

LEAF AND FLOWER SPOTS

Bacterial

Pseudomonas bacteria can produce leaf spots, often with a brown centre and a darker margin. It is not uncommon for spots to be angular in shape, following the outline of affected cells. The spots are sometimes surrounded by a yellowish halo. Under microscopic examination, streams of bacteria can usually be seen oozing from these lesions. The spots usually appear as streaks or stripes on monocotyledonous plants. For example on grasses and alliums. When numerous spots join to form a large dead area, the disease is referred to as blight or blotch.

Look for angular-shaped leaf spots. This often distinguishes a bacterial leaf spot from a fungal one.



Pseudomonas Blight on Cherry



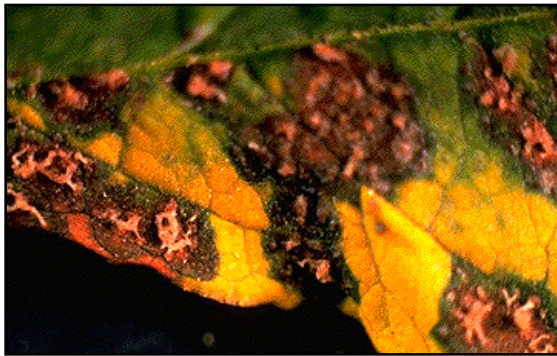
Pseudomonas syringae on Magnolia

Fungal

Many species of fungi cause various spots on leaves and flowers. Typical leaf spots include necrotic lesions, often with a brown or white centre and a darker margin. When the spots are numerous they may coalesce to form large dead areas, and the disease is then referred to as a blight, blotch, or scorch.

Life Cycle

Fungal spores usually spread through the air, in splashing water, or on equipment. Wet conditions favour germination of most fungi, with some preferring warm conditions and others cool conditions. Proper identification of the fungus is necessary for selection of appropriate control procedures.



Septoria on *Osoberry*



Septoria Leaf Spot of *Populus*

J. Matteoni

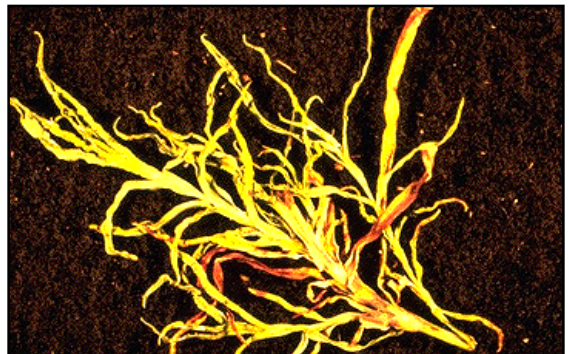


Alternaria on *Tagetes*

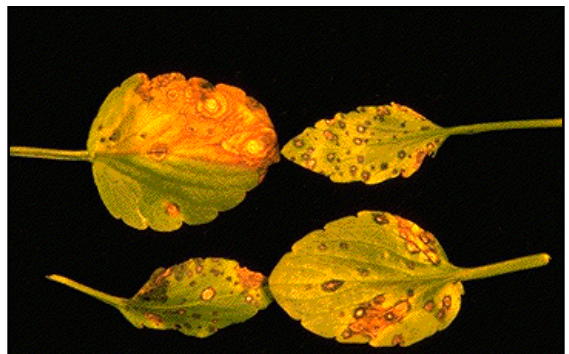
J. Matteoni



Botrytis on *Rosa* Flowers



Bacterial Leaf Spot of *Dianthus*



Ramularia Leaf Spot of *Viola*

Hosts

Almost all flowering plants are susceptible to fungal leaf and flower spots.

Acer – Anthracnose Leaf Spot

(*Kabatiella apocrypta*, *Discula* spp.)

Spots appear along veins, in blotches or as blights. Leaves take on a scorched appearance and early defoliation may occur in severe cases. It usually appears during wet springs.

Aesculus - Leaf Blotch (*Guignardia aesculi*)

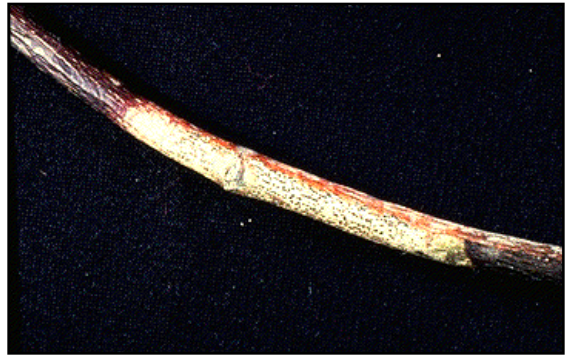
Discoloured and water-soaked blotches appear in varied sizes on leaves. Spots become pale reddish-brown with a bright yellow marginal zone, developing small black fruiting bodies in the centre. Leaves may deform, become brittle, and drop. The fungus overwinters in dead leaf tissue. Symptoms are very similar to leaf scorch, an environmental disorder.

Andromeda - Red Leaf Spot (*Exobasidium vaccinii*)

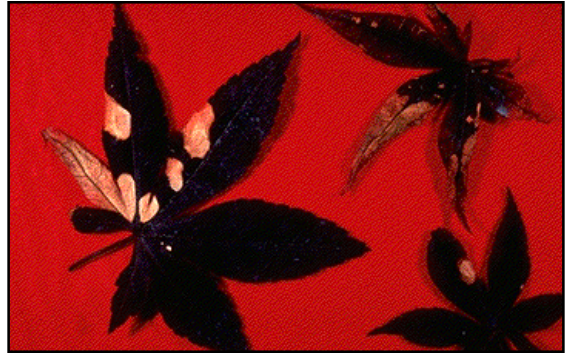
Red circular spots appear on the upper side of leaves followed by defoliation. Symptoms usually appear in the early spring, although infection probably occurred during the winter rains.



Exobasidium Leaf Spot on *Andromeda*



Kabatiella (Anthracnose) on *Acer* (Stem)



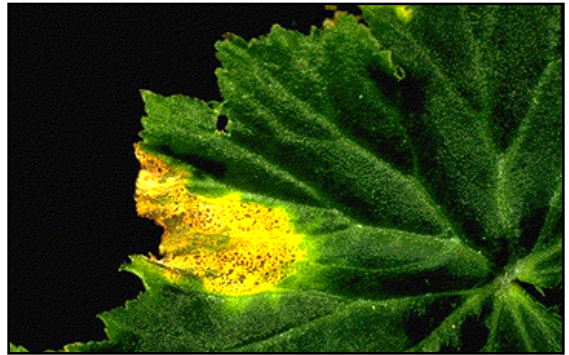
Kabatiella (Anthracnose) on *Acer* (Leaf)



Guignardia Leaf Blotch of *Aesculus*

Begonia - Bacterial Leaf Spot (*Xanthomonas campestris* pv. *begoniae*)

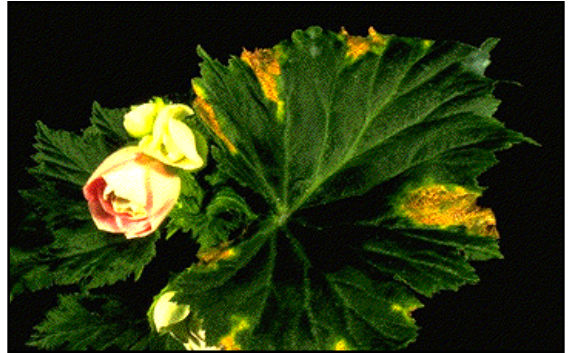
Small blister-like, yellow to purple spots appear, and eventually run together, causing a blotched appearance. Spots, on leaf surfaces or margins, may be roughly circular or V-shaped, oozing bacterial slime that dries up and turns brown. Petioles can be infected in severe cases, resulting in wilting and death of the plant.



Xanthomonas on *Begonia*

Chrysanthemum - Bacterial Leaf Spot (*Pseudomonas cichorii*)

Water soaked spots appear sunken with concentric circles, turning dark brown to black. Infection occurs through wounds, usually in wet conditions.



Xanthomonas on *Begonia*

Cornus - Anthracnose Leaf Spot (*Discula* spp.)

Large wedge-shaped blotches appear on leaves in spring. In severe cases defoliation and twig cankers may occur. If repeated for several years, trees may weaken and eventually die.

Cornus - Leaf Spot (*Septoria* spp.)

Brown, angular leaf spots, often limited by veins, becoming greyish or nearly white in the centre with purplish brown margins. Warm, moist weather conditions favour growth of fungus, with symptoms occurring after two months. Spots usually occur after July, becoming worse later in the season.

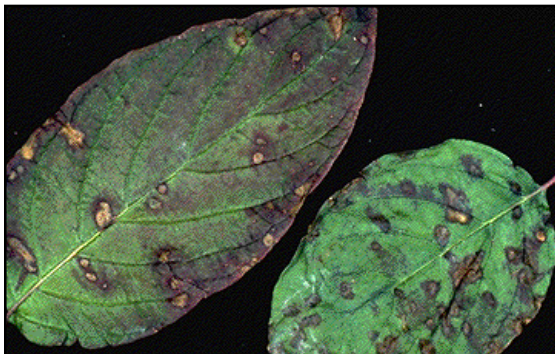


Pseudomonas cichorii on *Chrysanthemum*



Anthracnose of *Cornus*

A.B. Broadbent



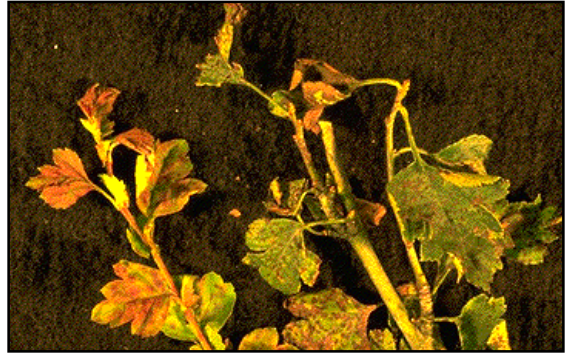
Septoria Leaf Spot on *Cornus*



Pseudomonas cichorii on *Chrysanthemum*

Crataegus - Leaf Blight (*Diplocarpon* spp.)

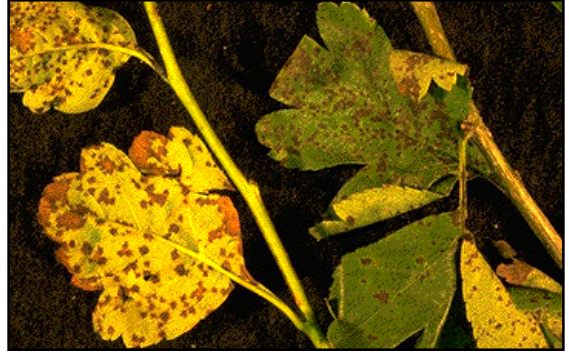
In cool wet summers, minute dots appear on leaves, stems, and veins in spring, becoming brown to grey and 2-5 mm in diameter. Spots eventually cover the entire leaf, causing defoliation by midsummer. Dark blister-like structures form on the spots after death of tissue, releasing spores that overwinter on fallen leaves and on dead plant material.



Crataegus Leaf Blight (*Diplocarpon* spp.)

Dianthus - Leaf Spot (*Alternaria dianthi*)

Blighting occurs at leaf bases and around nodes. Infection appears on leaves as ash-grey spots that become dark brown or black. May also cause the development of small purple spots surrounded by yellow areas.



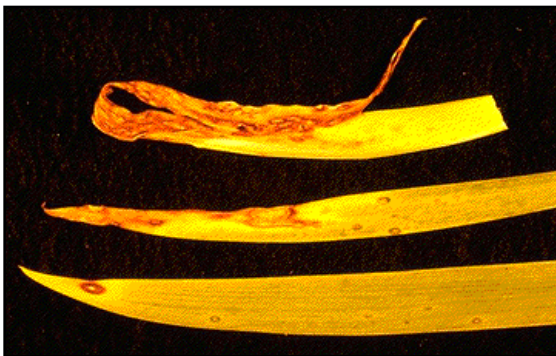
Crataegus Leaf Blight (*Diplocarpon* spp.)

Forsythia - Anthracnose Leaf Spot (*Discula* spp.)

Greenish-brown to dark brown spots that resemble frost injury appears on young tissues in spring. Eventually, brown or tan blotches are seen on distorted leaves, and shoots may become blighted. In severe cases, defoliation or dieback may occur.

Iris - Leaf Spot (*Mycosphaerella macrospora*)

Small water-soaked spots appear on leaves, and surrounding tissue often turns yellow. Spots enlarge and lengthen up to a centimetre or more, developing grey centres. They may develop reddish-brown borders. Under moist conditions, a thick olive-brown mass of spores forms in the centre of the lesions.



Cladosporium of Iris



J. Matteoni

Dianthus with *Alternaria*



Fraxinus with Anthracnose

Mahonia - Leaf Spot (*Phyllosticta*)

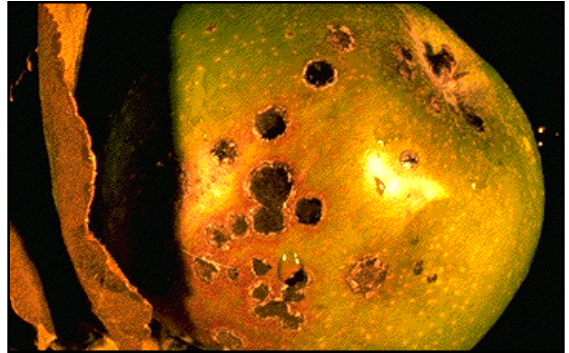
The fungus causes small red circular spots that become tan coloured in the centre. This fungus overwinters in fallen leaves. The disease is encouraged by wet weather in spring and in early summer, building up if these conditions occur for a number of years in a row.



Mahonia with *Phyllosticta*

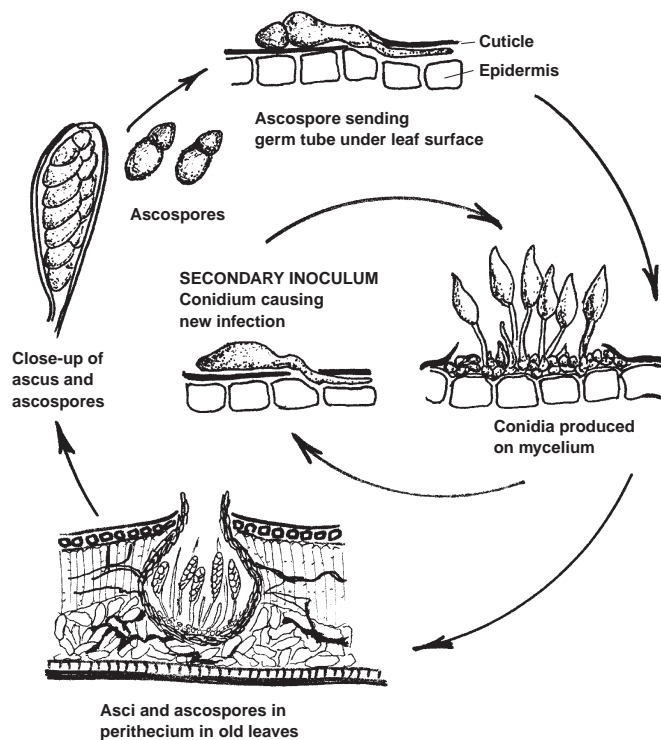
Malus - Scab

This fungus causes shedding of blossoms, and scab on leaves and fruit. Scabs begin as pale water-soaked spots which become velvety green or smokey, later taking on an olive shade and ultimately a brownish-black colour. Diseased leaves can be curled and distorted. New infections may occur whenever there is a moderate to prolonged rainy period.



Scab on *Malus*

Leaf Spot Disease Life Cycle – Scab



Apple Scab

Quercus - Anthracnose Leaf Spot (*Discula* spp.)

Burning or shrivelling of leaves and shoots, green leaves with large brown areas along veins, and small brown spots on mature leaves. Spots eventually dry and become papery and tan in colour. Wet springs with temperatures from 16 to 28°C favour the disease. Defoliation may occur in severe cases.



Anthracnose (*Discula*) of *Quercus*

Pelargonium - Bacterial Leaf Spot

(*Pseudomonas cichorii*)

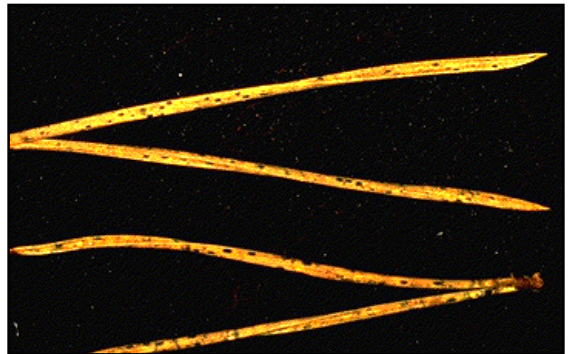
Sunken spots with raised, tan centres on upper and lower leaf surfaces and flower stalks. Centres drop out and cause a shot hole effect. Spots may have dark margins and a yellow halo, becoming water-soaked as they enlarge during wet periods. Leaf spots eventually turn dark brown to black.



Pelargonium with *Pseudomonas cichorii*

Pinus - Needle Cast (*Lophodermium seditiosum*)

Spores are released from August to November during periods of rain. Slightly bulging, football shaped spots appear in late autumn to early spring, becoming brown with yellow margins. Needles turn yellow and then reddish brown as spots merge. Foliage on lower branches is usually most damaged with dead needles falling in mid-summer.



Lophodermium Needle Cast of *Pinus*

Populus - Leaf Spot (*Marssonina populi*)

This fungus overwinters on twigs and fallen leaves, infecting leaves and green twigs in spring. Infection results in premature defoliation, dieback and lost growth. Spots are bronze to chestnut-brown, 2 to 5 mm in diameter merging into blotches that may cover the entire leaf. The upper surface of the spots are dotted with greyish white, raised swellings. Infections develop during periods of wet weather when leaves emerge in spring.



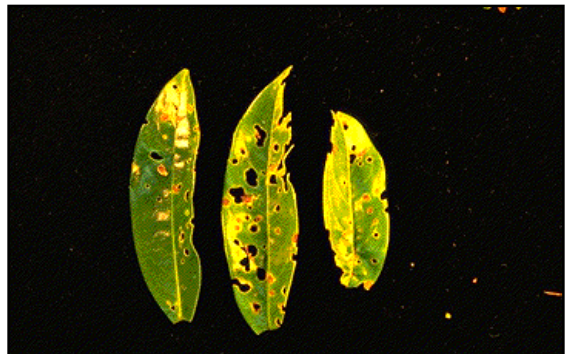
Marssonina populi of *Populus*

S. T. Koike

Prunus laurocerasus - Leaf Spot, Shot Hole

(*Pseudomonas syringae*)

The bacterium, *Pseudomonas syringae*, and several fungi can cause leaf spots that may fall out, giving the leaf a shot-holed appearance. Identification of the causal agent is often difficult, but may be necessary for selection of the proper chemical control. (See blights.)



Cherry Laurel Shothole

***Pseudotsuga* - Needle Cast (*Rhabdocline pseudotsugae*)**

The fungus causes yellow spots on current season needles in early fall which enlarge the following spring and turn into purplish brown bands in May or June. Spores are shed from these needles and infection of the newly opening needles occurs. The old needles fall off leaving a single year's needles on the tree. Cool, wet weather promotes infection.



Douglas Fir Rhabdocline

***Rhododendron/Azalea* - Leaf Spot (*Pestalotiopsis sydowiana*)**

The fungus causes dead or dying spots, blotches, tips or margins on leaves, as well as twig dieback and cankers on older growth. Often associated with weakened, dead, or injured plant parts, rarely invading healthy tissue. Infected areas are brown, turning silver grey on the upper surface; dead spots are covered with small black spore masses.



Rhododendron with *Pestalotiopsis*

R. Byrther

***Rosa* - Black Spot (*Diplocarpon rosae*)**

Black or brown spots, 2 to 12 mm in diameter, appear on upper leaf surfaces. Spots are circular with ragged, feathery margins, a yellow halo and small black fruiting bodies. Raised, purple-red blotches develop on first year canes. Overwintering occurs on young canes, with infection occurring in wet, humid conditions. Severely infected leaves turn yellow and drop.



Rhododendron with *Pestalotiopsis*

R. Byrther

***Syngonium* - Bacterial Leaf Spot (*Xanthomonas campestris*)**

Causes lesions on all parts of leaf blade except mid-rib. Appears first as tiny, yellowish water-soaked areas that turn tan or reddish as they enlarge. Mature lesions are black and surrounded by a bright yellow border. May become systemic, moving into tissues and causing older leaves to turn yellow as well as causing leaf spots.



Black Spot of *Rosa*



Syngonium with *Xanthomonas*



Black Spot of *Rosa*