



Garden CHECK

As the winter holidays approach, think about how you can use houseplants as living decorations to enliven the celebration.

Celebrating the harvest

The warm hues of fall are perfect for the Thanksgiving table. An obvious choice is the so-called Thanksgiving cactus. Actually one of several species and hybrids in the genus *Schlumbergia*, these succulent jungle natives can be collectively called "holiday cactus." You'll see these plants marketed heavily in the weeks leading up to the major holidays, including Thanksgiving, Christmas, Hanukkah and Easter. Recent breeding work has resulted in selections that blossom much more freely than their forebears and come in a wider array of bloom color. Look for plants with salmon, burnt orange, peach or butter-yellow blooms to complement your fall decor.

Like poinsettias, the succulent jungle cactus sets flower buds in response to

long nights. My experience is that soil dryness helps the process along. The plant you purchase will have been manipulated to bloom under artificial light conditions. Once it settles into a normal growth pattern in the home, you may find it naturally blooms later or earlier than when you bought it.

To try to make the plant bloom at another time of year, make sure the dark period is continuous for 14 hours, starting about 10 weeks before the desired bloom time. Until then, interrupt the darkness interval midway with bright light for an hour a day. This will prevent the plant from initiating flower buds. This is not exact science, but in time you'll learn how your particular plant responds. Some plants will bloom several times during the year regardless of the light. In that case, enjoy the bonus!

Kalanchoë is another easy-to-grow succulent with colorful flowers. For the fall, find a plant sporting colors of red, yellow, or orange. Kalanchoë also comes in white, yellow, purple, and pink—colors suitable for winter and New Year's color schemes. Bi-colors are becoming available, too. The long flowering period of three to five months makes kalanchoë an especially appealing houseplant.

Wintering the holiday season

The traditional winter holiday colors of green and red are easy to come by in living plants. Accents of white and clear yellow can set them off to their best advantage. The all-time favorite poinsettia now offers a wide palette of colors.

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THINGS TO DO THIS MONTH.

- Dig summer bulbs and store inside for the winter.
- Cut back perennials and compost. Save perennials and ornamental grasses with winter interest. Cut those back in the spring.
- Winterize lawn mowers and other equipment.
- Use a preemergent herbicide to control problem winter annuals (such as henbit, common chickweed, brome-grasses, pepperweed and shepherd's purse) in landscape beds.
- Remove all rubbish and dead plants or shred and add to the compost pile.
- Rake and shred leaves as they fall. Incorporate into the garden, add to the compost pile or use as mulch.
- Before the ground freezes, give evergreens a final watering.
- Dig the hole for a live Christmas tree if you plan to get one and fill the hole with leaves to keep it from freezing.
- Cover tender perennials with loose mulch such as evergreen boughs.
- Store your fresh Christmas tree in a bucket of water in a shady, protected location. Re-cut the stem before bringing indoors.



HOLIDAY DECOR: DECK THE HALLS WITH PLANTS APLENTY *(continued from page 1)*

Available in varying qualities of red—from orangey scarlet to burgundy—to pinks, whites and lemony yellows, poinsettias also come in a marbled version—a vibrant color striated with white. The newest development has been the rose-type poinsettias, the crinkled leaves and doubled bracts of which give the impression of a large garden rose in full bloom.

Paperwhites, a popular bulbed, spring-flowering plant with white accents and strong vertical lines is a type of narcissus especially easy to force (see directions below). Paperwhite bulbs require no prechilling and their bloom fills a room with fragrance. Forcing instructions often are printed on the paperwhite packaging.

Visit a nursery. If you're lucky, you may find a bushy little holly plant loaded with bright red berries. The added bonus is that, after using the plant as decoration, you can plant it in the landscape. Make note of the variety so you can be sure to provide her (the females have the berries) with a pollinator male plant to ensure good fruit set outdoors. Another nursery find might be a small pine, spruce or fir tree. Just as with a "live" Christmas tree, though, these nursery plants fare better if kept in the house no longer than two weeks. After that, hold the plants in an unheated building, watering occasionally until the ground is ready to plant in spring.

One of the most striking plants for indoor color is amaryllis. The huge bulb is at its best in a pot that is barely large enough to hold it. The range of colors and flower forms is breathtaking, too. The large, velvety, trumpet-like flowers come in just about any color from white to cream and scarlet to richest red.

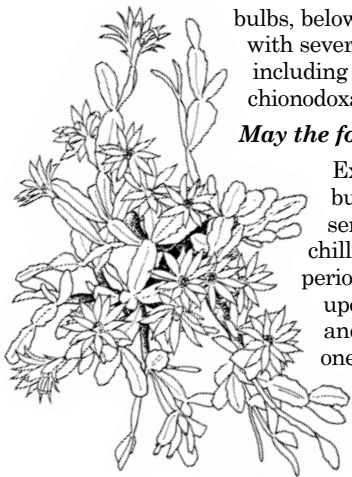
Ring in a bright new year

Greet New Year 2003 with bright and bold colors to enliven the festivities. Look to the hot pinks and lavenders of the ever-popular cyclamen and forced spring hyacinth bulbs to jolt fireworks tone into your decor. Bring in electric yellow with

forced daffodils and crocus (see how to force bulbs, below). Bright blues or pinks are possible with several other species of spring bulbs, including chionodoxa, scilla and Greek anemone.

May the force be with you

Except for paperwhites, most spring bulbs require a chilling period before sending up shoots and flowers. This chilling period averages 14 weeks, depending upon species and variety. The easiest and quickest bulbs to force are the ones that bloom earliest outside. These include hyacinth, large-flowered crocus, chionodoxa, scilla, Dutch iris, winter aconite, snowdrops and grape hyacinth. Tulip selections with short chilling requirements



Christmas Cactus

include 'Brilliant Star' (scarlet), 'Christmas Dream' (rosy red), 'Joffre' (yellow), and 'Merry Christmas' (carmine red). Miniatures daffodils with the least required chilling time include 'February Gold' and 'Tete-a-Tete' (both yellow).

To chill, first plant the bulbs in the display container and place the container in the refrigerator for the prescribed time. Once returned to room temperature, most will bloom within a month or two. Forced bulbs develop best and have the longest lasting flowers when in a relatively cool room with bright, indirect light.

The Netherlands Flower Bulb

Information Center/USA (<http://www.bulb.com>) has a wonderful Web site with details on how to force bulbs as well as recommendations for the best species and varieties.

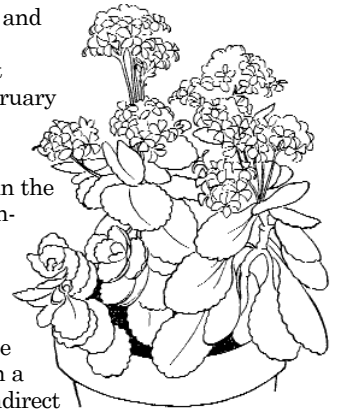
TLC for holiday houseplants

Houseplant care for the holidays is similar to those of any other houseplant at any time of year. However, three factors may make the process more troublesome this time of year—slower lower growth, low humidity and cold drafts.

Slow growth translates into decreased water use. It's easy to overwater houseplants in the winter. Don't go by a calendar date when deciding when to water. Use the finger test. If the surface of the soil is dry to the touch, water the plant thoroughly, let some water run out the drain hole, then empty the saucer. Standing water and too frequent watering cause root rot—the most common cause of houseplant death.

Low humidity levels in a heated home can cause leaf edges and tips to brown or scorch. If the temperatures are high, too, spider mites can be a problem. Raise relative humidity around your houseplants by setting them on trays filled with pebbles and water. Be sure, however, that the water level does not reach the bottom of the pots; otherwise, you invite root rot.

Position your houseplants in an area that gets the right light but indirect sunlight. Avoid places in which outside doors can let in chilling drafts. When it comes time to deliver plants as gifts, be alert to the temperature between your house and the recipient's. Even 40 or 50 degrees Fahrenheit can cause foliage and flowers to wither or fall off. Place the plant in a large paper bag (a department store shopping bag is good) that is roomy enough so the leaves don't touch the sides. Fit another bag over the top to keep out drafts. Warm up the car before you taking the plants out to it. Transport the plants in the heated passenger compartment, not the unheated trunk or truck bed. Avoid leaving the plants in an unheated car.



Kalanchoe



PREPARING THE WINTER POND

Now that we are in the midst of fall, it is time to prepare garden ponds for winter. The proper combination of plants, fish and water movement results in a balanced pond ecosystem throughout the growing season, but few gardeners realize that ponds must be balanced in winter as well.

During winter, despite all outward appearances, even when the water is frozen, the pond remains active. Fish, frogs, and other aquatic life are especially sensitive to poor water quality during the winter. A build-up of leaves and other organic matter can cause an imbalance, reducing oxygen to dangerously low levels and releasing poisonous hydrogen sulfide.

Do not let debris sit in your pond all winter. Use a net to cover the pond and prevent falling leaves from accumulating. By netting leaves, you also reduce the burden on the skimmer box.

Reduce sludge buildup with a bacterial "cleaning" product such as Pond Care Pond Zyme Plus or Microber-Lift's Autumn Prep. Both products contain bacteria that digest dead algae and sludge that accumulate in filters and at the bottom of the pond. These products are completely safe and

help keep the water garden clean. They are especially effective at reducing the sludge and waste buildup hidden behind and underneath rockwork.

Water gardens with depths of 24 inches or more can house fish all winter. Use high protein fish food during the growing season to help fish build up a reserve of fat. When the water temperature reaches the low 60s, decrease the amount of food and feeding frequency to one to three times per week. Use a food with protein content of 25 to 32 percent. A wheat germ-based food is good because it is easily digested. Once the temperature drops below 50 degrees, stop feeding altogether until spring, when the water temperature is consistently above 50 degrees.

To overwinter fish, keep a small area free of ice so toxic gases produced by decomposing organic matter can escape. If you don't want to go out each day to break up the ice, use a pond heater or deicer. Be sure to use an energy-efficient and thermostatically controlled product. You should be able to find a heater that operates at only 100 watts.

Another way to keep a small hole in the ice is to operate an air pump with an air diffuser. The constant motion of air bubbles through the water will prevent ice from forming.

In landscape beds it is fun to enjoy plant structure all winter long, but in the water garden, cut back plants early to reduce the decaying organic matter they add to the pond. Trim marsh and bog plants before the frost hits. Pull out hardy water lilies, trim off all the leaves and put all potted plants into the deepest area of the pond.

Stop operating your pump in mid-December. As water freezes, it expands and could cause internal damage to equipment. Place pumps, filters and other mechanical equipment in an area where they won't freeze (below the freeze line) or remove them completely from the pond. Keep pumps submerged in a container of water to prevent the seals from drying out.

By properly putting your garden pond to bed, you will be able to enjoy its reemergence next spring!

The preceding article was adapted from an article entitled "Winter Pond Preparation" by Kip Northrup, originally published in The Michigan Landscape, September/October 2002.

—Susan Barton

MAKING YOUR OWN MULCH

Here's a suggestion: use shredded leaves for mulch in your landscape beds. Shredded leaf mulch creates a natural woodland-garden look and supplies important organic matter.

You can make your own mulch this fall with all the leaves that fall on the lawn and landscape beds. When you cut the grass, bag the clippings and shredded leaves to use as mulch.

Many of the leaves that fall onto landscape beds are large and slow to decompose. They don't make good mulch;

instead, they cover and smother the perennials that grow below. So rake leaves from the beds, run over them with a mower (with attached bag) and spread the shredded leaves back on the beds around the perennials. Give it a try. See if you like the "natural" look!



— Susan Barton



Halloween and Thanksgiving, pumpkins and gourds, candy apples and evenings around the fire all help mark significant changes in the season. Halloween originates from the ancient Celtic festival of Samhain, a celebration to appease the gods so they would provide protection during the cold, dark months ahead. Flowers, once gracing our summer landscapes and gardens, now are fruits (such as pumpkins and apples) and seeds. Short day length and colder temperatures have transformed the vegetation landscape, and insects, birds and other pollinators that made the fall bounty of fruits and seeds possible have had to adjust.

Many bees and other insects die, leaving their eggs or pupae to lie dormant until the warm months come. These are tucked away in sheltered places—behind bark, under dead leaves, buried in soil—where they are protected from frost until spring, when metamorphosis and active life can continue. Other insects survive as adults, hidden in similarly sheltered spots. A few are able to add an anti-freeze compound to their blood to keep from freezing. Many will die but enough survive until conditions become favorable.

In contrast, some pollinator species undertake astonishing journeys to avoid unfavorable weather conditions. Monarch butterflies and rufous hummingbirds wing thousands of miles across North America. Long-nosed bats make shorter, but no less important, migrations over hundreds of miles of desert. For these migrants, national borders are irrelevant. Their journeys tie together the environment of our entire continent, for as they travel they pollinate flowers and contribute to long-distance gene transfer that helps to keep plant communities healthy.

Long distance travelers

The monarch butterfly (*Danaus plexippus*), called *Mariposa monarca* in Mexico, has arguably the most remarkable migration of any creature. During the summer, monarchs may be found as far north as central Canada, but as summer fades, millions of butterflies head south towards a few small patches of forest in the mountains of Michoacan, Mexico. Some fly more than 3,000 miles, taking more than two months to complete the journey. There are also many smaller overwintering sites on the coast of California, but the Mexican sites are the winter home

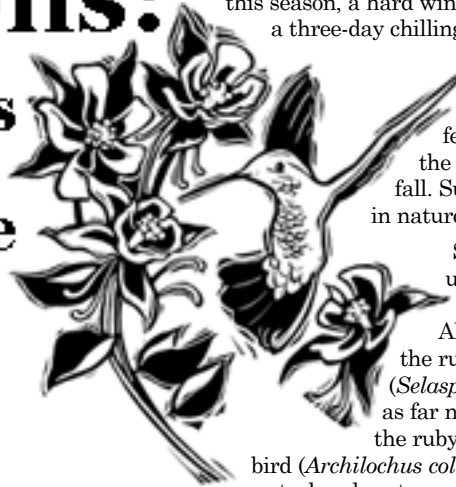


Amazing Migrations:

Pollinators on the Move

for more than 99 percent of the population. In this sun-warmed land, the monarchs gather to overwinter in the cool, stable conditions provided by forests of oyamel fir (*Abies religiosa*).

Surviving adults will begin the journey northward next spring. The return migration is undertaken in two generations. As they fly north from Mexico, the butterflies lay eggs on the flowering milkweed (several species of *Asclepias*). They may lay eggs for 1,000 miles before dying. The generation born from these eggs will fly further north, again as the milkweed flowers. The monarchs that reach Canada may be two generations removed from those that overwinter in Mexico. Unfortunately this season, a hard winter freeze followed by a three-day chilling rain devastated winter survival, and then widespread drought resulted in fewer offspring to make the return migration this fall. Such cycles are common in nature.



Some hummingbirds undertake an equally impressive trek. Along the West Coast, the rufous hummingbird (*Selasphorus rufus*) breeds as far north as Alaska, and the ruby-throated hummingbird (*Archilochus colubris*) breeds across central and eastern parts of the continent

into southern Canada. Both species overwinter in Mexico, where local names include *chupamirto dorado* and *colibri rufo*. To reach their winter territory, some birds travel well over two thousand miles. Along the migration route, they stop at flower patches to lap up carbohydrate-laden nectar and feast on fat- and protein-rich insects that together provide energy for the exhaustive flight. Hummingbirds are known to live for over a decade. To have completed this annual migration so many times is a pretty astonishing achievement for a bird that weighs less than a nickel!

In the Southwest, deserts span the border between Mexico and the United States, as do the journeys of bats that pollinate the saguaro cacti and agave. The lesser long-nosed bats (*Leptonycteris curasoae*) overwinter in Mexican caves and migrate several hundred miles north into southern Arizona and New Mexico on the crest of a floral wave as warmer temperatures and longer days cause the deserts' flowers to bloom.

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AMAZING MIGRATIONS: POLLINATORS ON THE MOVE *(continued from page 4)*

Protecting overwintering sites and nectar corridors

To help maintain the phenomena of migrating pollinators, we need to ensure the survival of three types of habitat: summer breeding areas, overwintering sites, and nectar corridors and rest stops along the way.

Some pollinators are specific about which plants they forage on in their summer habitats. For example, agave flowers are a key food source for long-nosed bats. We can protect the agave that remain and plant more. For other pollinators, we can provide a range of nectar sources or the larval host plants. These types of activities can occur in parks, wild areas, on farms and in our own backyards.

The sites at which monarchs gather, hummingbirds overwinter, and bats roost must be protected from development and agricultural change. If these places disappear, so too could the pollinators. For example, some monarch forests in Mexico are protected by law, but most are threatened by clearance. Many of the Californian sites are in prime development areas, and city or state regulations offer only limited protection.

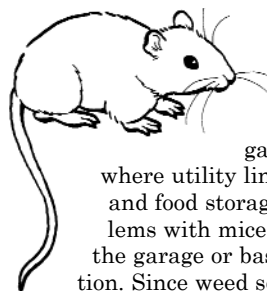
In addition to a secure destination, migrating pollinators need rest stops along the way. Rufous hummingbirds, for example, cannot complete the entire journey on one tank of nectar and insects. Monarch butterflies need milkweed on which to lay their eggs to ensure that the next generation continues the migration. Sustaining the migrants means ensuring that the plant resources are available along their route. Patches of nectar-rich habitat act as stepping stones that the pollinators can move between, together forming nectar corridors across landscapes altered by agriculture and development.

—Dewey Caron

A MOUSE MAKES A LOUSY HOUSEGUEST

Although the house mouse is remarkably well-adapted for living year-round in homes, homeowners are especially likely to notice the tiny rodent during fall and winter, following their movement indoors in search of warmth, food and shelter. Once mice become established indoors, they can be difficult to control.

Nocturnal creatures, mice are not readily observed. What we do notice is their droppings (1/3- to 1/4 inch long, dark, and pointed at one or both ends); sounds of their running, gnawing or squeaking; or damage to stored food or materials they use for nesting. Unlike rats, mice forage only short distances from their nest, usually not more than 10 to 25 feet, especially when food and shelter are adequate. Mice feed on a wide variety of foods but prefer seeds and cereal grains. Mice are “nibblers” and may make 20 to 30 visits to different food sites each night.



The best way to keep mice out is to prevent entry. Mice can squeeze through openings no wider than the diameter of a pencil (1/4-inch). Seal cracks and openings under entry and garage doors, around windows, vents, and where utility lines enter the structure. Good sanitation and food storage practices are helpful in reducing problems with mice. Bird seed and pet food bags stored in the garage or basement are especially prone to infestation. Since weed seeds are a favored food and also serve as rodent harborage, eliminate weeds and unnecessary vegetation next to the foundation. However, because mice are able to occupy such small nesting areas and survive on minute amounts of food, sanitation alone will not eliminate an existing infestation.

To rid your premises of mice, you have two options: traps or toxic baits (rodenticides). When you suspect only a small number of mice, traps are a better option than rodenticides; traps are less hazardous to use around children and pets. In addition, because mice are captured in the trap, you can dispose of them. Rodenticides could mean mice die in the walls or other such inaccessible areas, causing unpleasant odors.

Snap traps, multiple-catch traps and glue traps all have their proponents. Regardless of which type of trap is used, traps are best up against walls, behind objects and appliances, and in secluded areas where droppings, damage, and other signs of mice are evident. A dab of peanut butter or piece of chocolate make excellent baits. Dental floss or any soft, stringy material attracts pregnant female mice foraging for nesting materials.

Since mice forage only short distances from their nests, multiple trap placements as close to the mice harborage areas as possible increases captures. The biggest mistake is to use too few traps. Minor infestations in a garage or basement typically call for about 6 to 12 traps; moderate infestations often require dozens. Check traps and glue boards daily, and dispose of dead mice in sealed plastic bags. Wear gloves when handling rodent carcasses to prevent chance of spreading disease.

Toxic baits, known as rodenticides, are also available for mouse control. Several formulations, which contain seeds or grain as the attractant, come packaged for use in individual, sealed cellophane or paper packets; as loose bait; or molded into extruded blocks. Most rodenticides sold over the counter are anticoagulants that kill by interfering with normal clotting of the rodents' blood, causing the rodent to die from internal bleeding. Position baits in areas inaccessible to children, pets (especially dogs) and wildlife. For best results and safer use, confine mouse bait in an enclosed, tamper-resistant container.

—Dewey Caron



The 10 Best Reasons to Garden



(as if we needed any!)

Another growing season comes to a close. Looking back, were the results worth all the time and hard work?

You bet! Gardeners don't need a reason to work outside, hands deep in the earth, enjoying the changes in weather, interacting with wildlife and taking pleasure from the season-long progression of blooms.

Yet, if you have ever tried to explain to someone the benefits of gardening for people and the environment, you may have lacked concrete examples. Here are ten of the best reasons: Gardening

1 Fights inflation. A well-planned vegetable garden (30 x 50 feet) under optimum conditions can yield up to \$500 in produce! Gardening is an inexpensive recreational activity that can be shared by the entire family. Landscaping the yard can add 10 percent to 15 percent to the value of your property, and it is an investment that keeps growing.

2 Improves your family's nutrition. A garden can be a source of highly nutritious fruits and vegetables that taste fresher and better because you grow them yourself.

3 Conserves energy. Proper landscaping can reduce air conditioning bills in summer and heating bills in winter—helping to save both money and the environment.

4 Reduces pollution. The properly designed landscape reduces noise pollution, air pollution and chemical pollution.

5 Protects the environment. Gardens and landscapes can be havens for wildlife, supplying food, shelter and nesting or breeding sites. Never take more from the environment than you return to it. If you heat with wood, plant at least as many trees as you cut down, if not on your property, then at a school, park or other public place.

6 Conserves water. Especially if you use drought-tolerant plants, which require less water. Lawns require a lot more water to get established and to maintain the green, but can be allowed to go dormant in Delaware.

7 Improves our educational system. Kids learn from more people and sources than with teachers in classrooms. Giving children plants and teaching them to care for them teaches responsibility and a respect for nature. Delaware Cooperative Extension sponsors 4-H gardening projects and school gardening program.

8 Enhances the community. It makes your neighborhood more attractive and inspires others to do the same. If you have no space to plant, put a geranium or zinnia in a window box or patio planter. Any greenery makes our lives better.

9 Boosts your health and well-being. Research shows that gardening is an ideal form of exercise because it involves physical exertion as well as other merits. Not only does gardening provide physical activity, it also helps to relieve many of the stresses and tensions of life. Gardening provides an adequate and challenging workout, but is not as stressful to the body as other exercise options.

Gardening also incorporates many important elements of accepted exercise such as stretching, repetition and movement. While gardening, observe the proper techniques for lifting objects, bending and carrying.

10 Shows you care. Sharing your horticultural skills or your produce and flowers with a friend brightens both your lives. Try sharing produce with a stranger—someone in a nursing home, half-way home, local food bank or a dining room for the homeless.

Developed from an idea originally set forth by Diane Relf, Extension specialist in environmental horticulture at Virginia Tech University.



MAKE EVERY DROP COUNT: DRIP IRRIGATION FOR THE VEGETABLE GARDEN, Part II

You need not be a plumber to construct a drip irrigation system. Drip irrigation equipment typically is sold by garden supply stores. Names of dealers may be found in the yellow pages under "Sprinklers – Garden and Lawn" or "Irrigation Systems & Equipment." For the first year, try installing drip irrigation on only a few rows of vegetables. In time, you may want to extend irrigation throughout the garden.

How irrigation works:

Water pressure in most homes ranges from 20 to 60 pounds per square inch (psi). A drip system operates at a lower pressure – 2 to 6 pounds psi. The pressure can be lowered by a pressure regulator (reducer) or by running the water through successive tubes of smaller diameter.

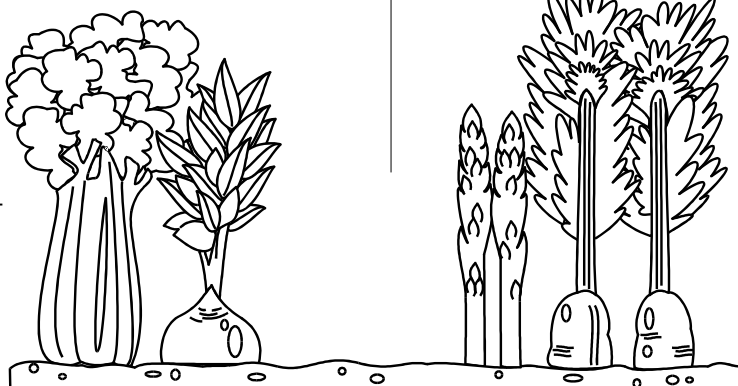
Water runs from the source to the garden, generally in a 5/8-inch diameter garden hose. Before water enters the drip tube, it should be filtered, usually through a fine (80-to 100-mesh) screen. This removes sand and suspended particles, which tend to clog the tiny holes in the drip tube. You must clean the filter regularly.

A polyethylene or polyvinyl chloride (PVC) supply pipe attaches by a hose adapter to the water supply. Lay the supply pipe on the ground at the edge of the garden, perpendicular to the rows. Because most vegetable gardens are rectangular, the supply pipe usually runs the width of the garden. A hole is punched or drilled into the supply pipe to provide an outlet for each row. Set the hole 4 to 8 inches to one side of the center of the row.

The supply pipe serves as a manifold from which water is transferred to the drip tubes (called line emitters) that run down the garden rows. The line emitters are cut the same length as the garden rows. They can be left on the soil surface or buried a few inches below the surface although it is usually easier to install the line on top of the ground. Emitter outlets should direct water toward the plants.

When rows are spaced closely together, such as 12 inches for beets or carrots, one line emitter can supply 2 rows. With rows spaced far apart, such as 60 inches for cucumbers, one line emitter for each row is needed.

The end of the drip tubes may be sealed with a simple overhand knot, or by doubling the hose back on itself and holding it with plastic tape, a clothes pin, or by pushing it through a short piece of plastic tubing.



A feeder tube is then inserted into each hole in the supply manifold; the other end is inserted through a hole punched in each line emitter. This hole is made in the center of the line emitter a few inches beyond the sealed end of the tube. The method of installation will vary with the kind of line emitter used. Follow manufacturers' instructions. The far end of the line emitter should be closed using the same method as employed at the head end, but first flush the entire system to remove soil particles that might be trapped in the supply pipe, feeder line, or drip hose.

Once a short-season crop like lettuce or beets is harvested a second planting can be made without disturbing the drip irrigation system.

Drip and mulch

Mulch placed over the line emitter will increase the effectiveness of watering and control weeds. Mulch also protects the polyethylene emitter tube from sunlight, which speeds up material breakdown. Tubes can be used for several years if cleaned and stored in a cool, dark place. Drip irrigation works well with organic mulches such as straw or grass clippings.

If a drip system is used with plastic mulch, locate the emitter 8 inches to one side of the center of the row. This precaution ensures that the plastic emitter hose is not be punctured when plants are set in the middle of the row. Black plastic mulch, 0.0015 inches (1-1/2 mil) thick, can be purchased at garden supply stores. Although it is possible to fertilize a crop by injecting soluble fertilizers into the supply pipe, there is a great risk of applying the wrong amount of fertilizer in a home drip watering system. Since the black plastic sheet reduces the loss of fertilizer by eliminating downward movement during heavy rainfall, the amount of fertilizer required can be reduced by about 25 percent.

After lime and fertilizer are applied and raked into the top few inches of soil, the drip system is installed and the mulch is placed on top. Dig trenches about 4 inches deep equidistant from the center of the row but 10 inches closer than the

(continued on page 8)



MAKE EVERY DROP COUNT: DRIP IRRIGATION FOR THE VEGETABLE GARDEN, Part II *(continued from page 7)*

width of the plastic. (Trenches should be about 38 inches apart for a 4-foot-wide sheet.) Then roll the black plastic mulch down the center of the row and hold in place by backfilling the trench. A garden hoe works well for making the trenches and for packing soil firmly against the edges of the plastic sheet.

Once the plastic is installed, it is easy to puncture it in the center of

the row and dig a small hole (about 3 inches in diameter) for the transplant. Space holes at intervals to correspond with the recommended between-plant spacing for the specific crop. This works ideally with all vegetable transplants such as tomatoes, peppers, and broccoli.

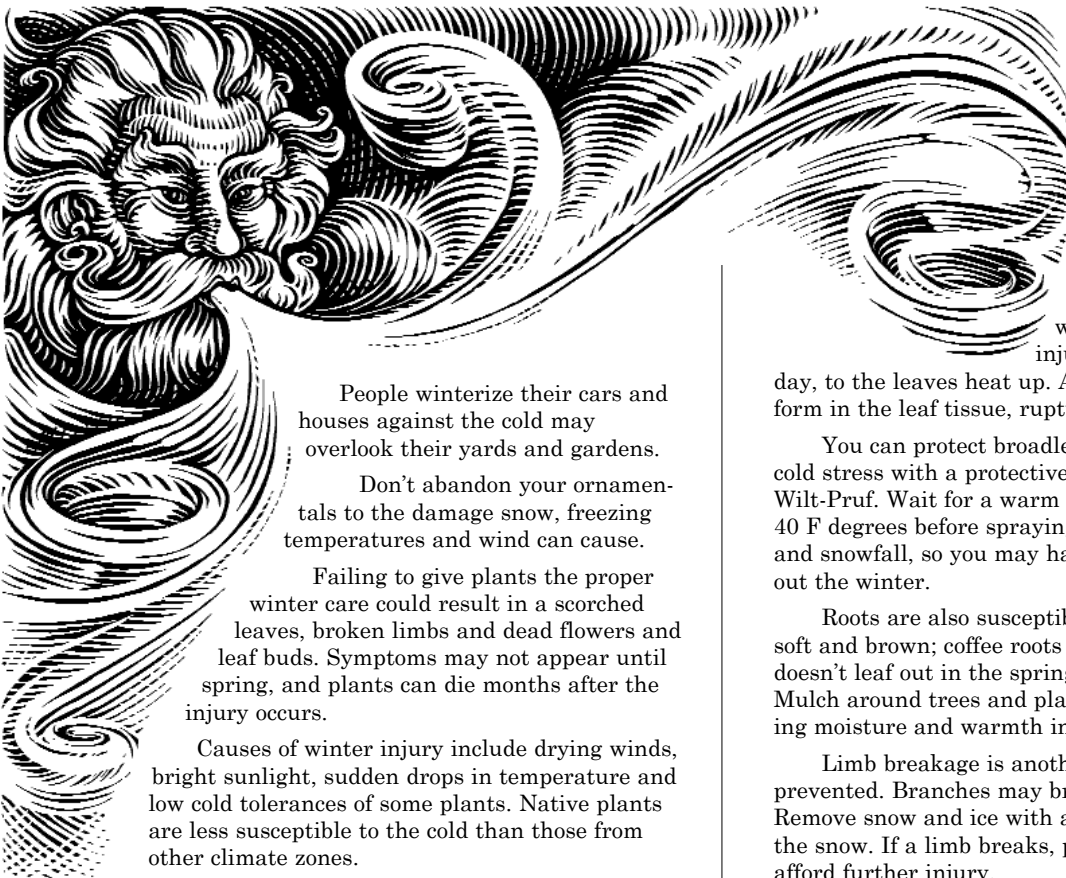
There is a slight risk of overwatering when tubing is laid under plastic. You can check wetness of the soil by cutting a

little “door” in the plastic for inspection.

For additional information on drip irrigation for your vegetable garden, contact your local Cooperative Extension Office.

— Gordon Johnson

DON'T LET OLD MAN WINTER BULLY YOUR PLANTS



People winterize their cars and houses against the cold may overlook their yards and gardens.

Don't abandon your ornamentals to the damage snow, freezing temperatures and wind can cause.

Failing to give plants the proper winter care could result in a scorched leaves, broken limbs and dead flowers and leaf buds. Symptoms may not appear until spring, and plants can die months after the injury occurs.

Causes of winter injury include drying winds, bright sunlight, sudden drops in temperature and low cold tolerances of some plants. Native plants are less susceptible to the cold than those from other climate zones.

Broad leaf evergreens are notorious for suffering winter injury. Rhododendrons, euonymus and

and andromeda require maximum protection in winter. Unlike deciduous trees, which are dormant, evergreens have foliage that loses moisture readily.

Plants need water during the cold months, especially when precipitation is minimal.

Cold temperatures combined with a day of bright sun can also injure broadleaf evergreens. During the day, to the leaves heat up. After the sun goes down, ice crystals form in the leaf tissue, rupturing the cell.

You can protect broadleaf evergreens to some degree against cold stress with a protective coat of a desiccant spray such as Wilt-Pruf. Wait for a warm spell when temperatures are above 40 F degrees before spraying. The coating marshes off with rain and snowfall, so you may have to be spray periodically throughout the winter.

Roots are also susceptible to the cold. Damaged roots appear soft and brown; coffee roots are firm and white. A plant that doesn't leaf out in the spring may have suffered root damage. Mulch around trees and plants. Mulch blankets the roots, keeping moisture and warmth in.

Limb breakage is another winter injury that can often be prevented. Branches may break under the weight of snow. Remove snow and ice with a broom, sweeping upward to lift off the snow. If a limb breaks, prune off the damage immediately to afford further injury.

— Jo Mercer



RECIPE FOR INDOOR PLANT CARE: WATER, LIGHT AND TLC

While spring is still something to dream about, avid gardeners can keep their hands in by pampering their indoor plants. Unexposed as they are to natural sunlight and rainfall, plants depend on their owners to keep them healthy and thriving.

Proper watering of house plants is the trickiest part of inside plant care. Overwatering promotes root rot, and under-watering, in most cases, will result in the plant's dying. The amount of water a plant requires depends on a number of variables, including the type of plant, the kind of soil, lighting conditions, environmental temperatures and the humidity in the home. The plant's growth cycle also enters into how much water is needed. During a time of active growth, a plant absorbs more water than during dormancy.

Another factor when determining a plant's watering schedule is the size and type of container. In which the plant is growing. For example, a porous terra cotta pot will absorb more water than a glazed or plastic one. The finger test is the best way to determine if your plant needs water. Insert your finger tip into the soil about a half inch. If the soil is dry at that depth, then it's time to water. Always water indoor plants with water at room temperature. Water that is too cold can damage the roots and foliage. Hot water kills the plant.



Most plants need to be transplanted into larger containers from time to time. Containers should be large enough to provide enough soil to support the plant, but not so large that it gets "lost" in the pot.

Some plants do not suffer from being pot-bound, but excessive roots can become a liability when they displace most of the soil in a container. When this occurs, the water-holding capacity is lost and more frequent watering is necessary.

During the winter months, houseplants get little light. Because of this, plants may look pale and new leaves appear small. Don't be fooled into thinking the plant needs more food—the opposite is true. Don't apply fertilizer in January and February.

Fertilize about four times a year as part of indoor plant care routine. Commercial plant foods are available in several forms, including liquid, soluble powders, spikes and granular.

Follow the label directions carefully. Over-feeding can be harmful to the plant.

Putting a little extra care into the indoor garden can keep an eager gardener busy until the spring thaw, and the plants will love the extra attention.

— Maggie Moor-Orth

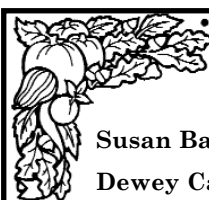
MARK 2003 CALENDARS FOR LONGWOOD SYMPOSIUM

"Responsible Water Use in the Garden" is the topic of the 2003 Longwood Graduate Program Symposium, which will take place Saturday, March 23. The annual all-day event, which will be jointly presented this year by the Longwood Graduate Program and the Winterthur, Museum, Gardens and Library, will be held at Winterthur near Wilmington.

Symposium topics will include an update on the state of the fresh water supply in the region, the critical concepts important in the process of responsible water use in the garden, and ways to create and improve garden spaces that conserve water. Also under discussion will be successful plant selection for waterwise gardening as well as an exploration of techniques to reduce water consumption in the garden.

Lunch is included in the cost for registration and a portion of the Winterthur gardens and museum will be available to symposium participants.

If you would like to be put on the mailing list to receive information, contact Gerry Zuka at 302-831-2517 or write to: The Longwood Graduate Program, 126 Townsend Hall, University of Delaware, Newark DE 19717-1303.



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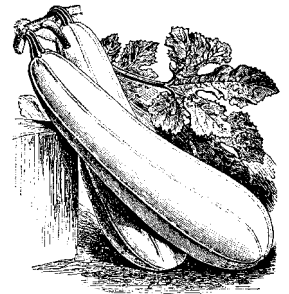
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FOUNDATION SPRAY TO KEEP PESTS AT BAY

Late fall pest control starts outside. In fall, crickets, boxelder bugs, earwigs, spiders, millipedes and other critters invade houses and other buildings seeking warmth and shelter. Spraying the foundation to runoff and dampening the adjacent 6 inches of soil is an effective pest control.

Caulking cracks and crevices in the foundation and around utility entrances such as gas lines will also help keep pests out. Check the clearance between outside doors and the floor. Weather-strip the bottom and sides of these doors to help keep out occasional insect pest.

Accumulations of decaying material such as fallen leaves and bark mulches along foundations make good hiding places for pests and provide food for them and their prey. If you see high numbers of insects along the outside foundation, you may have more of them getting indoors.

—Dewey Caron

RETURN SERVICE REQUESTED

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pesticide, always read the label and follow
directions carefully.

Call the Garden Line for help with home lawn,
garden, and pest questions:
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Kent Co. (302) 697-4000
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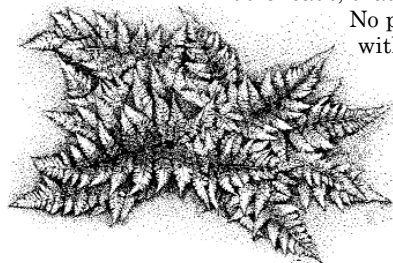
ANOTHER WINNING PLANT

Japanese Painted Fern (*Athyrium nipponicum* 'Pictum') has been selected
by the Michigan Nursery and Landscape Association to receive the 2002
Growers' Choice Award. With a hardiness zone range of 4-8, the Japanese
painted fern is also an excellent choice for Delaware gardens.

Ferns, one of the oldest know plants on Earth, have been adding light,
feathery texture to woodland gardens since before dinosaurs. The Japanese
painted fern is unusual because its 12-inch fronds have a silvery-gray color
that appears metallic and beautiful garnet-colored veins extend to the tip of
each leaflet.

A dramatic accent in the shade garden, Japanese painted fern combines
well with hostas, coral bells (*Heuchera* sp.), spring bulbs, astilbe and many
other shade plants. Japanese painted fern also makes a beautiful transition
plant in places where the garden bed borders a woodland because, if kept
moist, it tolerates some sun. It is also deer-resistant—a valuable quality in
many gardens.

Growing best in neutral to slightly acid soil rich in humus, Japanese
painted fern grows 12 to 18 inches in height and width. It is easily propagated
by division and forms dense clumps once established. Japanese painted fern
starts each season by sending up curled crosiers, sometimes called
fiddleheads, that unfurl into gracefully tapered leaves.
No pest or disease problems are associated
with this plant.



*Adapted from The Michigan Landscape,
September/October 2002.*

—Susan Barton