

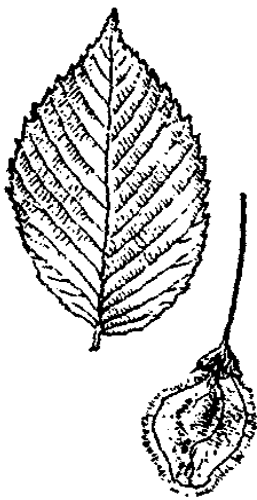
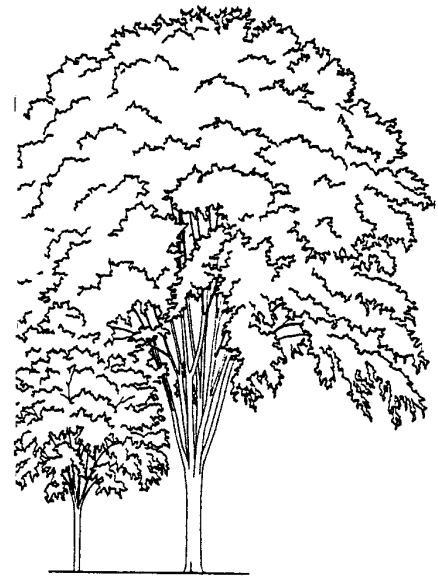


Elm

Elm trees are grand, large shade trees which will grow well even in the most severe urban situations. They transplant easily and grow very rapidly if conditions are at all favorable. Healthy leaves are lustrous dark green in the summer turning yellow in the fall.

Elms grow best in full sun but are tolerant of moderate shade. They have a great tolerance to soil pH, growing well in the range of 5.5 to 8.0. They are tolerant of compacted clay soils, well drained sandy soils and most soils in between. They grow best in nutrient rich, moist well drained soils.

The most common and well know disease is Dutch elm disease (DED). This is a fungal disease which is transmitted by twig or trunk feeding beetles and root grafts. Dutch elm disease plugs the vascular system of the tree causing a wilt which is often seen first in the upper branches (flags) and may move throughout the entire tree within a year.



Elm yellows is another serious disease of elms which causes yellowing, thinning, premature leaf drop and eventually death of infected trees. When leaves appear white during the summer the cause is a powdery mildew fungus. Black spots and premature defoliation are caused by another fungus. Scorching or yellowing of the leaf margins is caused by a bacterial infection of the woody tissue. Symptoms are often confused with DED, however, bacterial leaf scorch symptoms are seen in late summer and the leaves drop rather than die and hang onto branches.

Elms are often skeletonized and defoliate by elm leaf beetle. This insect eats the lower surface of leaves and holes in the leaf resulting in browning of the leaves. There are several scale insects which attack elm, elm scruffy scale and elm lecanium are two of the most common.

They insert thier mouthparts into the tree and suck the sap out. Aphids are often found feeding on leaves. If they are in high levels, foliar damage can occur.

Recommended Monitoring for Elm

Timing	Treatment
Winter	Prune to remove dead, dying and diseased and interfering limbs. Remove wood from area to reduce bark beetle populations.
Late Winter	Apply horticultural oil to reduce populations of overwintering insects.
Mid Spring	Apply protective fungicide for black spot if tree has history of disease. Inspect for DED flagging.
Late Spring	Repeat black spot treatment. Monitor and treat elm leaf beetle. Inspect for DED flagging.
Summer	Monitor for DED, elm yellows, bacterial leaf scorch, leaf feeding insects and powdery mildew. Treat as needed. Pruning bacterial leaf scorch effected limbs out when discovered may locally eliminate the disease. Trunk inject fungicide to reduce chances of severe DED infections.
Fall	Systemically treat for elm leaf beetle if applicable. Remove fallen diseased leaves

See Bartlett's *Pest Management Recommendations* for more details on a complete DED management program.

Trees may be treated with DED protectant fungicide and systemic insecticide for elm leaf beetle at any time when leaves are present in most states.