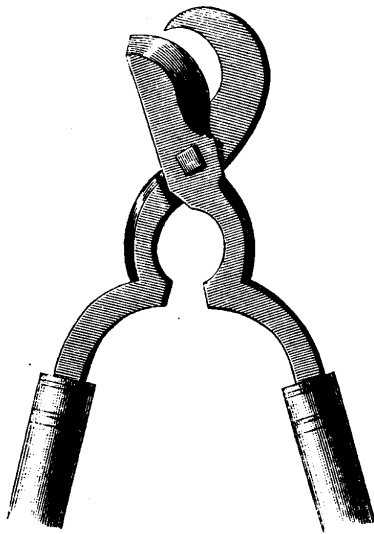


PLANT & PEST ADVISORY

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Dormant Season Landscape Maintenance: The Benefits of Winter Pruning

Nicholas Polanin, Somerset County Agricultural Agent

This past year has been a year of extremes for the "greenscapes" of our urban and suburban landscapes. The flooding rains of Tropical Storm Floyd followed some of the most severe drought conditions New Jersey has ever experienced. These extremes put increasing stress on our landscape and shade tree resources. Property managers, arborists, municipal and community foresters and homeowners should be familiar with several plant health care and other landscape maintenance alternatives to enhance their landscape's winter survival and resurgence in the spring.

Under optimal growing conditions, the appropriate time to prune depends on the type of plant, its condition and the desired results. As the leaves continue to fall, a closer inspection of the interior growth habit, or skeleton, of the tree or shrub can reveal several maintenance issues that might have otherwise gone undetected due to the cover of foliage. Dormant landscape pruning can be a very effective and cost efficient method in controlling the future growth and overall health of your landscape investment.

The need for proper pruning and decision-making cannot be overemphasized. Visualizing the end product of your actions can be extremely difficult. Periodically stepping back to inspect the form and structure while pruning can be an invaluable method in avoiding the chance of over-pruning. Under normal circumstances, no more than twenty-five percent of the current crown should be removed during a given year.

Most importantly, professionally trained arborists should be utilized whenever possible. Proper training and experience in thinning, rigging and felling, and hazard and risk assessment are only a few of the advantages of hiring a qualified arborist. Be certain that any arborist being considered has these and other professional credentials prior to hiring them for the care of the trees and shrubs in your landscape investment.

Pruning is by definition the controlled wounding of the plant for a specific purpose or desired effect. The specific type of pruning necessary to maintain a tree in a healthy, safe and attractive condition has recently been defined in a national set of standards. These classifications can easily be applied to shrubs and other ornamentals throughout the landscape.

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- **Crown Cleaning:** The removal of dead, dying, diseased, crowded, weakly attached and low-vigor branches from the crown of the tree.
- **Crown Thinning:** The selective removal of branches to increase light penetration and air movement through the crown. Thinning opens the foliage of a tree, reduces weight on heavy limbs, and helps retain the tree's natural shape.
- **Crown Raising:** Removes the lower branches from a tree in order to provide clearance for buildings, vehicles, pedestrians, and vistas.
- **Crown Reduction:** Reduces the size of a tree, often for clearance for utility lines. Reducing the height or spread of a tree is best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume terminal roles. This method replaces the unethical practice of topping, which is the indiscriminate reduction of a tree's canopy.

Most routine pruning to remove a flush of growth, weak, diseased or dead limbs can be accomplished at any time of the year. However, there are several major benefits to timing routine or maintenance pruning during the winter months. Trees produce a dense crown of leaves to manufacture the sugar used as energy for growth and development. Pruning trees and shrubs during the dormant season does not interrupt this nutrient and growth cycle, and can result in an efficient re-direction of growth during the following spring. Dormant pruning reduces the number of buds or growing tips sharing the stored food reserves from the roots, so each remaining bud can grow more vigorously the following spring. Dormant pruning of summer flowering shrubs, whose flower buds are formed on new growth, will also encourage larger flowers.

Some trees, such as maples and birches, tend to "bleed" if pruned during the late winter or early spring. Though by itself of little consequence to the health of the tree, these unsightly stains and wounds may attract **borers** or provide an avenue for disease infestation. For previously stressed trees, this could result in a major loss of vigor, growth potential and natural defense mechanisms. Winter pruning can minimize this concern.

An open canopy during the winter months allows for a complete inspection of mature shade trees by a professional arborist. Interior storm damage, cracked or diseased limbs, stem defects, and infestations of exotics such as the **Asian Long-horned Beetle**, among others, can be completed more efficiently. If necessary, corrective pruning or other remedial activities could then be scheduled prior to or during the next growing season. Deciduous shrubs can be similarly inspected and correctively pruned to remove dead canes, thin undesired growth and otherwise rejuvenate the shrub or hedge.

Cabling and bracing, which are support mechanisms for weakly formed crotches and poorly attached limbs,

and lightning protection systems may also be completed during the winter months. The professional climber is afforded easy movement throughout the open canopy structure, and installation areas in the crown can be readily identified without the interference of foliage. Historically significant, "signature" shade and ornamental trees, or other identified "hazard" trees may readily benefit from these professionally installed applications.

Disease and pest management are also crucial in scheduling winter pruning. Oaks and elms are prime examples for preferential winter or dormant pruning. **Oak wilt diseases** are active during the growing season, and fresh pruning wounds can allow spores access into the tree. Untreated saws can also inadvertently spread the disease from cut to cut. **Wood borers** that may be carrying **Dutch Elm Disease** spores will also utilize fresh spring pruning cuts as an entrance to previously uninfected trees. Winter pruning of evergreens such as pines will least likely attract **pine borers**. Timed properly, pruning may actually reduce the need for additional chemical pest control and disease suppression throughout the growing season.

There are many other examples where poorly timed, unprofessional or otherwise inappropriate pruning may actually increase the chance of infestation of these opportunistic and potentially deadly insects or diseases. Knowing the biology of these pests and how they may interact with your decisions and expertise will be the key to creating and maintaining a successful, healthy and aesthetically pleasing landscape for years to come.

For further information and greater details, please consult your County Extension office, the Rutgers Cooperative Extension web site <http://www.rce.rutgers.edu> or the Publications Distribution Center, Dudley Road, PO Box 231, New Brunswick, New Jersey, 08903.

Other Resources for Information on Pruning:
Harris, Richard. Arboriculture: Care of Trees, Shrubs and Vines in the Landscape. Prentice-Hall, Englewood Cliffs, NJ.

Pirone, P.P. Tree Maintenance. Sixth Edition. Oxford University Press, NY.

International Society of Arboriculture. P.O. Box 3129, Champaign, Illinois. 61826-3129. <http://www2.champaign.isa-arbor.com>.

The National Arborist Association, P.O. Box 1094, Amherst, New Hampshire. 03031-1094. <http://www.natlarb.com>. □

A Conference for Landscape Professionals

Jerome L. Frecon, Gloucester County Agricultural Agent

Tony Avent, noted plantsman and lecturer, will head a lineup of prominent landscape professionals at the South Jersey Landscape Conference on December 1 in Glassboro. Mr. Avent will present two one-hour lectures at the all-day conference and trade show at Masso's Crystal Manor. He will be the focus of the morning program with his presentation entitled, "Plants to Excite - Plants to Delight - 100 Plants I Wouldn't Garden Without."

Tony Avent is owner of Plant Delights Nursery at the Juniper Level Botanic Garden in Raleigh, North Carolina. He is well known and a widely traveled speaker on all types of plant ideas and materials for the landscaper. Mr. Avent has been to China, Mexico and Korea collecting unique perennials and other ornamentals for the landscape. He will also give a one-hour lecture during the afternoon entitled "Landscaping with Personality – Getting Customers Excited About the Landscape".

The South Jersey Landscape Conference is sponsored by Rutgers Cooperative Extension in cooperation with the New Jersey Nursery and Landscape Association – Southern Chapter. The 10th annual all-day conference and trade show adopted the theme "For the Landscape Professional" this year to improve the quality and professionalism of southern New Jersey Landscapers.

Larry Kuser, nurseryman and director of the NJNLA will discuss the Certified Nursery Professional Program for all attendees. Mr. Fred Spicer from the Morris County Shade Tree Commission will present his popular presentation on "The Good the Bag and the Ugly of the Landscape". Fred will provide some professional insights to the many problems he sees and what can be done to correct them.

According to Dave Magill of Lipinski Landscape, one of the state's largest landscaping firms, "As labor availability becomes an increasing problem for the landscaper, the need to have professional help in recruitment is a must". Mr. Jim Witmer, of Pan American Recruiting will be present to discuss and answer questions on recruiting landscape labor. Mr. Witmer, Former District Director of the U.S. Department of Labor, Wage and Hour Administration will discuss how to apply for and get H2A labor.

Ms. Madeline Flahive DeNardo of Rutgers Cooperative Extension of Union County will discuss pesticide safety and preparation for the landscape business. Those attending her talk will receive Core units from the New Jersey Department of Environmental Protection. The credits will be given for the following certification areas:

CORE 2 Units

PP2 – 1 Unit, 8C – 1 Unit, 6B – 1 Unit, 3B-1 Unit, 2 – 1 Unit

For further information and registration, contact Rutgers Cooperative Extension of Gloucester County at (856) 881-4191.

Editor's Note: This is the last issue of the Landscape, Nursery & Turf edition for the '99 season. Thank you for subscribing.

Calendar of Events

December 1, 1999 - South Jersey Landscape Conference sponsored by Rutgers Cooperative Extension of Gloucester County. Masso's Crystal Manor, Glassboro, NJ. For further information and registration, contact Rutgers Cooperative Extension of Gloucester County at (856) 881-4191.

December 1 and 2, 1999 - Landscaping for the '90's - IPM Symposium, sponsored by Rutgers Cooperative Extension, will be held at 2 locations: Thursday, at the Ramada Inn, Toms River and Wednesday, at a North Jersey location (see below). Contact: Deborah Smith Fiola, Agricultural Agent, RCE of Ocean County, (732)-349-1250, and call Joel Flagler, Agricultural Agent, RCE of Bergen County for N. Jersey location, (201) 599-6162.

January 10 & 11, 2000 - Environmental Control and Design of Greenhouse Systems, Cook College Campus, New Brunswick, NJ. Contact: Office of Continuing Professional Education at Cook College at (732) 932-9271.

Environmental Control and Design of Greenhouse Systems

January 10 & 11, 2000
Cook College Campus
New Brunswick, NJ

Supplemental lighting and the importance of media composition have been added to this popular short course which explores the important parameters for the design of efficient and environmentally friendly greenhouse systems. These parameters include: choices of greenhouse glazings and re-glazing options, concepts for environmental control including heating, floor heating and systems for ventilating and cooling growing areas.

Other topics include: Planning for expansion, materials handling systems, irrigation and watering systems, mechanization concepts and benching design and layout as it relates to space utilization. Some new aspects of growing systems will be discussed including supplemental lighting for photosynthesis and composition of soil media to ensure adequate and proper moisture movement when using ebb and flow type of irrigation systems for crop production. Both of these topics are new to the course this year.

The course also features a one-half day tour to three greenhouse operations, including a one-acre research/demonstration greenhouse located at the Burlington County Resource Recovery Facility. This greenhouse features the use of methane gas for co-generation to produce electricity for supplemental lighting for tomato production and heat for environmental control of the facility. Our second stop is Kube Pak Corporation, a 14-acre, family-owned bedding and pot plant operation, and Carl Blasig's operation, a family-owned, two-acre glass greenhouse complex. The tour highlights and illustrates information presented during the classroom part of the course, including several glazings, floor heating, transportable benching, fog cooling, insect screening, supplemental lighting, and irrigation systems.

Who Should Attend?

The course is designed for greenhouse owners and managers, growers, extension and research workers, nurserymen and industry representatives. Benefits include the ability to understand environmental control and its limitations, the important relationships involved with water quality as it affects fertilization programs, a logical expansion planning process, and the importance of greenhouse glazing in efficient production systems.

Call the Office of Continuing Professional Education at Cook College for registration. Early-bird registration is encouraged. To register, call (732) 932-9271 and ask for registration. For further information call Margaret Stegman at (732) 932-8451. □

Alkaline Water and Pesticides

Jana Lamboy, Cornell University IPM Program

Excerpted from "Preventing Decomposition of Agricultural Chemicals by Alkaline Hydrolysis in the Spray Tank," by A. J. Seaman and H. Riedl, New York's Food and Life Sciences Bulletin no. 118, Cornell University, Ithaca.

Mixing with alkaline water chemically denatures some pesticides. As an example, the label of Azatin XL mentions that dilute solutions should be maintained at a pH between 3 and 7, and applied soon after preparation. It states that the diluted solution must not be stored for later use. In order to use this product effectively, you will have to correct the pH of your water before mixing. Azatin is not the only pesticide that degrades rapidly in alkaline water (pH greater than 7). The carbamates and organophosphates are generally more susceptible than chlorinated hydrocarbons or pyrethroids.

The first step in preventing alkaline hydrolysis is to determine the pH of the water used for measuring chemicals. Because of the seasonal variability, it is important to measure the pH several times over the course of the growing season. Samples should be collected in a clean, non-reactive container, such as a glass bottle or jar. The water should be representative of the water used for spraying, so let the water run long enough to flush out the water that was standing in the hose and pipes. The pH should be determined soon after collection, because it can change if it is stored too long.

The most accurate way to measure pH is to use an electronic pH meter. However, soil test kits and pH paper are less expensive and more practical in the field. In general, the indicator is mixed with or dipped into the water and the resulting color is compared to a chart. It is often necessary to do a preliminary test with a wide range indicator included in the test kit or make a rough estimate. An indicator with a narrower range is then used for a more precise determination.

Buffering agents are available to add to the tank water if the spray chemical is subject to alkaline degradation, because chemical breakdown can take place before the tank is emptied. If you are using a tank mix, it is important to know that susceptible materials should not be mixed with anything that raises the pH of the solution, such as lime sulfur and liquid ammonia. Also, fixed copper fungicides such as Bordeaux mixture should not be acidified. Copper is more soluble under acid conditions, and so if acidified, more copper will dissolve and could be phytotoxic.

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Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

PLANT & PEST ADVISORY LANDSCAPE NURSERY & TURF EDITION CONTRIBUTORS

RCE Specialists and Staff

Bruce B. Clarke, Ph.D., Turf Pathology
Ann B. Gould, Ph.D., Ornamentals Plant Pathology
Steven Hart, Ph.D., Weed Science
Joseph R. Heckman, Ph.D., Soil Fertility
James A. Murphy, Ph.D., Turf Management
George J. Wulster, Ph.D., Floriculture
Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory
RCE County Agricultural Agents and Program Associates
Atlantic, Charlene H. Costaris (609-625-0056)
Bergen, Joel Flagler (201-599-6162)
Burlington, Raymond J. Samulis (609-265-5050)
Camden, James Willmott (856-566-2900)
Cumberland, James R. Johnson (856-451-2800)
Essex, Jonathan H. Forsell (973-678-7988)
Gloucester, Jerome L. Frecon (856-881-4191)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Richard G. Obal (732-431-7261)
Ocean, Deborah Smith-Fiola (732-349-1246)
Steven Rettke, Program Associate IPM
Passaic, Stanley Kamara (973-305-5742)
Somerset, Nick Polanin (908-526-6293)
Union, Madeline A. Flahive, Prog. Assoc. (908-654-9854)
Warren, William H. Tietjen (908-475-6505)

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer
Mary Ann Hughes, Assistant Editor

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