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This newsletter is issued weekly (biweekly in the early spring and late summer) to provide timely information on insect, weed, and plant disease pests of the home, yard, and garden. Current control procedures, application equipment and methods, safe storage and disposal of pesticides, and other topics of interest are discussed.

Last Issue for 1997

This is the 22nd and final issue of *Home, Yard, and Garden Pest Newsletter* for this publication year, and it contains the index for 1997. We will resume publication in mid-April 1998 (depending on how early spring arrives). Order forms for subscribing to the 1998 edition of the newsletter will be mailed in February. If you do not receive a subscription brochure, please call 1-800-345-6087.

We are interested in making this newsletter as useful as possible for professional ornamental horticulturists. As always, your comments are appreciated by me (as newsletter coordinator) and the contributing authors. (*Phil Nixon*)

HYG Online in 1998

Home, Yard and Garden Pest Newsletter will be available by subscription on the World Wide Web beginning with the first issue in 1998 (mid-April). Temporary, free access to the Home, Yard and Garden Pest Web site will be available soon at <http://www.ag.uiuc.edu/cespubs/hyg/>. Three issues of the newsletter will be on the sample site to give people a chance to explore all the features that will be offered to Web subscribers next year.

The benefits of a Web subscription include immediate availability of the newsletter, a keyword search function, and convenient access to previous newsletters and articles. The Web version of the newsletter will also include features not available to print subscribers, such as links to other Web sites and a listing of announcements and meetings.

The Web subscription rate is \$25. Subscribers can also choose a combination of regular mail delivery and the Web for \$40. The price for a mail subscription is \$28, by fax \$60. An online subscription form will be ready soon. (*Peggy Currid*)

HORTICULTURE

Winter Preparation for Ornamental Plants ... It's Not Too Late

This winter seems to have crept up on us before we realized what was happening. Many of us were not able to prepare our plants the way we normally would. Although we are past the ideal time for many preparations, there are several items you might still consider to prepare plants for the depths of winter.

Needled and broadleaf evergreens are susceptible to winter burn caused by desiccation. This occurs when frozen soil reduces water absorption while the plants are exposed to drying winds and deicing salts. Needles or leaves typically begin to turn brown at the tip and brown further backward, depending on severity. One way to help prevent rapid moisture loss through the leaves or needles is with antitranspirants, which help reduce transpiration. Antitranspirants should be applied now—before severe winter sets in.

Other types of cold injury include sunscald and frost cracks. Sunscald and frost cracks are caused by extreme temperature fluctuations. Sunscald is actually a freezing injury and is most likely to occur on young trees. Sunscald spots may develop into a frost canker. Use tree wraps on susceptible trees to help reduce the risk of damage from temperature fluctuation.

Frost cracks occur when the outside cells of the tree lose water, shrink, and pull apart—causing a crack to open longitudinally with the grain of the wood. Again, tree wraps may help, but some species are simply more prone to cracking than others. Trees



shaded on the south and west sides, where the tree heats up the most, will sometimes crack less.

Roses typically need additional protection, and it is not too late to cover them. Ideally, excessively long canes of hybrid teas, floribundas, grandifloras, and polyanthas should have been pruned back slightly by now. Because the plants should be covered after they go dormant, do that now. Bushel baskets or commercial covers work well. You will need to trim the canes back to fit underneath the cover. Other ways of protecting the roses include covering with leaves (oak work best), pine needles, straw, old sawdust, or bark chips. The depth of the material should be 12 inches. Soil is not recommended as a cover because it stays too wet and packs too solidly. In the spring, remove the cover or mulch, trim the canes back to healthy wood (just above the strong bud), and thin the plants to four or five canes.

Climbing and rambling rose canes may also need winter protection. Lay the canes on a bed of straw and cover them with more straw. Be sure to cover the crowns. Keep the straw in place by tying it or covering it with a small amount of soil. In the spring, remove the covering, remove all damaged wood, and place the canes or shoots back on the trellis.

Because of our late fall, many trees did not drop their leaves until recently. If possible, you should still try to remove the fallen leaves—particularly because leaves left on the ground could damage grass. Additionally, many leaves house pathogens capable of causing disease the following year. Dispose of leaves through community programs or use them as mulch or in a compost pile. Check with your local law enforcement agency or fire department before burning leaves, because many local governments prohibit leaf burning.

In summary, the more work done through the fall and winter, the less spring cleanup will be required. Be sure to properly discard all plant wastes. Do not remove winter-protective devices too early in the spring. In areas subject to many late heavy snowstorms and temperature extremes, early mulch removal might be a serious mistake.

For more information, obtain the horticulture fact sheet *Winter Protection for Woody Plants*, # LH 179. (Rhonda Ferree and Jim Schmidt)

Plants Not Favored for Browsing by Deer

Deer are becoming an increasing problem in the Midwest, especially for homeowners living near woodlands. As open land continues to be developed, less open space is available for the deer to live. In the open space that remains, the deer population develops unchecked because there are no natural predators, such as wolf, cougar, and coyote. In good habitats, the deer population can more than double each year.

Deer damage plants in two ways: battering by antlers and browsing. Battering occurs in late summer and fall. Young trees, two to three inches in diameter, are used for “sparring practice.” During late fall and winter, deer browse (feed) on young succulent twigs when other foods are less available. New buds and shoots are also browsed in spring and early summer.

Staff members at The Morton Arboretum are frequently asked to suggest plants that are not eaten by deer. It is important to realize that deer will eat almost any plant if they are under enough pressure, such as snow cover and overcrowding. The plants in the following lists are not favored for browse by deer. The list was compiled based on the observations of Pete van der Linden, Curator of Plant Collections, The Morton Arboretum, Lisle, Illinois, and Galen Gates, Manager of Horticulture Collections, Chicago Botanic Garden, Glencoe, Illinois. The book *Gardening in Deer County* by Karen J. Bernard (Croton-on-Hudson, New York. 54 pp.) was also used as a source. (Written by Kris R. Bachtell, *The Morton Arboretum*; submitted by Phil Nixon)

Trees Not Favored by Deer

Ash (*Fraxinus*)
 Beech (*Fagus*)
 Birch (*Betula*)
 Catalpa (*Catalpa*)
 Cedar (*Juniperus*)
 Chestnut (*Castanea*)
 Cypress (*Taxodium*)
 Dawn redwood (*Metasequoia*)
 Ginkgo (*Ginkgo*)
 Hemlock (*Tsuga*)
 Ironwood (*Ostrya*)
 Larch (*Larix*)
 Locust, black (*Robinia*)
 Locust, honey (*Gleditsia*)
 Mimosa/silk tree (*Albizia*)
 Redbud (*Cercis*)
 Sassafras (*Sassafras*)
 Smoketree (*Cotinus*)

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Trees Not Favored by Deer (cont.)

Sourwood (*Oxydendrum*)
 Sweet gum (*Liquidambar*)
 Spruce (*Picea*)
 Sycamore (*Platanus*)
 Tree lilac (*Syringa reticulata*)
 Tuliptree (*Liriodendron*)

Shrubs Not Favored by Deer

Barberry (*Berberis*)
 Boxwood (*Buxus*)
 Coralberry (*Symphoricarpos*)
 Forsythia (*Forsythia*)
 Juniper (*Juniperus*)
 Kerria (*Kerria*)
 Lilac (*Syringa*)
 Oregon-grape (*Mahonia*)
 Smoke bush (*Cotinus*)
 Snowberry (*Symphoricarpos*)
 Spicebush (*Lindera*)
 Spirea (*Spiraea*)
 Sweet shrub (*Calycanthus*)
 Witch-hazel (*Hamamelis*)

Groundcovers Not Favored by Deer

Ajuga (*Ajuga*)
 Barren strawberry (*Waldsteinia*)
 Bergenia (*Bergenia*)
 Bunchberry (*Cornus*)
 Catmint (*Nepeta*)
 Epimedium (*Epimedium*)
 Ferns (various species)
 Ginger (*Asarum*)
 Indian strawberry (*Duchesnea*)
 Juniper (*Juniperus*)
 Lady's mantle (*Alchemilla*)
 Lamium (*Lamium*)
 Lily-of-the-valley (*Convallaria*)
 Lily turf (*Liriope spicata*)
 Lungwort (*Pulmonaria*)
 Mosses
 Pachysandra (*Pachysandra*)
 Potentilla (*Potentilla*)
 Sedum (*Sedum*)
 Sempervivum (*Sempervivum*)
 Snow-in-summer (*Cerastium*)
 Sweet woodruff (*Asperula*)
 Vince (*Vinca*)
 Violet (*Viola*)
 Wild strawberry (*Fragaria*)
 Willow (*Salix*)

Perennial Vines Not Favored by Deer

Akebia (*Akebia*)
 Bittersweet (*Celastrus*)
 Clematis (*Clematis*)
 Grape (*Vitis*)
 Honeysuckle (*Lonicera*)
 Ivy, Boston (*Parthenocissus*)
 Silver lace vine (*Polygonum*)
 Trumpet creeper (*Campsis*)
 Virginia creeper (*Parthenocissus*)
 Wisteria (*Wisteria*)

Deer-Resistant Hardy Bulbs

Allium (*Allium*)
 Chionodoxa (*Chionodoxa*)
 Colchicum (*Colchicum*)
 Crown imperial (*Fritillaria*)
 Crocus (*Crocus*)
 Daffodil (*Narcissus*)
 Eranthis (*Eranthis*)
 Fritillary (*Fritillaria*)
 Grape hyacinth (*Muscari*)
 Narcissus (*Narcissus*)
 Puschkinia (*Puschkinia*)
 Scilla (*Scilla*)
 Snowdrop (*Galanthus*)
 Snowflake (*Leucojum*)

Deer-Resistant Annuals and Biennials

African daisy
 Ageratum (*Ageratum*)
 Alyssum (*Lobularia*)
 Campanula (*Campanula*)
 Candytuft (*Iberis*)
 Forget-me-not (*Myosotis*)
 Four o'clock (*Mirabilis*)
 Foxglove (*Digitalis*)
 Heliotrope (*Heliotropium*)
 Larkspur (*Delphinium*)
 Lobelia (*Lobelia*)
 Marigold (*Tagetes*)
 Mimulus (*Mimulus*)
 Morning glory (*Ipomoea*)
 Moonflower (*Ipomoea*)
 Nasturtium (*Tropaeolum*)
 Petunia (*Petunia*)
 Poppy (*Papaver*)
 Salvia (*Salvia*)
 Snapdragon (*Antirrhinum*)
 Stocks (*Matthiola*)
 Sunflower (*Helianthus*)

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Deer-Resistant Annuals and Biennials (cont.)

Sweet William (*Dianthus*)
 Thistle (*Cirsium*)
 Tithonia (*Tithonia*)

Deer-Resistant Hardy Perennials

Aconite (*Aconitum*)
 Alyssum (*Lobularia*)
 Anemone (*Anemone*)
 Artemisia (*Artemisia lactiflora*)
 Astilbe (*Astilbe*)
 Bee balm (*Monarda*)
 Bergenia (*Bergenia*)
 Black-eyed Susan (*Rudbeckia*)
 Butterfly weed (*Asclepias*)
 Columbine (*Aquilegia*)
 Coreopsis (*Coreopsis*)
 Crane's bill (*Geranium*)
 Cyclamen (*Cyclamen*)
 Daisy (*Chrysanthemum*)
 Dame's rocket (*Hesperis*)
 Fleabane daisy (*Eirgeron*)
 Foam flower (*Tiarella*)
 Gentian (*Gentiana*)
 Geum (*Geum*)
 Goldenrod (*Solidago*)
 Hellebore (*Helleborus*)
 Hibiscus (*Hibiscus*)
 Iris (*Iris*)
 Jacob's ladder (*Polemonium*)
 Loosestrife (*Lythrum*)
 Lychnis (*Lychnis*)
 Lythrum (*Lythrum*)
 Marsh marigold (*Caltha*)
 Meadow rue (*Thalictrum*)
 Meadow sweet (*Filipendula hexapetala*)
 Peony (*Paeonia*)
 Phlox (*Phlox*)
 Pinks (*Dianthus*)
 Purple Coneflower (*Echinacea*)
 Rock cress (*Arabis*)
 Russian sage (*Perovskia*)
 Salvia (*Salvia*)
 Sedum (*Sedum*)
 Sempervivum (*Sempervivum*)

Deer-Resistant Hardy Perennials (cont.)

Snakeroot (*Eupatorium*)
 Sneezeweed (*Helenium*)
 Snow-in-summer (*Cerastium*)
 Soapwort (*Saponaria*)
 Toadflax (*Linaria*)
 Valerian (*Valeriana*)
 Veronica (*Veronica*)
 Violet (*Viola*)
 Yarrow (*Achillea*)
 Yucca (*Yucca*)

Deer-Resistant Herbs

Angelica (*Angelica*)
 Artemisia (*Artemisia*)
 Basil (*Ocimum*)
 Borage (*Borago*)
 Burnet (*Sanguisorba*)
 Catmint (*Nepeta*)
 Chamomile (*Matricaria*)
 Chives (*Allium*)
 Comfrey (*Symphytum*)
 Dill (*Anethum*)
 Fennel (*Foeniculum*)
 Feverfew (*Chrysanthemum*)
 Germander (*Teucrium*)
 Horehound (*Marrubium*)
 Hyssop (*Hyssopus*)
 Lamb's ears (*Stachys*)
 Lavender (*Lavendula*)
 Lemon balm (*Melissa*)
 Lovage (*Levisticum*)
 Mint (*Mentha*)
 Mullein (*Verbascum*)
 Oregano (*Origanum*)
 Parsley (*Petroselinum*)
 Perilla (*Perilla*)
 Rosemary (*Rosmarinus*)
 Rue (*Ruta*)
 Sage (*Salvia*)
 Santolina (*Santolina*)
 Savory (*Satureja*)
 Tansy (*Tanacetum*)
 Thyme (*Thymus*)

PLANT DISEASES

1997's Most Common Plant Diseases

The Bi-State Horticulture Conference in Moline on November 5 was the rebirth of an annual conference to address the concerns of landscapers in the northern areas of Illinois and Iowa. Among others, I was asked to speak at the conference with my Iowa Plant Clinic counterpart, Paula Flynn. Our topic was the ten most common tree and shrub disease problems in 1997.

The diseases we chose to discuss (not in order of importance) were cedar-apple and related rusts, anthracnose, oak wilt, *Verticillium* wilt, ash decline, *Sphaeropsis* blight of pine, *Rhizosphaera* of spruce, *Cytospora* of spruce, black knot of plum, and environmental or abiotic disease.

Of course, Paula and I had a time limit to consider for our talk, but based on what I saw at the Illinois clinic this year, I would probably add *Phytophthora* root rot, *Phomopsis* of juniper, pine wilt, white pine decline, and *Dothistroma*/brown spot on pine to this list. If you are aware of other diseases that were particularly bothersome, drop me a line and I will make time this winter for literature searches and to prepare material for next year's *Home, Yard and Garden Pest Newsletter*. It is not always possible to do a thorough job researching articles in the midst of the busy clinic season. Send in your ideas now so that we can better serve you. (Nancy Pataky)

Changes at the Clinic for 1998

The 1997 season was a good one at the Plant Clinic in terms of sample volume—we handled just over 3,000 samples this year. In terms of turnaround time, it was one of the worst years in the past twenty. Part of the reason for our problems was the timing of the greatest influx of samples. Because of the extended cool, wet spring and early summer, plant problems were thriving for all of June and half of July. Generally the heat of summer slows things down enough that clinic staff can catch up. That never happened this year and we were behind from mid-June to closing.

Action has been taken to try to increase staffing for 1998. Nothing has been promised, but hopes are high for additional help in the areas of plant pathology, entomology, and weed science.

Beginning in 1998 *payment must accompany the samples*. We do not have a separate billing office at the clinic and to institute one would double existing fees. Far too much staff time is spent on billings and associated paperwork. Payment sent with the samples should free up office staff to help decrease turnaround time.

As you know, insect samples were also processed at the clinic this year and will continue for 1998. These samples will be subject to the same \$10 fee. Insect samples are handled by entomologists, but the paperwork and letters are processed by clinic staff.

We look forward to a more efficient season in 1998 and encourage any helpful suggestions you can offer. Send them to Nancy Pataky at N533 Turner Hall, 1102 S. Goodwin, Urbana, IL 61801 or npataky@uiuc.edu. (Nancy Pataky)

Home, Yard and Garden Pest Newsletter is prepared by Extension specialists from the University of Illinois at Urbana-Champaign and the Illinois Natural History Survey. Information for this newsletter is gathered with the help of staff members, Extension field staff, and others in cooperation with the USDA Animal and Health Inspection Service.

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