

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

NOVEMBER 20, 1997



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Elm Revival

Deborah Smith-Fiola, Ocean County Agricultural Agent

The American elm was once considered the ideal street tree: it grew moderately, had a magnificent vase shape (allowing for a narrow base yet arching, shady branches), and good fall color. Many remember the cathedral-like, double tree-lined boulevards of towns across the East, before the onset of **Dutch Elm Disease**. Dutch Elm Disease, vectored by the tiny — yet plentiful — **European elm bark beetle**, choked the vascular system of these lofty trees, causing wilting and death, one by one, beginning in 1950. Dead and dying trees across the country were removed to slow the spread, although it has been said that it is only a matter of time before Dutch Elm Disease ‘wins’. The loss of American elms has resulted in the loss of tree-lined streets and shade, as well as a reduction in property values.

◆ Elm leaf beetle

Dutch Elm Disease was not the only pest attacking elm. The **elm leaf beetle**, *Pyrrhalta luteola*, feeds on elm foliage as both a larva and adult. Adults are active in the spring, and a second generation occurs in July. Leaves are eaten between the leaf veins, causing yellowing, curling, and dropping in heavy populations. This pest can be devastating to susceptible elms.

Tree breeders have cooperated in an effort to find elm cultivars that are resistant to the above key pests. There is a cultivar of American elm called ‘Liberty’ (also called ‘American Liberty’) that has been described as resistant to Dutch Elm Disease and promoted by the Elm Research Institute (Harrisville, NH). There are several clones within the ‘Liberty’ series. Because they are propagated by seed, however, there is fear that the disease may ‘catch up’ to older specimens in the future. Another American elm cultivar is ‘Delaware #2’, which is touted as highly resistant to Dutch Elm Disease by the Nursery Crops Research Laboratory (Delaware, OH). The cultivar ‘Washington’ is said to exhibit crown resistance to Dutch Elm Disease. Both of the latter cultivars are available through Princeton nurseries.

◆ Elm tree

The alternatives are limited, since the five elm species native to the US — Slippery elm (*Ulmus rubra*), rock elm (*U. thomasi*), winged elm (*U. alata*), September elm (*U. serotina*), and cedar elm (*U. crassifolia*) — are all partially susceptible to Dutch Elm Disease. However, there are 20 species of elm native to Asia, all of which show good resistance to Dutch Elm Disease and many with good elm leaf beetle resistance.

SEE ELMS ON PAGE 2

Wildlife Habitat Incentives Program

Sign-up for the Wildlife Habitat Incentives Program (WHIP), a new voluntary program administered by the Natural Resources Conservation Service (NRCS), has now begun. The USDA program provides both technical assistance and cost-sharing for people who want to develop or improve wildlife habitat.

NRCS has allocated \$130,000 for Wildlife Habitat Incentives Program cost-sharing payments to landowners in New Jersey for this fiscal year. WHIP participants who own or control land agree to prepare and implement a wildlife habitat development plan. NRCS will provide technical assistance with help from other wildlife agencies to develop a plan. The plan will describe the landowner's wildlife habitat goals, a list of practices and a schedule for implementation, and actions necessary to maintain the habitat for 5 to 10 years (the life of WHIP agreements).

NRCS, WHIP partners (NJ Division of Fish, Game & Wildlife; US Fish & Wildlife Service; NJ Conservation Foundation; and others) may also provide expertise or additional funding to help complete a project. NRCS and its partners developed priority areas. The three priority wildlife habitat areas in New Jersey are: The Wallkill River Watershed in Sussex County; the Inner Coastal Plain agricultural lands from Mercer County to Cumberland County; and lower Cape May County. The three priority species of wildlife impacted by agriculture are: the bog turtle, bobwhite quail, and grassland birds. The three statewide important practices of greatest priority are school site habitat development, fish habitat enhancement in streams, and invasive exotic vegetation control.

Any non-federal land in any priority wildlife habitat area will be eligible for participation in WHIP. Landowners throughout the state who are interested in any of the statewide important practices will be eligible for the program.

Financial assistance will be provided for the initial development of wildlife habitat practices. Landowners must agree to maintain any cost-shared practices and allow NRCS access to monitor the effectiveness of the practices. Cost-share payments of up to 75 percent may be used to establish, maintain, or replace practices.

For more information, or to sign up for the Wildlife Habitat Incentives Program through the Natural Resources Conservation Service, landowners can contact any USDA Service Center. USDA Service Centers are listed in the telephone book under the US Department of Agriculture. □

ELMS FROM PAGE 1

The Siberian elm (*U. pumila*) is resistant to Dutch Elm Disease. It is also fast growing and drought tolerant. It will survive in poor sites and under environmental extremes. It has an open habit and grows to 50-70 feet. However, fast growth creates a problem with brittle wood, making it vulnerable to branch breakage in wind and ice storms. From an IPM point of view, Siberian elm is an undesirable 'key plant,' since it is very susceptible (and most preferred) to the elm leaf beetle. Although it is resistant to Dutch Elm Disease, the drawbacks of Siberian elm make it primarily useful as a parent plant in breeding hybrids.

The Chinese elm (*U. parvifolia*), also called the lacebark elm, is a splendid small shade tree that grows up to 40-50 feet tall. It has small, glossy leaves and mottled, exfoliating bark. The form varies, sometimes vase-shaped (like a small American elm), sometimes wider than tall, but overall a rounded form. It is a tough tree, hardy, tolerant of soil extremes and tolerant of urban areas. Most importantly, this recommended tree is resistant to both Dutch Elm Disease and the elm leaf beetle!

The Chinese elm has many cultivars that are also resistant to Dutch Elm Disease, and have been bred for a shape/habit similar to that of the American elm. Some resistant cultivars include: 'Across Central Park', 'Dynasty', 'King's Choice', 'Milliken' and 'Prairie Shade' (also resistant to anthracnose and elm leaf beetle).

Researchers have also considered crossing the American elm with the Asian elms, in order to breed a Dutch Elm Disease resistant tree with a tall, vase shape. This has been difficult, however, since the chromosome number of the American elm is twice that of the Asian elms, but there have been a few clones produced recently.

Researchers have likewise looked into selecting hybrids of Asian elm mixed parentage that look like American elm, yet with pest resistance and urban tolerance. By far the majority of elms touted for Dutch Elm Disease resistance have been hybrids. For example, a selection from the Morton Arboretum (IL) called the 'Accolade™' elm, is a cross between the Japanese elm (*U. japonica*), which grows in cold areas with short growing seasons, and the Wilson elm (*U. wilsoniana*), a species from the mountains of China. This hybrid has a vase-shaped form, dark glossy leaves, and Dutch Elm Disease resistance. Other hybrids with good Dutch Elm Disease resistance include: 'Beta Schwarz', 'Christine Buisman' (highly resistant), 'Groeneveld', 'Homestead' (also resistant to elm phloem necrosis), 'Pioneer' (also resistant to elm phloem necrosis), 'Regal', 'Urban', 'Columnella', 'New Horizon' and 'Patriot'.

Perhaps the American elm was overused in the landscape, which predicated its demise with such a devastating disease as Dutch Elm Disease. This lesson is valuable to IPM managers: avoid monoculture plantings when designing a landscape to prevent a pest from a potential smorgasbord. The key is diversity, and to maintain healthy plants which can tolerate and defend themselves against pest attack (arborists call this 'Plant Health Care'). (Source: *Pest Resistant Ornamental Plants*, D. Smith-Fiola; *Manual of Woody Landscape Plants*, M. Dirr; *Ware & Miller, Amer. Nurs.*, 8/15/97)

This article was reprinted from the October, 1997 issue of *Landscape IPM Notes*. For subscription information contact Rutgers Cooperative Extension of Ocean County (732) 349-1246. □

Greenhouse Pest Notes

James Willmott, Camden County Agricultural Agent

Poinsettia

In recent years, **Powdery mildew** of poinsettia has been troublesome in greenhouses in the Northeast. So far this season, powdery mildew has been reported in Long Island, Maine, and New Jersey. Margery Daughtrey, Plant Pathologist with Cornell University, stresses the importance of crop monitoring and early detection. Scout now for initial symptoms that appear as yellow leaf spots. As the disease progresses, white fungal growth, sometimes confused with spray residue, becomes evident on leaves and bracts. Since fungal spores are easily spread throughout greenhouses, infected leaves should be removed by slicing the petioles and gently placing affected tissue into plastic bags with a minimum of disturbance. Once symptoms are evident, spray the entire crop with triadimefon (Strike) at 2-week intervals.

Botrytis blight: As winter approaches, outdoor temperatures drop, light levels decrease, and problems with Botrytis on poinsettias increase. This fungus enjoys a humid environment and thrives on dead and dying plant material. To control this disease, practice sanitation and manage the greenhouse environment to minimize relative humidity and episodes where leaf surface temperatures drop below air temperatures. Other techniques used to manage Botrytis blight include irrigating early in the day, increasing spacing, heating and ventilating as the sun sets, and using horizontal air flow. For best results, apply Benefit, thiophanate-methyl, or triadimefon at label rates. Caution should be taken when applying sprays, especially Benefit and chlorothalonil, after bracts start to show color.

Please note that although compounds containing thiophanate-methyl, iprodione, or vinclozolin are registered for control of Botrytis blight, isolates of Botrytis that are resistant to these compounds may be present. If a treatment applied as per label recommendations is not effective, shortening the interval or increasing the rate will not improve disease control, and as a result, another fungicide should be used. To reduce the possibility of fungal resistance in the future, avoid the sole use of any fungicide for extended periods of time when other reliable products are available.

Whitefly problems on poinsettias have not disappeared. Despite excellent results with Marathon, application mistakes occasionally result in failures. Growers who monitor crops with sticky cards and visual scouting are not likely to be surprised. Catch whitefly problems early! Once populations build up, plants are large, coverage is difficult, and the risk of bract injury increases. When bracts are in color, smoke and aerosol pesticide formulations are generally safe, but follow all labels suggestions to avoid injury.

Fungus Gnats continue to trouble growers of pot plants. Poinsettia growers are most concerned during propagation, but should maintain management through the entire crop cycle to reduce the potential spread of root diseases and the possibility of selling fungus gnats to consumers. If consumers associate poinsettias with household pest problems, they may consider the artificial option!

Black root rot

Look for **Black root rot**, caused by *Thielaviopsis basicola*, on pansies and many bedding plants. Growers should monitor crops

closely for stunting or symptoms that resemble nutrient deficiency. Overwatering and inappropriate nutritional management may increase problems to the point where roots turn black and rot. Since the disease is difficult to manage, early detection and rouging are essential. For pansies, maintain media pH between 5 and 5.5. This is lower than most crops, but is necessary for reducing disease problems. Fungicides are more effective when the disease is detected early; for management of *Thielaviopsis* and other non-water mold fungi, apply Banrot, Benefit, iprodione, triflumazole, or thiophanate-methyl fungicides according to label recommendations.

Leafminers

Leafminers are becoming troublesome on garden mums. Crops should initially be monitored for small puncture wounds on leaves which result from females inserting eggs. As larvae develop and feed, mines become evident. Older mines appear as brown blotches that could be confused with other problems. When held up to light, leafminer larvae are sometimes visible along with dirt-like fecal matter. Numerous insecticides are registered for control. □

Calendar of Events

December 3, 1997 - Successful Ideas for Your Landscape Business, Masso's Crystal Manor, Glassboro, NJ.
Contact: RCE of Gloucester County (609) 863-0110.

December 9-10 - NJ Turfgrass & Landscape Expo '97, Trump Taj Mahal, Atlantic City.
Contact: (732) 821-7134.

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Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact Rutgers Cooperative Extension in your County.

Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances a compound may be sold under different trade names, which may vary as to label clearances.