LANDSCAPE MAINTENANCE SEMINARS . . . for the landscape professional

Cooperating: Center for Urban Horticulture, University of Washington; Cooperative Extension Service, Washington State University; Edmonds Community College; South Seattle Community College.

Diagnosing Insect Problems in the Landscape

Date: Wednesday, October 28
Time: 9 a.m. to 12 noon
Location: Center for Urban Horticulture
Instructor: Sharon Collman

Learn to systematically identify insect problems using signs and symptoms. Understand insect life cycles. Find out how to use integrated pest management strategies.

Ms. Collman is the Washington State University Cooperative Extension agent in Snohomish County. She has coauthored many extension publications on insect pest management and edited Of Bugs and Blights, an integrated pest management newsletter.

This seminar qualifies for 3 hours of W.S.D.A. pesticide license recertification credit.

Composting for Landscape Professionals: How to Cut Your Dumping Costs

Date: Tuesday, November 17
Time: 9 a.m. to 12 noon
Location: Center for Urban Horticulture
Instructor: Carl Woestendiek

Can you cut those rising disposal costs through composting? Learn how landscape managers can recycle organic wastes to their advantage. See chippers and shredders on display. And tour the composting operations at Children’s Hospital. Part of this seminar is outdoors, so dress for the weather.

Mr. Woestendiek has a B.S. in horticulture from Washington State University. He is a partner in Edible Landscaping and a consultant to the City of Seattle and King County on composting and waste reduction education.

Successful Transplanting

Date: Tuesday, December 8
Time: 9 a.m. to 12 noon
Location: Center for Urban Horticulture
Instructors: Dr. Rita Hummel and Dr. Ray Maleike

Traditional transplanting techniques are being questioned. Are soil amendments effective? Does pruning increase the survival of newly transplanted trees and shrubs? Should you fertilize at planting time? Find out what the latest research suggests about successful transplanting.

Dr. Hummel is assistant horticulturist and Dr. Maleike is extension horticulturist at Washington State University’s Western Washington Research and Extension Center in Puyallup.

OTHER EDUCATIONAL RESOURCES

Dazzle Your Audience: Public Speaking for Horticulturists. We are often asked to share our expertise through lectures and teaching. But can we communicate effectively? Learn how to organize a lecture, analyze your audience, give “no-doze” slide shows, and master flipchart and chalkboard techniques in a public speaking workshop on Saturday, October 10, 9 a.m. to 4 p.m., at the Center for Urban Horticulture. Special guest Ann Lovejoy, gardening columnist for The Weekly and author of The Year in Bloom, will present “Make It Snappy: Ten Steps to Cleaner Communication or, When in Doubt, Prune It and Go Easy on the Manure.” Registration is $39, including lunch, and preregistration is required by October 2. 545–8033.

Irrigation Workshop in Bellingham. “Landscape Irrigation: Design and Troubleshooting,” a workshop for landscape professionals, will be presented on Saturday, September 26, 9 a.m. to 4 p.m., at Bellingham Vocational Technical Institute. Find out how the basic irrigation system works. Learn to pinpoint the main trouble spots and fix them. Registration is $25 before September 20 and $30 after. For details, call Van Bobbitt, Center for Urban Horticulture, 545–8033.

Tree Management—Putting Concepts Into Practice. The 1987 training conference of the Pacific Northwest Chapter of the International Society of Arboriculture will present the latest in tree care practices and research. This three-day program, September 23, 24, and 25, will take place at the Bellevue Holiday Inn and the Washington Park Arboretum. For a registration brochure, call Dr. James Clark, 543–8603.
South Seattle Community College Horticulture Courses—Autumn 1987.


ARTICLES

Air Pollution and Tree Selection
Dr. Deane Wang
Center for Urban Horticulture
University of Washington

In major urban areas, air pollution is as much a part of the urban scene as traffic, noise, structures, and other forms of human "congestion." Gaseous pollutants (ozone, hydrocarbons, sulfur dioxide), trace elements (lead, cadmium, zinc), "acid rain" (sulfuric and nitric acids), and other chemicals (salts, pesticides) blanket the city environment.

For the urban horticulturist, the challenge is to use plants tolerant of anticipated pollutant conditions. For air pollutants, our present knowledge indicates that the major plant stress is likely to come from sulfur dioxide and ozone (though technically different, "ozone" is used interchangeably with "oxidants"). Fluorides and other pollutants coming from specific factories cause many problems in those locations but do not represent a general urban stress. Negative response to "acid rain" and trace elements has not been found to be a major problem to date, although much research is currently underway.

At present, it is difficult to accurately predict where concentrations of ozone or sulfur dioxide will be highest in the city. While factors such as compaction, temperature, and light may discourage the use of susceptible plants at certain sites, these gaseous pollutants suggest no better or worse place to locate urban plants.

The following lists of tree species and their relative tolerance to ozone and sulfur dioxide were prepared by Donald D. Davis and Henry D. Gerhold (Selection of trees for tolerance of air pollutants, 1976, pp. 61–66,
in Better Trees for Metropolitan Landscapes, U.S.D.A. Forest Service, Gen. Tech. Rept. NE-22). These were compiled from other lists and a variety of research reports. The authors noted the following cautions in using these lists: 1) the rankings are based on visible injury alone, and other effects may occur without causing visible symptoms; 2) susceptibility can vary greatly within a species—only a few varieties of trees were tested; 3) the lists were taken from plants growing in many countries, thus seed source, climatic conditions, and pollutant exposures vary considerably, making extrapolation to specific locations difficult.

Despite these cautions, the extremes of the list can probably be used fairly reliably. Those listed as tolerant endured fairly harsh pollutant conditions without significant impact. Using sensitive trees in areas known to have high pollutant levels is not recommended, even if there is some chance that the particular variety planted is only slightly sensitive. Given the wide choice of trees available, why take a chance?

The "intermediate" listing needs to be considered more cautiously. Trial plantings of these species at a particular location would provide the best evidence of pollutant tolerance. There is great opportunity for breeding and genetic selection for pollutant tolerance. Though some work has been done to date, a large number of tree species still require research.

Clearly, we need trial plantings to determine the tolerance of various species to local and regional environmental factors, including temperature regimes, moisture, and soils. The added presence of air pollutants only emphasizes the need for regional urban tree evaluations. In practice, however, it is apparently "easier" to replant urban trees than to study why they failed.

**What Trees Are on Seattle's Streets?**

Dr. James R. Clark  
Center for Urban Horticulture  
University of Washington

Since 1961, the city of Seattle has planted over 21,000 trees, according to a compilation prepared by Mike Shaw of the Engineering Department. With the help of Asher Go, a University of Washington student, this list has been broken down numerically by genus, species, and cultivar. This taxonomic grouping covers only two-thirds of the total number of trees present some interesting data, nonetheless.

Here are some of the major results (see tables):
- 21,289 trees have been planted
- 81 different taxa are represented, including 29 genera and 55 species

---

**Registration Form: Landscape Maintenance Seminars**

- Complete Series: Insects, Composting, Transplanting .......... $30.00
- Insect Problems ......................................... $12.50
- Composting ............................................. $12.50
- Transplanting .......................................... $12.50

**TOTAL: $**

**Group Rates:**  
Firms/institutions sending two or more employees per seminar. The rates are:
- 2–5 employees ...... $10.00/person  
- 6 or more employees ....... $ 9.00/person

To qualify for group rates: (1) firm’s registration must be received at least one week in advance; (2) all registrants must be from the same firm; and (3) total registration fee must be paid with one check or purchase order.

Firms using purchase orders must make prior registration arrangements.

Make checks payable to the University of Washington; no bank cards.

Portion of fees may be used for refreshments and hosting speakers.

Receipts will not be returned by mail; they will be available at the door.

**NAME**

**ADDRESS**

**CITY**  **STATE**  **ZIP**

**PHONE (DAY)**  **PHONE (EVE)**

Mailing payment and registration to: Urban Horticulture Program, University of Washington, GF–15, Seattle, WA 98195

For more information please call 545–8033.
While we know little about the health of many of these trees, the compilation of this taxonomic information is a first step toward understanding the nature of the “forest” along Seattle’s streets. It should prove valuable in planning future street tree plantings.

**Juniper Twig Dieback**

George Pinyuh
Cooperative Extension
Washington State University

Junipers are a serviceable group of landscape plants which are especially appropriate for hot, dry, sunny situations in well-drained, infertile, sandy or gravelly soils. In nature, they grow on some of the poorest soils. In fact, conditions which are good for many landscape shrubs—plenty of moisture, good fertility, and partial to full shade—probably contribute to the poor performance of junipers in western Washington.

One of the most serious problems experienced with junipers is the sudden or long-term dieback of individual branches or groups of branches in established plantings. The dieback starts at the tips and progresses down the branch. Sometimes entire plants, or even whole plantings, are killed.

These symptoms are often blamed on a fungus disease called juniper twig blight. While this organism can cause the problem, affected plants often show no trace of the fungus. Instead, many cases of dieback are traced to physiological stress caused by inappropriate growing conditions.

Poor soil conditions are often at fault. Heavy, compacted clays and waterlogged soils should be avoided. This genus must have perfect drainage to do well.

On poorly drained sites, winter rains often cause the roots of junipers to rot. This may be compounded by the fact that junipers probably do not enter a deep state of dormancy during our mild, maritime winters. In colder areas, they may be better able to tolerate poorly drained soils, since they are often frozen solid and in a more profound state of rest.

Summer irrigation, especially in heavy soils, can also cause juniper roots to rot. Once established, junipers do not need to be irrigated in the summer.

When planting, it is essential that junipers not be placed deeper than they grew before. In fact, if they must be used in heavy soils, junipers should be planted high. Deep planting leads to root loss and branch dieback.

Too much shade can also promote juniper twig dieback. In the shade, junipers transpire a good deal less and may not be able to use up excess soil moisture. They have evolved to withstand the sunniest, hottest conditions Mother Nature can throw at them; they thrive under similar landscape conditions.

Likewise, most junipers are adapted to low fertility soils. Unless showing nitrogen deficiency symptoms—general yellowing of the foliage or poor shoot growth—it is best not to fertilize them.

Proper placement and cultural practices can minimize juniper twig dieback caused by physiological stress. If, however, the dieback is traced to the twig blight disease organism, the following course of action should be followed: prune out and destroy all dead and dying twigs and branches, keep the plants as dry as possible during the summer, and apply benomyl fungicide sprays every two weeks in the spring beginning when new growth starts.

---

**CENTER FOR URBAN HORTICULTURE**
University of Washington, GF-15
Seattle, WA 98195