

Tree Diseases

Bob Banks

#1 Annosus Root Rot

Conks form on the base of diseased or dead conifers especially southern pines, loblolly and slash pines.

Rubbery tan to brown on top and white porous on bottom. Crown may yellow or turn red and die. Fungus may spread through the root system. Control with borax treatment of newly cut stumps.



#2 black knot



- the presence of thick, black, irregular swellings on the twigs
the swellings are normally not noticed until the winter of the second season of infection. galls on the twig (0.5 to 12 in.) in length
galls can result in leaf wilt, leaf, shoot and branch death, and even death of the tree in young
- Plum, cherry and chokecherry
- Small brown galls on branches

#3 Cedar Apple Rust

Golf ball size galls formed on junipers spread to eastern redcedar with little harm to tree. It cannot spread without apple trees. Red tendrils or "horns" forms on branches. With apples leaf spots form in the spring which produce spores with growth loss, reduced quality and quantity of fruit and death of tree. Prevention through resistant hybrids, spray galls on junipers and clean area of dead debris.



#4 Fusiform Rust

Infections occur on the main stem with death in 5 years. On older trees, branches are weakened and may break with wind. Species susceptible include loblolly and slash pine while longleaf and shortleaf are resistant. Oaks may also be a host. The orange fungus spores appear on the lower surface of the leaves. Spindle swellings or galls may form on the main stem and branches. Orange leaf spots are common. Sanitation thinning is only practical solution or resistant species.



#5 Hypoxylon Canker

Fungus causes canker on stressed hardwood trees. It structural weakens the trees causing hazards. Hundreds of small black fruiting bodies form under dislodged bark invading the cambium layer often through tree wounds. Spores are spread by the wind.



#6 Lichens

A fungus like white rot invades the cambium of hardwood trees. Premature death may occur in stressed trees. Most often harmless in small sections. Washing trees with soapy water or lime sulphur will remove lichens. To lessen dampness on lower limbs thin the canopy for drier conditions.



#7 mistletoe



- Mistletoe species grow on a wide range of host trees, some of which experience side effects including reduced growth, stunting, and loss of distal branches that bear individuals
All mistletoes **grow as parasites** on the branches of trees and shrubs



- Most mistletoe seeds are spread by birds that eat the 'seeds' Mistletoes **produce white berries**, each containing one **sticky seed (toxic to humans)**

#8 Neonectria canker



- the most common canker disease of hardwood trees. It seriously reduces the quantity and quality of forest products. This disease usually does not kill trees, but causes serious volume losses.
- It is common on yellow birch, black walnut, and sassafras. It also occurs on aspen, red oak, maple, beech, poplar, and birch.
- The fungus can be identified by the creamy white fruiting structures that appear on cankers soon after infection. It can also be identified by the pinhead sized, red, lemon-shaped perithecia near canker margins after 1 year

#9 oak leaf blister



- The fungus only infects young emerging leaf tissue in the spring the spots start out as small and inconspicuous, with quarter-inch lesions turning light green on young leaves. Cells in the spots multiply more than surrounding cells and result in a raised, blister-like buckling of the leaf later in the season.
- All oaks
- oak leaf blister and other leaf spot diseases will not kill a tree that is otherwise healthy.

#10 pine needle rust



- Needles turn partly or completely yellow. Severe infection causes needles to die, turn brown and fall off.
- Pines
- By early summer, these give rise to white tube-like spore producing structures which split open, releasing powdery orange spores.
- yellow to orange spots or bands appear on green needles in spring.

#11 powdery mildew



- powdery mildew rarely causes serious damage to its host. The disease can significantly reduce the ornamental value of plants grown for their appearance like roses
- Shrubs and hardwoods
- Powdery mildew appears as superficial growth on plant surfaces and is seen as white to gray powdery spots, blotches or felt-like mats on leaves, stems and buds. Infected plants
- may appear to be sprinkled with baby powder or covered in cobwebs.

#12 sooty mold



fungus itself does little harm to the plant; it merely blocks sunlight, and very rarely may stunt a plant's growth and yellow its foliage. Thus, sooty mold is essentially a cosmetic problem in the garden, as it is unsightly and can coat most of a plant in a matter of days or weeks.

ornamental plants such as [azaleas](#), [gardenias](#), [camellias](#), [crepe myrtles](#), pecan, hickory, fruit trees

it is a black, powdery coating adhering to plants and their fruit or environmental objects.

#13 Tar Spot

Mostly affect maples and some sycamores. Mostly cosmetic damage. Starts as yellow spots and progresses to tar like images. Fungicides can be used but not always necessary. Cleaning up dead or infected leaves may stem the spread of fungus. These should be burned. Spraying young trees may be effective as tree matures.



#14 witches broom



- Some common trees that develop witches'-brooms include oak (caused by powdery mildew), incense cedar (caused by a rust), hackberry (cause by powdery mildew and an eriophyid mite), and rose rosette (caused by a virus). Phytoplasmas cause witches'-brooms and bunch disorders on pecan, hickory, lilac, walnut, willow, dogwood, ash, honeylocust, peach, elm. Juniper, firs, hemlocks, and pines can also develop witches'-brooms in reaction to infestation from dwarf mistletoe.
- appear as a ball-shaped dwarf plant growing in a tree.

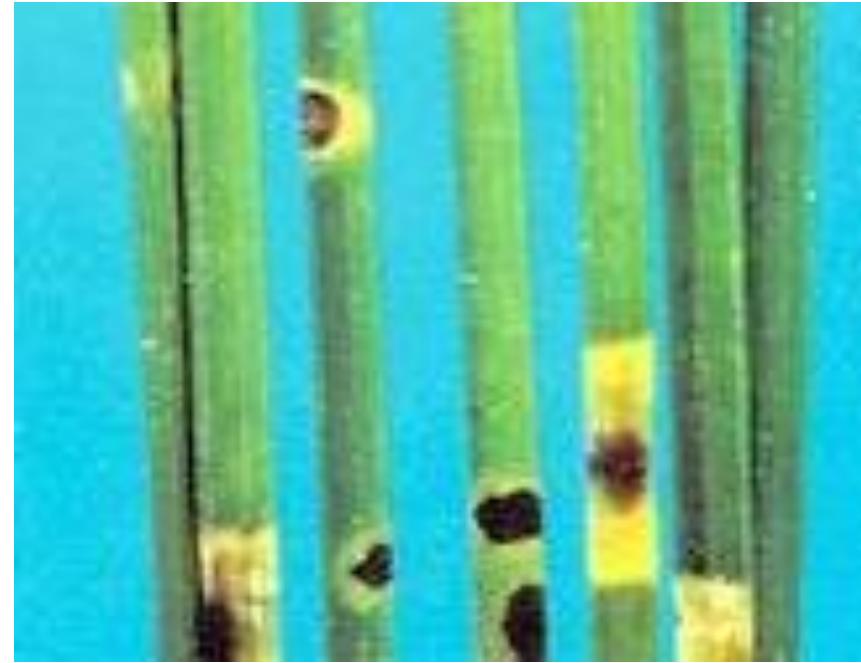
#15 Artist's Conk-Senior Only

Fungus usually on dead trees but may enter through wounds. Fruiting bodies are perennial, leathery to wood with brown spores on top. Ninety percent of infected trees must be removed. Try to keep soil dry and trees healthy and unwounded.



#16 Brown Spot Needle Blight- Senior only

Only damages long leaf pines in the South. Spores attack seedlings in the grass stage. Starts as grey green spots which turn brown and results in death of the needles. Spores are spread by rain. Control is best by prescribed burn of infected areas. Insecticides can be effective if found early in small areas and some types are resistant to disease.



ISU Plant Disease Clinic

#17 chestnut blight - senior



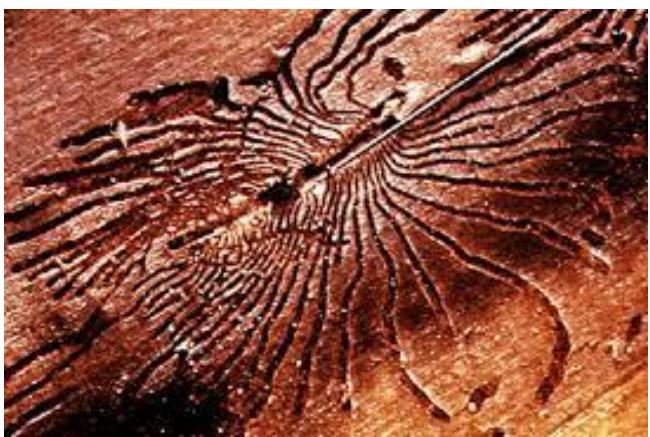
- chestnut blight is not just associated with shoot dieback; it can kill twigs and branches of any size. It is actually a canker disease
- American chestnut, oaks
- symptoms on the American chestnut include flagging (the yellowing and dying of individual branches) and dead leaves
- Buff to oranges color on branches, dieback not in the crown

#18 Dogwood Anthracnose- Senior only

Infection begins on leaves and spreads to twigs and branches causing low branch dieback. Infection increased in higher elevations, moist to wet sites, and deep shade. A slight purple border may form between dead and healthy tissue. Mulching, pruning , watering during drought and a fungicide may improve chances for the tree. Cankers may form on dead trees with death in 2-3 years.



#19 Dutch elm disease - senior



- The earliest external symptoms of infection are often yellowing and wilting (flagging) of leaves on individual branches in the crown
- Highly susceptible trees often die in a single year
- If the bark of infected elm twigs or branches is peeled back, brown discoloration is seen in the outer layer of wood
- Elm trees
- The resulting pattern of tunnels is called a gallery

#20 needle cast -senior



- Infected needles may look yellow and mottled by mid to late summer. Infected needles turn brown or purplish brown by late winter or early spring.
- Spruces especially blue
- Look for tiny black spots arranged in neat rows on infected needles.

#21 Oak Wilt-Senior Only

Destructive vascular disease causing death in the South especially in red oaks more than white. Fungal mats form cushions under the bark of infected trees. Leaves brown at the tips to the margins. In red oaks the entire crown is affected while in white oaks develops slowly from branch to branch. It spreads through root grafts or by insect vectors. Pruning and infected tree removal are the most effective. As the roots provide



#22 red heart of pine - senior



- fungus produces perennial conks, which are frequently hoof shaped. Those that are not, lie flat against the stem, projecting a light brown surface outward. shaped conks have a dull gray to dark brown upper surface, with concentric furrows parallel to the margin. The underside is light brown to brownish-gold, and velvety in texture. Infected heartwood is often light red to reddish-brown.
- Pines
- Affected trees exhibit swollen knots. Infection normally occurs through dead branch stubs. Infected trees can survive indefinitely, but can be structurally unsound.

#23 white pine blister rust – senior



- earliest symptom of blister rust is a yellow or red spot on needles first detected by a slight swelling of the infected branch. this swollen area becomes a spindle-shaped canker Eventually the canker will completely girdle the branch, kill it
- White pines