

The leaf spot fungus, *Passalora ageratinae* Crous & A.R. Wood, was released as a biological control agent against Crofton weed (*Ageratina adenophora* (Spreng.) R.M. King & H. Rob.) infestations in South Africa in 1987. Initially two introductions were made, the first in Stellenbosch (Western Cape) in December 1987, and the second at two sites in Pietermaritzburg and Cedara (Kwazulu-Natal) in January 1988. Later the fungus was also introduced into the Magaliesberg (North West), and has since spread throughout the range of the weed.

DESCRIPTION

This fungus causes angular brown spots of dead tissue on both sides of leaves (i). These spots are 2–8 mm in diameter, and the edges are usually darker than the centre. Typically, the spots occur on the lowest leaves on stems, and can become confluent (ii). Under moist conditions, tiny felt-like grey/brown growths can be seen on the spots. These are groups of spore-producing structures that emerge from the dead tissue, like tiny unbranched shrubs. Each “stem” is brown and approximately 0.015 to 0.07 mm long and 0.004 mm wide (iii) (scale bars = 0.05 mm). The spores are cylindrical and straight, approximately 0.03–0.07 mm long and 0.004 mm wide, and smooth and pale brown. They typically are one to three celled, and are produced in chains (iv) (scale bar = 0.02 mm).

LIFE CYCLE

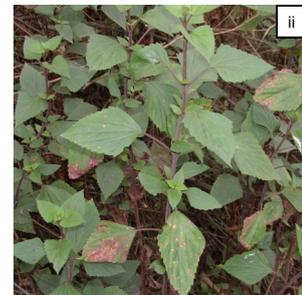
Spores germinate between 10 and 30°C, but optimally at 20 to 25°C, which is also the optimum temperature for growth. Spores require freely available water (dew or rain on leaves) for germination. Under ideal temperatures a minimum of 8 hours of available water is required for germination, although at least 18 hours is optimal. The spores germinate on the leaf surface, and grow over the leaves for up to 5 days. When the growing fungus comes across a stomatum (breathing pore in the leaf) it grows into the stomatal opening and infects the leaf. Light coloured spots develop 2-3 weeks after infection, and become brown by 5 weeks.

DAMAGE TO PLANTS

When sufficient infections occur on a leaf, it will senesce (die off) early and drop off the plant. Visually there appears to be little effect on mature plants, but seedlings are killed rapidly.

IMPACT ON CROFTON WEED

Although infections are common and widespread, there appears to be little impact on mature plants other than early leaf drop and an inhibition of side-shoot development. Despite this, the spread of the weed appears to have been slowed in wetter parts of both South Africa and Australia. However, it is still spreading rapidly in dryer parts such as the Magaliesberg and, as a result, additional biological control agents are being sought.



environmental affairs

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