions of the British Mycological Society* **86**, 620
- Wicks *et al.* (1994) *Australian Journal of Experimental Agriculture* **34**, 277-83

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