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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, Cook College, Rutgers University in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public. Articles appearing in these proceedings are divided into two sections.

The first section (white pages) includes lecture notes of papers presented at the 1997 New Jersey Turfgrass Expo. Publication of the New Jersey Turfgrass Expo Notes provides a readily available source of information covering a wide range of topics. The Expo Notes include technical and popular presentations of importance to the turfgrass industry.

The second section (green pages) includes technical research papers containing original research findings and reviews covering selected subjects in turfgrass science. The primary objective of these papers is to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Dr. Ann B. Gould, Editor
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DISEASE CONTROL IN ORNAMENTAL PLANTINGS

Dr. Ann B. Gould[1]

Listed in the following table are a number of diseases, with approprite management and chemical control options, commonly encountered in New Jersey landscapes during the 1997 growing season.

DISEASE	SYMPTOMS	MANAGEMENT	CONTROL***
Tar Spot of Maple (red, sugar, and silver maple)	Thickened, black blotches of fungal growth appear in late summer on the upper surfaces of affected leaves. The damage due to tar spot is merely cosmetic and appears too late in the growing season to seriously affect trees.	Improve plant vigor. Avoid over-head watering, and rake up and remove diseased leaves in the fall.	If desired, mancozeb may be applied once just before buds open on highly prized specimen trees.
Horse-chestnut Leaf Blotch	Lesions appear in the spring first as watery blotches that turn brown within a few days and are bordered by a yellow band. The blotches coalesce, causing distortion and curling of leaflets. Also affects petioles and fruit.	Improve plant vigor and remove leaf litter. Avoid over-head watering.	Only if absolutely needed: chlorothalonil, mancozeb, or thiophanate-methyl according to label recommendations.
Powdery Mildew	Caused by obligate parasites that produce a powdery growth mainly on leaf surfaces.	Sanitation. Space plants to improve air circulation and reduce humidity. Practices that promote succulent growth, including pruning and nitrogen fertilizing, should be avoided.	Fenarimol, propiconazole, thiophanate-methyl, triadimefon, triforine, or Zyban (=Duosan) according to label recommendations.

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DISEASE	SYMPTOMS	MANAGEMENT	CONTROL***
Dogwood Powdery Mildew	Especially severe in 1996 and 1997 on *Cornus florida*. May cause some leaf distortion and scorch.	See above.	Fungicides such as Benefit, propiconazole, thiophanate-methyl, triadimefon, or Phyton 27 might be considered for use at the first sign of disease, especially on highly susceptible *C. florida* cultivars.
Ash Rust	Spores from marsh or cord grass infect ash leaflets in spring. Yellow spots form on upper leaflet surfaces. Orange fruiting bodies containing spores form on lower leaflet surfaces and on petioles.	Improve plant vigor. Avoid planting white ash along the coast close to alternate host.	Only if absolutely needed: mancozeb at budbreak. Repeat twice at 10- to 14-day intervals according to label recommendations.
Sphaeropsis (or Diplodia) Shoot Blight and Canker (two and three-needle pines)	This disease is most devastating on Austrian, mugo, and Scots pines. The fungus *Sphaeropsis* infects and kills developing needles, resulting in dead candles that are much shorter than healthy ones. Sunken cankers may form on branches and stems, killing tissue distal to the canker. The lower branches of pines are affected first. Tiny, black, spore-producing structures called “fruiting bodies” can be seen with the aid of a hand lens at the base of dead needles and on cones. Spores are released from these fruiting bodies in cool, rainy weather and are transmitted to susceptible tissue.	Improve plant vigor. Prune during dry weather. Use tolerant varieties, such as Japanese black pine.	Cleary 3336 at budbreak. Repeat twice at 10- to 14-day intervals according to label recommendations.

DISEASE	SYMPTOMS	MANAGEMENT	CONTROL***
Juniper Tip Blight (*Phomopsis* and *Kabatina*)	These tip blights are caused by the fungi *Phomopsis* and *Kabatina*. Tips of newly developing branches become infected with *Phomopsis* in the spring and turn brown by summer. Infected growth is killed back to the previous season's wood. Mature tissue is resistant to Phomopsis tip blight. Symptoms of Kabatina blight occur throughout the year and only on wounded twigs older than one year.	Avoid wounding, maintain plant vigor, and prune dead branches.	Copper, propiconazole, thiophanate-methyl or Zyban (=Duosan) at budbreak according to label recommendations.
Pachysandra Leaf and Stem Canker (*Volutella*)	This disease is caused by the fungus *Volutella*. Large leaf spots that have a "bulls-eye" pattern appear on leaves in the spring. Cankers that form on petioles and stems produce characteristic pink-colored fruiting bodies within several weeks in wet weather.	Improve plant vigor. Avoid mechanical injury and moisture stress. Remove excess leaf litter. Discard severely infected plants. Occasional thinning helps to reduce humidity and helps to keep disease severity to a minimum.	Chlorothalonil, copper, mancozeb, or Zyban (=Duosan) at 10- to 14-day intervals according to label recommendations.
Cankers of Shade Trees and Conifers (*Nectria*, *Atropellis*, and *Cytospora*)	The fungi that cause cankers are opportunistic organisms that infect twigs, branches, and trunks through wounds and at the base of dead branches. As cankers enlarge, affected tissue becomes girdled and tissue distal to the canker dies. A cut made into the wood with a pocketknife at the edge of a canker reveals a sharp transition between white, healthy wood and brown, infected wood.	Improve plant vigor. Avoid moisture stress and wounding. Prune affected branches. Disinfest tools between cuts.	None.

DISEASE	SYMPTOMS	MANAGEMENT	CONTROL***
Root and Crown Rots (example: Phytophthora root and crown rot)	Root and crown rots are caused by fungi that live in the soil and attack the roots of susceptible plants, resulting in root rot and death. Affected plants may become yellow and stunted and will eventually wilt and die. Root rot fungi include the non-water molds (such as *Fusarium* and *Rhizoctonia*) or water molds (including *Pythium* and *Phytophthora*).	Inspect stock before planting. Plant in well-drained locations. Avoid over-watering, and maintain plant vigor.	Non-water Molds: iprodione, PCNB, or Banrot according to label recommendations. Water Molds: fosetyl-Al, mefenoxam, metalaxyl, propamocarb-HCl, ethazole, or Banrot according to label recommendations.
Verticillium Wilt of Shade Trees (maple and tulip poplar)	Verticillium wilt is a disease of many species of shade trees, particularly maple. The fungus lives in the soil and penetrates small roots. Spores of the fungus are carried up to developing tissue in the canopy via water-conducting vessels in the wood. The vessels become clogged and affected branches wilt and die.	Improve plant vigor. Use resistant plants or place susceptible species in a new location. Practice sanitation.	None.

***Always follow label recommendations when applying fungicides.

GENERAL REFERENCES FOR DISEASES OF LANDSCAPE TREES

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