

Black rot

What is Black rot?

Black rot (*Guignardia bidwellii*) is a fungal disease of grapevines that can infect all green tissues of the vine, including the fruit. Symptoms are most evident on leaves during spring, on leaves, stems and fruit during summer and then on stems and fruit during autumn and winter months. Black rot can result in complete crop losses in warm and humid grape growing regions.

What should I look for?

On leaves, look for minute, round, reddish-brown spots which appear then enlarge to a maximum diameter of 3-7 mm. As the spots enlarge, they develop black interveinal margins and greyish-tan to reddish-brown centres that are most apparent on the upper leaf surface. Pycnidia (spore bearing structures) develop in the centre of these necrotic spots and appear as small, blackish pimples.

On shoots, stalks and tendrils, look for lesions that are purple to black, sunken, and typically oval or elongated. Pycnidia are commonly observed throughout these lesions with numerous cankers resulting in blighting of the growing tips of shoots. As the canes grow, the bark tends to split along the length of the lesion.

On the fruit, look for brown spots that have a dark ring with a sunken centre which expands to involve the entire fruit. Individual fruit then rots and eventually shrivels into a black, wrinkled mummy. As with leaf spots and stem lesions, black rot mummies are covered with pycnidia.

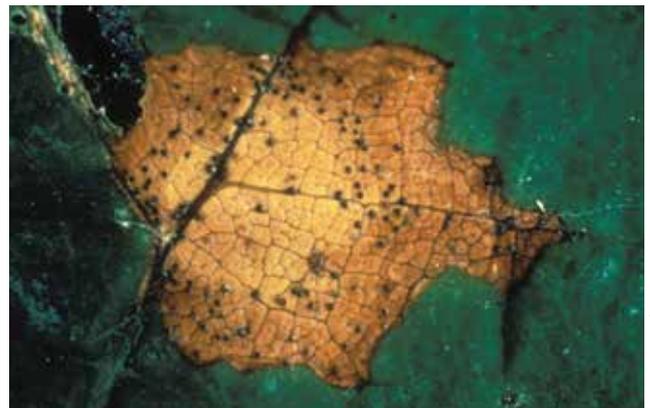
What can it be confused with?

Black rot symptoms can be confused with Black spot, which is caused by the endemic fungus *Elsinoë ampelina*. Leaf lesions of both diseases look similar from a distance, but Black spot lesions do not contain the small black spores (pycnidia) which are typically found in Black rot spots and lesions.



Black rot necrotic lesions on a grapevine leaf

Matthew Zitek, Texas A&M Agrilife Extension Service, www.Bugwood.org



Black rot necrotic lesion with pycnidia

University of Georgia Plant Pathology Archive, University of Georgia, www.Bugwood.org



Black rot lesions on stems appear sunken and are elliptical to elongated in shape

Clemson University - USDA Cooperative Extension Slice Series, www.Bugwood.org



Despite this, the range of symptoms caused by *G. bidwellii* is quite distinguishable from symptoms caused by other pests.

How does it spread?

Black rot can be spread through water and airborne spores, as well as through infected propagation material and fruit. Spore production, dispersal, infection and continued disease development is favoured by warm and humid conditions, summer rainfall and persistent dew. Black rot can overwinter in canes, tendrils, leaves and fruit on the grapevine and on the ground for up to two years, which provides a source of inoculum for the following season.

Where is it now?

Black rot is endemic to North America, but has since spread to Asia, Africa, Central and South America and Europe via contaminated propagation material.

How can I protect my vineyard from Black rot?

Only source high health status (preferably certified) plant material from reliable and accredited suppliers. Check your vineyard frequently for the presence of new pests and investigate any sick grapevines for unusual symptoms. Make sure you are familiar with common grapevine pests so you can tell if you see something different. Keep records of anything unusual and ensure all staff and visitors adhere to on farm biosecurity and hygiene practices.

If you see anything unusual, call the Exotic Plant Pest Hotline



Black rot necrotic lesions on leaves and stems

M. Sosnowski, South Australian Research and Development Institute



Early symptoms of black rot rings on a grape bunch

M. Sosnowski, South Australian Research and Development Institute



Black rot causes mummified grape bunches with pycnidia present on the berries

M. Sosnowski, South Australian Research and Development Institute

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