Tree Diseases III
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UNIVERSITY OF ILLINOIS COLLEGE OF AGRICULTURE
COOPERATIVE EXTENSION SERVICE
and VOCATIONAL AGRICULTURE SERVICE

TREE DISEASE NO. 3
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TREE DISEASES III

1. **Cytospora Canker of Poplar**, caused by the fungus *Cytospora chrysosperma*, annually kills many thousands of low-vigor Lombardy and Simon poplars. Young cankers are round to irregular and slightly sunken in the smooth bark of branches and trunks. The enlarging cankers girdle and kill affected stems. The bark over older cankers is brown, sunken, roughened, cracked, and sprinkled with minute, black, fungus-fruiting bodies.

2. **Nectria Canker of Maple** is caused by the fungus *Nectria cinnabarina*. The fungus attacks many weakened hardwoods, killing twigs and small branches. Cankers usually develop around bud scars, bark wounds, twig stubs, or limb crotches. Young cankers are small, brownish and somewhat round. Later, the center becomes sunken and black with edges raised above the surrounding bark.

3. **Nectria Canker of Honeylocust**, caused by *Nectria cinnabarina* (2) may cause dieback of twigs and branches. A trunk canker on a young, weakened tree may cause girdling and death. The fungus invades through wounds.

4. **Nectria Canker of Elm**, caused by *Nectria galligena*, produces dieback of twigs and branches on many hardwoods. Small cankers resemble those of *N. cinnabarina* (2, 3). Tissues under the black cankered bark of older lesions are dead, spongy, and flake or fall out revealing the dead wood and concentric ridges of callus tissue around the canker cavity.

5. **Bacterial Canker of Sweet Gum**, caused by a bacterium, forms around a wound. The bacteria, confined to the cambium and inner bark, ferment the sap and produce gas. The frothy sap is forced out through wounds and flows down the bark. Bacterial action kills cambial areas resulting in cankers.

6. **Hypoxylon Canker of Aspen**, caused by the fungus *Hypoxylon pruinatum*, is very destructive, especially to young aspens and poplars growing on poor sites. Small, somewhat sunken, yellow to reddish brown cankers become mottled, gray, and marked with vertical cracks before the bark sloughs off to expose the black, crumbling cortex underneath. Older cankers, up to several feet long, are rough, blackened, and cause trunk distortion before girdling and death occur.

7. **Smooth Patch of White Oak** is caused by the fungus *Aleurodiscus oakesii*. Rough outer bark sloughs off leaving smooth, round to irregular, light gray depressed areas. The fungus produces small, cream-colored, cup-shaped, somewhat leathery fruiting bodies.

8. **Polyporus sulphureus** causes a red brown heart rot in many living hardwoods and conifers. The annual conks are soft, fleshy, shelf-like in overlapping clusters, and a brilliant sulfur color below. Like other wood rotters, it enters through wounds and dead branch stubs. Decay usually develops slowly and may not shorten a tree's life.

9. **Ganoderma Rot of Honeylocust**, caused by the fungus *Ganoderma lucidum*, is a stringy white heart rot of the lower trunk and buttress roots of many woody plants. As wood decays, conks 10 inches or more across and brownish red and shiny (lacquered) above form at the soil line.

10. **Island Chlorosis of Hackberry**, of unknown cause, appears in leaves as yellowish green, bright yellow or cream-colored areas of variable shape bordered by small veins. The island-like blotches may merge to form large irregular areas. Apparently the potato leafhopper is involved in disease development through feeding activity or transmission of an infectious agent.

11. **Pine Wilt Disease**, caused by the pinewood nematode (*Bursaphelenchus xylophilus*), is widespread, especially on Scots, Austrian and jack pines over 10 years old. Entire trees suddenly decline and die within a few weeks or months, usually during the growing season. The needles turn light grayish green, then yellowish green, yellowish brown, and finally brown. On longer needled pines, the needles wilt over the entire tree. The nematode is disseminated by several wood boring sawyer beetles (*Monochaums* spp.). Bluestain fungi (*Ceratocystis* spp.) rapidly invade dead and weakened pines, serve as an alternate food source for the nematode, and are intimately involved in the disease cycle.

12. **Lightning Damage** is common, particularly on tall, isolated trees. Trees may have no permanent damage, show streaks of split or peeled bark and wood that extend to the ground line, or be completely shattered.

13. **Cold Injury to Oak Leaves** and other hardwoods results in holes or tears. Later appearing foliage is often normal.

14. **Winter Injury to Mahonia** and other broadleaf evergreens appears as a brownish scorching of the leaf margins. Injury is caused by drying winter winds and sun and is most common on exposed plants growing near the northern limit of their hardiness.

15. **Winter Injury to Juniper** and other evergreens is common on the south or southwest sides in late winter and spring. The foliage turns reddish brown and dies back. Injury results from drying winter winds and bright sun when plants are dormant.

16. **Frost Damage to Spruce**. Shoot tips suddenly turn reddish brown and collapse following sudden freezing temperatures after growth starts in spring. Trees growing in hollows and valleys are damaged more than those on higher ground.

17. **Frost Crack on London Plane** and other hardwoods occurs during wide temperature fluctuations in winter. The bark and wood, usually on the south or west side, separate vertically. The crack, which may extend radially to the tree's center, may reopen each winter, providing entry for wood-decay fungi. Young, isolated, vigorous trees are most susceptible.

18. **Root Strangulation** occurs when plants are kept too long in a container. When transplanted, and the roots are **not** spread out naturally in a hole twice the diameter of the container, girdling can result from roots winding tightly around the trunk. This condition may gradually weaken and even kill trees.

19. **Iron Chorosis of Sweet Gum** develops on terminal leaves from a lack of or unavailability of iron (e.g., soil pH of 6.6 or above). Young leaves develop interveinal yellowing. If severe, affected leaves become scorched and tend to drop early.

20. **Iron Chlorosis and Leaf Scorch of Oak**. Iron chlorosis (19) is common on pin oak, spreading from younger leaves to lower and older parts of a tree. Leaf scorch, widespread on trees growing in unfavorable sites, commonly follows prolonged periods of dry windy weather. Irregular, yellow, brown, or bronze areas develop between veins or along the margins and tip. Affected leaves may wither and turn brown. If chlorosis and/or leaf scorch are severe, shoot growth may be stunted and die back.

21. **2,4-D Injury to Redbud** and other plants is cosmopolitan. Leaves are thickened, cupped, twisted or rolled, appear boat-shaped, or curl into ram's horns. Leaf veins are prominent and yellow; margins wavy with sawtooth edges. Symptoms are likely within a few days after exposure to fumes or spray drift up to ½ mile or more.

22. **Fluoride Injury to Poplar** and other broadleaved plants appears as a yellow mottle or blotching to a wavy, reddish brown or tan scorch at the leaf margins and tip. Growth suppression and defoliation may also occur. Fluorides are produced especially by glass, aluminum, pottery, brick, ceramic, and phosphate fertilizer industries, refineries, and metal ore smelters.

23. **Ozone Injury to White Pine** results in yellow to brown mottling, tipburn, or yellow to brown flecking and banding of the needles. Susceptible white pines are stunted to severely dwarfed and chlorotic. Ozone is produced when sunlight reacts with nitrogen oxides and hydrocarbons from burning refuse, coal or petroleum fuels–especially exhaust gases from internal-combustion engines.

For chemical and cultural control suggestions, and other control measures, consult the Extension Plant Pathologist at your land-grant university, or your county extension office.

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