

Plane Tree Anthracnose (*Gnomonia Veneta*)

Symptoms

Anthracnose is a fungal disease that affects *Platanus* species worldwide, it causes foliar and twig damage in early and mid season.

The disease alters twig and stem growth for the entire season, terminal growth tips die resulting in twiggy lateral growth.

New shoots appear blighted and distorted, leaves appear scorched, terminal growth tips and small branches develop cankers and may die.

If left untreated leaves become unsightly, leaves appear blotched and necrotic and fall prematurely, distorted tree growth results in a decline and diseased appearance, severely altering aesthetics and amenity value.

Susceptible species include the London Plane tree (*Platanus Acerifolia*), and the American Sycamore. (*Platanus Occidentalis*) but the Oriental Plane (*Platanus Orientalis*) is highly resistant.



Blighted and scorched growth tips early in the season initiate lateral growth which is often twiggy and distorted Reference image *P. Occidentalis* by Joseph O'Brien, USDA Forest Service.

Twig lesions and subsequent necrosis eventually girdle twigs, kill dormant buds and retard growth Reference image Robert L. Anderson, USDA Forest Service.



Cankers and advanced lesion girdle and distort stem growth. Cankers are over wintering repositories for mycelium and the perithecia that produce spores and new infections during the following Spring. Reference image by: Steve Parton Environmental Tree Technologies.

Disease Cycle

The fungus overwinters in fallen infected leaves from the previous season, fruiting bodies or *Perithecia* form, these later produce ascospores. Stem cankers are another repository for overwintering *mycelium* which also produces perithecia, ascospores and conidia. During spring *ascospores* are ejected from the perithecia starting new primary infections. Moist humid conditions aid its spread, symptoms such as leaf and stem lesions begin to develop.



Before: At Treatment April 30th 2007
 Twig Cankers and lesions cause terminal shoot die off resulting in excessive lateral growth. Both cankers and fallen leaves are a source of new infections that are spread by rain splash and wind during the early part of the growth season. Reference image: Steve Parton Environmental Tree Technologies.



After: Treatment December 4th 2007
 Healthy growth with No Sign of Leaf Scorching. Both close-up images are of the same tree and position aligned. Disease peaks from early November and on through December, in some cases trees are completely defoliated by this time. Reference image: Steve Parton Environmental Tree Technologies.

Treatments Options.

Canopy spraying

An annual treatment usually undertaken at partial or full leaf expansion, **effective for one season.**

Micro injection

Available All Year Round, systemic fungicides are injected directly into the active xylem which transports the chemistry within, environmentally safe, persistent and effective **for two more years.**

Bark Stem Application

Available All Year Round, systemic fungicides are applied directly to the trunk which absorbs and translocates the chemistry, environmentally safe, persistent and effective **for two more years**



Before: November 9th 2003

Tree injected with systemic fungicides at the symptomatic stage, note that the canopy is thin and partially defoliated due to anthracnose and a disease complex.

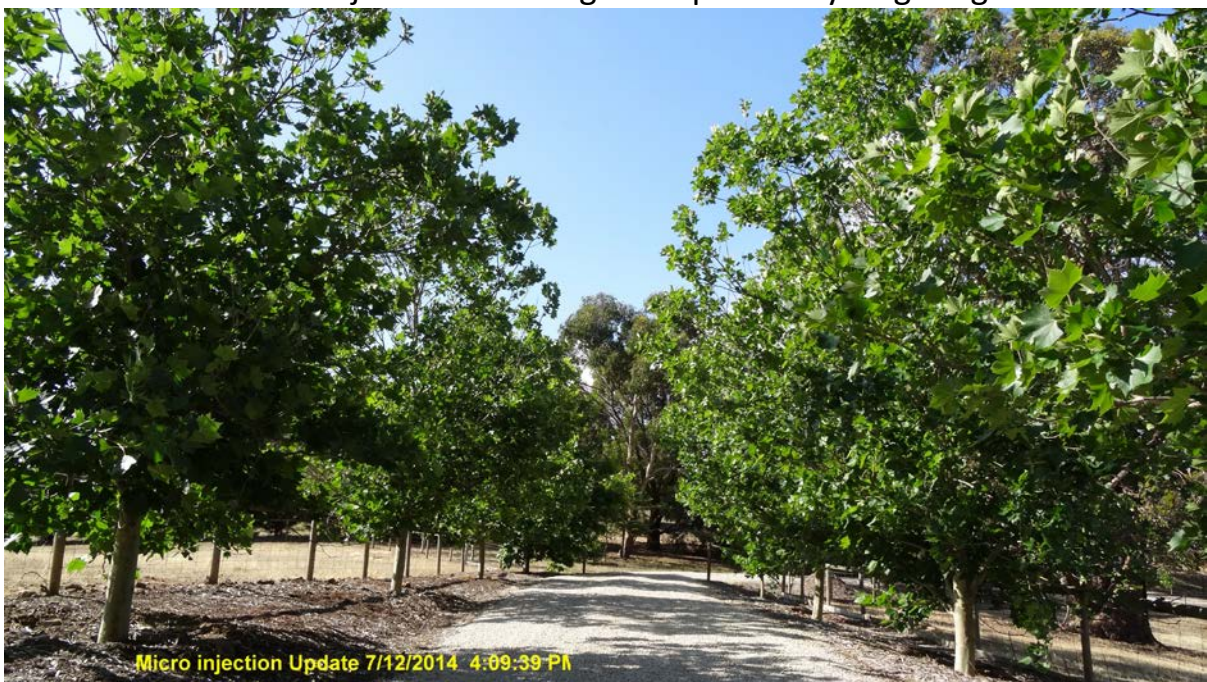
After: November 10th 2004.

Tree injection treatments are active for two or more years, ensuring a recovery in canopy density and improved tree health over consecutive growth seasons.

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At treatment: Micro injection of a fungicide specifically targeting Anthracnose.



Post Treatment: Effective control can be achieved by a single application every two years, treatments can be tailored to include sycamore lace bug, fruit tree borer by the inclusion of insecticides.

Other Diseases and Treatments.



Anthracnose is often associated with *Phytophthora Cinnamomi*; typical symptoms are sunken trunk lesions, flaky bark and deep cracks. This disease complex is often fatal if left untreated, treatments involve tree injection, and response to treatment is slower or not effective in worse cases. Early treatments are the key in effective control as vascular mobility is a requirement for effective fungicidal distribution. Multi season systemic control of Anthracnose, Phytophthora and Powdery Mildew can be achieved in a single application.



Before: April 30th 2007
Trunk injected with Systemic Fungicides late in the season, this tree should still have a full canopy, but disease has caused premature defoliation.



After: December 4th 2007
Effective Anthracnose control at disease peak; Autumn applications allow adequate time for the systemics to disperse prior to Spring.

Powdery Mildew (*Erysiphe platani*)

Common in *Platanus* species worldwide, it is a fungal disease that affects young leaves and shoots, a powdery white mat of mycelium and spores contorts new growth, buds and twigs are desiccated causing them to die.



Leaf lesions on *P.Orientalis* which is highly susceptible, *P.Acerifolia* is moderately susceptible and *P.Occidentalis* is the least susceptible to this fungal disorder. Reference image *Department of Plant Protection, Qingdao Agricultural University, Qingdao 266109, China.*



Powdery mildew lesions surround hail injuries on *Platanus Acerifolia*, Sydney N.S.W. Adult Sycamore Lace Bug and nymphs are now a serious problem in NSW, control of both insect and fungal disorders can be achieved with tree injection of systemic insecticides and fungicides in a combination.

Images: Steve Parton, Environmental Tree Technologies



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