



CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

JANUARY 2014 COLUMN

Dear Master Gardener: I've heard that having plants in one's home helps purify the air. Is this true and if so, are there certain types of plants that are more beneficial than others?

According to NASA research, many common houseplants and blooming potted plants help fight indoor air pollution. Pollutants in homes and offices can come from synthetic carpeting, fabrics, laminated counters, plastic-coated wallpaper and other man-made materials. Through photosynthesis, plants are able to scrub considerable amounts of harmful gases from the air. As part of the photosynthesis process, plants absorb carbon dioxide and release oxygen; but researchers have discovered that many houseplants also absorb benzene, formaldehyde and trichloroethylene. No plant is beneficial for removing tobacco smoke. Most likely all plants are beneficial to some degree; however, testing has shown that some are more efficient cleaners for certain types of toxins than others. It cannot be assumed that all harmful pollutants can be removed by plants.

In a NASA study, plants were placed in sealed chambers, which were injected with chemicals. This study discovered that philodendron, spider plant and golden pothos were most effective in removing formaldehyde and gerbera daisies and chrysanthemums were very effective in removing benzene from the chamber atmosphere. Other effective air purifiers were bamboo palm, peace lily, ficus, Dracaena, Sanseveria, English ivy and Chinese evergreen species. The research also showed that plant leaves, roots and soil bacteria all remove trace levels of toxic vapors. The recommendation from the NASA studies regarding how many houseplants would be needed to improve air quality of an average house (1800 square feet) were 15-18 plants in 6-8 diameter containers. The plants NASA tested are:

- Hedera helix English ivy
- Chlorophytum comosum spider plant
- Epipremnum aureum golden pothos
- Spathiphyllum 'Mauna Loa' peace lily
- Aglaonema modestum Chinese evergreen
- Chamaedorea sefritzii bamboo or reed palm
- Sanseveria trifasciata snake plant
- Philodendron scandens 'oxycardium' heartleaf philodendron
- Philodendron selloum selloum philodendron
- Philodendron domesticum elephant ear philodendron
- Dracaena marginata red-edged dracaena
- Dracaena fragrans 'Massangeana' cornstalk dracaena
- Dracaena deremensis 'Janet Craig' Janet Craig dracaena
- Dracaena deremensis 'Warneckii' Warneck dracaena
- Ficus benjamina weeping fig

Dear Master Gardener: Two of my houseplants, a croton and aloe, have shiny, sticky leaves and some of the leaves of the croton are turning yellow. Although I don't see any insects, I was wondering if my plants have aphids and if so how I get rid of them.

Aphids are not commonly found on houseplants and are easy to see. They are approximately 1/16 to 1/8 inch long and have pear-shaped soft bodies with conspicuous legs and antennae. The ones found on houseplants are usually green. Your problem is most likely scale insects, which don't look like typical insects. Scales, which congregate on the undersides of leaves along the main veins, look like oval spots about 1/8 inch long, but their yellowish or greenish brown color makes them hard to see until the infestation is severe. Juveniles or "crawlers" are so tiny they are barely visible without magnification. Scales use needle-like mouthparts to feed on plant sap, secreting sticky honeydew as an end product of that process. If the infestation is severe the scales encrust the stems and leaves like lumpy blisters, and plants may yellow and die. Susceptible plants are aloe, aralia, croton, dracaena, ferns, India-rubber tree, ivies, and palms.

To control scales, gently scrub them off the leaves, using warm soapy water and a small brush, then rinse the foliage with clear tepid water. Treat severely infested plants with bifenthrin, permethrin, resmethrin, insecticidal soap, pyrethrins, disulfoton, imidacloprid, or plant oil extracts. You will need to apply at least two to three applications sprayed once every 10-14 days. Because their waxy covers are so impervious to insecticides, add a few drops of liquid soap or detergent to help the material slide under the edges of the "shells".

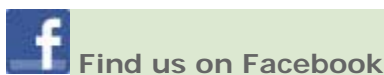
JANUARY GARDENING TIPS

- If your house seems empty now that the Christmas tree is gone, consider buying a large houseplant to replace it. Norfolk Island pines, many kinds of palms and weeping figs are some readily available choices. Consider the light needs of a plant you choose, to prevent leaf drop.
- If you had a live Christmas tree, bring it outdoors and cut off its branches. Lay them on top of bulb and perennial beds for extra winter insulation.
- It's too early to start seeds yet because most plants, including tomatoes, need only an eight-week head start. Now, however, is a good time to look through seed catalogs and choose and order seeds.
- Flower shops now have gorgeous Phalanaeopsis (moth) orchids for sale. Their blooms will last for six to eight weeks and will rebloom annually. They like an east or west-facing window and need infrequent but thorough watering. They look exotic but are easy to grow.
- Use sand or poultry grit on icy sidewalks. Commercial ice-melting chemicals are potentially harmful to nearby plants and grass.
- Keep poinsettias looking good by placing them near a sunny window and watering as soon as the soil surface feels slightly dry, before leaves start to wilt. This may be more than once a week! They are, however, very susceptible to root rot, so do not let them stand in water. Turn plants ¼ turn every week to keep growth symmetrical.

QUESTIONS OR COMMENTS?

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FEBRUARY 2014 COLUMN

Dear Master Gardener:

My friend gave me a baby spider plant from her parent plant, but I think I may have over-watered it because it doesn't seem to be doing well. How should I care for my spider plant and how does a person propagate the babies?

Chlorophytum comosum, also known as spider plant or airplane plant, is any easy houseplant to grow and enjoy. Most likely your spider plant has been over-watered, as it prefers partially dry to dry soil. It also does best with cool to average home temperatures and bright indirect light. Placing a spider plant in direct sunlight may cause the tips of the leaves to burn. Fertilize your spider plant and other houseplants from March through September.

Spider plants are easy to propagate. At the end of long stems, called runners, miniature plants, called plantlets, will develop following flowering. Plantlets often form short, white aerial roots while still attached to the parent plant. Do not remove a plantlet from the parent plant until it has roots. If you want to speed up root development, you can pin the plantlet down in another pot with soil and wait for the roots to form (this may take two to three weeks). After roots have developed, cut and remove the plantlet from the parent plant and place it in a pot. A professional potting soil containing sphagnum peat moss with little to no perlite is best.

Dear Master Gardener:

The poinsettia I bought for Christmas is dropping leaves and has what looks like small patches of cotton where many of the leaves attach to the stem. What is going on?

It sounds as if you are experiencing an attack by one of the most common plant insects, mealybugs. They are tiny (1/8 to 1/4 inches long), pale insects whose females and egg sacs are covered with a white, waxy substance. Although mealybugs have legs, they are sluggish and move very little. They tend to congregate in groups, like small wads of cotton, in leaf axils and on the undersides of leaves. They suck plant sap, causing stunted and distorted growth and leaf drop. They excrete a substance called honeydew that sometimes encourages sooty mold fungi. In addition to poinsettias, mealybugs are attracted to other plants; such as, philodendrons, coleus, ficus, jade, hoyo and cactus. Because the waxy substance on mealybugs repels pesticides, chemical control is difficult. Fortunately, handpicking can eliminate small infestations, as does "painting" the bugs with a cotton swab dipped in rubbing alcohol.

Dear Master Gardener:

Is it difficult to create a bonsai or am I better off just buying one and trying to maintain it?

The Japanese art of bonsai is a combination of horticulture, art and philosophy. The goal of bonsai is to produce a miniature planting that appears old and is visually balanced. The placement of branches, styling, and the pot all express symbolism and reverence for nature.

The five basic bonsai styles are: formal upright, informal upright, leaning, semi-cascade, and cascade. There are also advanced styles, which are derived from the five basic styles, but are best learned by joining a bonsai club. You are working with living plant material, which will need pruning throughout the growing season to maintain the style you have chosen. To be successful in achieving a mature bonsai with the appearance of an old tree in miniature, pruning is crucial.

The best plant material to use for bonsai should have small leaves or needles, attractive bark, and the trunk must give the illusion of maturity. The trunk should have a good sized diameter, but be in proportion to the remainder of the tree. The trunk should taper gradually toward the top of the tree. To give the appearance of age, the upper ¼ to 1/3 of the root structure of a mature bonsai is frequently exposed on the soil surface in the pot. Wire is used for shaping and twisting branches. There are special shallow pots for a bonsai tree and unless you have a round or square pot, a tree is never placed in the middle of the pot, but rather planted off-center in an oval, rectangular or free-form container. Your bonsai will need frequent repotting when it is young, maybe even twice per year until it is 5-10 years of age. Spring is the time for repotting, root pruning and pruning branches. The tree's growth rate will determine the frequency of repotting. Bonsai are styled from hardy, woody plants, which remain outdoors during all seasons of the year, so you will need to use a plant that is hardy to Zone 3. Junipers and maples are often used by beginners. They are maintained like any other landscape trees; although they may need to be watered at least once per day during the summer, as they are in shallow pots. Watering is critical to avoid permanently damaging the root system.

This is a very cursory answer to your question, and if you are serious about starting your own bonsai, it may be beneficial to check out a book on how to bonsai from the Brainerd public library.

If you are interested in bonsai and get the chance to visit Washington, D.C, the National Arboretum has one of the largest collections of bonsai and penjing (the Chinese counterpart) in North America. Their bonsai festival is the first week in May. The Minnesota Bonsai Society assists members in learning the art of bonsai. The club has special programs for bonsai beginners and offers a wide variety of programs and activities for all levels of bonsai skill. You can contact the club at: Minnesota Bonsai Society, P.O. Box 32901, Minneapolis, MN 55432. Their website is: <http://www.minnesotabonsaisociety.org/>

FEBRUARY GARDENING TIPS

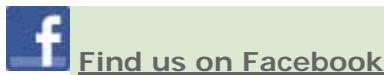
- Check houseplants for salt buildup, which appears as a crusty, white residue on soil surfaces and as a white ring on clay pots. Scrape off the white salt on soil surfaces. Then place the plant and pot in a kitchen sink, preferably one with a spray attachment, and gently and thoroughly water it until water runs out the bottom. Repeat this procedure after 20 minutes.
- Annual seeds that should be started in February because they germinate and grow so slowly are impatiens, petunias, wax begonias, pansies and gerbera daisies. Later in the month ageratum, lobelia and love-in-a-mist can be started.
- Over-watering is the most common cause of houseplant decline and death. One way that may prevent this is to place a plant in a pan of water at least two inches deep for 20 minutes, thereby watering it from underneath. Do not water for another week.
- Do not brush or shake frozen snow from shrubs. Doing so does more damage than does leaving the snow in place.
- Pruning of trees and shrubs should be done while they are dormant. In winter months the overall shape of the plants is clearly discernable and diseases are unlikely to be spread. Deep snow, however, can make pruning hazardous or impossible.

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MARCH 2014 COLUMN

Dear Master Gardener:

I have found some insects in my basement that I think are either millipedes or centipedes. Can they harm clothes or furniture? How can I get rid of them?

Millipedes and centipedes are arthropods related to insects. When found outdoors, typically under decaying leaf litter or other organic matter, they are considered beneficial. On the other hand, finding them in your home can be unnerving. Rest assured they are not harmful to food, clothes, furniture, or other items found in your home. They are usually found in basements and can enter your home through cracks in the foundation, around ground-level windows and under doors. Millipedes can be found indoors in early spring as they emerge from cracks and crevices where they spent the winter. Centipedes can sometimes be found in homes too, but usually when the weather is warm. A millipede is a 1-1 ½ inch, dark brown, worm-like creature with up to 400 very short legs. They are mostly active at night, usually hide under objects where it is dark and damp, and curl up tightly when touched or after it dies. House centipedes are more than one inch long, brownish or grayish-yellow, with a flattened body containing 15 pairs of long jointed legs attached along the sides. They also have a pair of long feelers, which extend from the head. You may see quick-moving centipedes running across a wall ceiling, or open room toward a dark area. Like millipedes, centipedes are also associated with damp conditions.

If possible, tolerate these beneficial arthropods and use insecticides as a last resort. Insecticides are unnecessary for controlling millipedes as they often die soon after entering homes because it is too dry. Centipedes are beneficial because they eat small insects, spiders and other arthropods. You can take some steps to reduce their numbers by caulking or sealing cracks and other openings in exterior foundation walls, around doors and ground-level windows by late summer. Remove leaf litter and decaying vegetation from around your foundation and thin foundation plantings to allow the soil to dry more quickly near the foundation. If millipedes are found alive inside a home, it is usually an indication of excessive moisture present; therefore a long term solution is necessary to dry the room (for example, a dehumidifier). Kill and remove centipedes and vacuum up millipedes as you see them. You can also set out sticky traps (for example, Roach Motel) on floors to catch centipedes in the area where you see them. Remove any unnecessary boxes, bags, or clutter that gives centipedes favorable places to hide. Caulk or seal behind baseboards and in cracks and crevices where centipedes like to hide.

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Dear Master Gardener:

I would like to make a dish garden with a southwestern theme and was wondering what plants would fit the bill.

Succulents are great plants for a dish garden. Succulents refer to a broad category of plants, which include cacti. They have thick fleshy leaves or stems, which serve as water storage organs to ensure survival under very dry conditions. In addition to cacti, some other succulents you may want to consider are: jade plant (*Crassula arborescens*), snake plant (*Sansevieria trifasciata*), medicine plant (*Aloe barbadensis*), century plant (*Agave americana*), Kalanchoes (*Kalanchoe blossfeldiana*), sedums (*Sedum* sp.), and hens and chicks (*Sempervivum* sp.). These plants do very well as houseplants because the relative humidity in most homes is usually low. Mix one part potting soil with one part coarse sand and sterilize. You can sterilize potting medium by moistening the soil mixture, covering it with aluminum foil to keep it from drying out while being heated, and place it in a 200° oven for about 30 minutes. Succulents require a bright sunny window.

When you group succulents and cacti together in a dish garden, choose plants that have a similar growth rate and similar water requirements. Since dish gardens rarely have drainage holes, it is important that you do not over-water the plants. Even if you have some pebbles at the bottom of the container to allow some drainage, any excess moisture will be drawn back into the soil and keep the roots moist for too long, possibly causing fungal or bacterial rots.

Dear Master Gardener:

In our yard we have an old apple tree that is a mess of tangles and dead branches. It produces only a few apples every other year but we like the way they taste. What can I do to restore it to health?

This sounds like a situation calling for pruning. Pruning is essential for reliable fruit production on apple trees. It also spaces out the fruit, allows sunlight to reach the fruit, increases air flow and focuses the tree's energy on producing bigger and tastier apples. It should be done every year. Your goal should be to have a tree with a strong central leader with evenly spaced side branches, wide at the bottom, narrower at the top. That is easier to accomplish with young trees, difficult, if not impossible, with older trees such as yours.

Start by arming yourself with good, sharp pruning tools, ideally a lopper and a pruning saw. Begin with branch removal. The DDDC formula for dead, diseased, damaged and crossovers, can be helpful. A dead branch cannot be restored, so remove it, all the way to its branch collar (the circular swelling where the branch meets its main limb). Diseased and damaged branches should be removed back to healthy wood. Crossovers are branches that rub against one another, or soon will, inviting insects and disease. Avoid topping or shearing the leader, which promotes excessive vegetative growth and produces poorer apples. Each year you will find new "water sprouts", fast-growing branches growing straight up - remove all of them. From this point on, further pruning decisions are judgment calls. Such things as proximity to buildings, lawn-mowing height and hazard situations will influence your decisions. Finally, remove ALL suckers, the vertical growth at ground level. You do not need to "paint" any cuts with wound dressing.

The best time to prune is late winter or early spring, while the tree is still dormant, usually late March or early April here in Crow Wing County. Prune early and do not be afraid to prune a lot. Many, if not most, apple trees produce a sizable crop only every other year. Pruning often induces heavier crops in the "off" years.

MARCH GARDENING TIPS

- If we have a March thaw this year, bulbs that emerge will survive, but flowers will most likely be lost for this year. Next fall mulch the bulbs more heavily or move them to a location less susceptible to fluctuating temperatures.

- March is a good time to propagate houseplants. For most plants take a 4-6 inch cutting with a sharp knife and remove the bottom 1-2 leaves, which is where most roots will form. Dip the cut end in rooting hormone and place it in moist soilless potting mixture. Keep well watered until a gentle pull indicates that roots are taking hold. Then repot in a more nutrient-rich soil and resume normal care.
- If you haven't had your soil tested in the last 5 years, do so as soon as the soil thaws. For a University of Minnesota test, Google "soil test UMN" for instructions or stop in at the county Extension office to pick up information. The current cost is \$17.00.
- If snow mold has been a problem in previous springs, stay off the lawn as much as possible until snow and ice melt. Then use a leaf rake on thawed soil to fluff up the grass and thereby increase air circulation to prevent mold.
- Vegetables that can be started this month in a bright sunny window or under grow lights: parsley, broccoli, early cabbage, cauliflower, celery and eggplant.
- Annuals that can be started now: Coleus, Dusty Miller, Pinks, Snapdragon, Verbena, Alyssum, Moss Rose and Salvia.
- Repot stored geraniums. Cut them back to 4-6 inches above the container and restart a watering, feeding and sunning program.

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APRIL 2014 COLUMN

Dear Master Gardener:

Can lily bulbs be planted in the spring? Are Asiatic or Oriental lilies better for this area?

Lily bulbs may be planted in fall or spring. When buying them locally, choose firm, plump bulbs with the roots attached. Whether you purchase them locally or by mail order, plant the bulbs as soon as possible and choose lilies that are hardy to USDA zone 3. Asiatic and Oriental lilies are the most popular types of lilies for northern gardens, with Asiatic being the easiest to grow. Zone 4 lilies, which tend to be the Oriental lilies, usually do well too if they are mulched well in the fall with 4-6 inches of loose, weed-free compost, chopped leaves, or wood chips.

Plant both Asiatic and Oriental lilies in full sun (6-8 hours of sunlight) in well-drained soil. We tend to have light, sandy soil in this area, so add organic matter to help hold onto nutrients and prevent them from becoming too dry. For the best effect, plant lilies of the same cultivar in groups of three or five bulbs, spacing them 8-12 inches apart. Plant small lily bulbs 2-4 inches deep and large bulbs 4-6 inches deep, measuring from the top of the bulb. Fertilize your lilies each spring with a 5-10-10 formula or a slow-release fertilizer, following the instructions on the label.

By planting a combination of early, mid-season, and late-blooming cultivars, you can have lilies flowering from mid-June through mid-September. Deadhead flowers as they fade, but do not remove stems or foliage as they provide nourishment to the bulb for next season's blooms. Here are just a few of the many lilies that grow well here:

Cultivars	Type	Color	Height (ft.)	Time of Bloom
Enchantment	Asiatic	orange	2-3	June
Connecticut King	Asiatic	yellow	3-4	June
Corsica	Asiatic	pink	3	June/July
Crete	Asiatic	deep pink	3-4	June/July
Dawn Star	Asiatic	cream	2-3	July
Black Beauty	Oriental	dark red	5-6	July/August
Journey's End	Oriental	deep pink	4-5	August
Stargazer	Oriental	crimson-red	2-3	August
Yellow Ribbons	Oriental	white/yellow	3-5	August
Casa Blanca	Oriental	pure white	4-5	August/September

Dear Master Gardener:

Are there any edible crabapples that are hardy in the Brainerd Lakes area?

The Chestnut, Centennial and Whitney crabapple trees are all hardy to USDA zone 3. The Chestnut Crabapple tree was developed by the University of Minnesota in the 1940s. It is self-pollinating, vigorous, hardy, and adapts well to different soil types. It is an excellent pollinator for other apples. This crabapple tree produces large, russeted crabapples that ripen in early September. Its creamy white flesh is fine-grained and crisp with a sweet, nut-like flavor that is great for fresh eating, cooking or making jams. The fruit stores for 4-5 weeks.

The Centennial Crabapple, another University of Minnesota variety, was introduced in 1957. It is a compact tree that grows to about eight feet, and is fairly scab resistant. Like the Chestnut, it is also used as a pollinator for other apple trees. It produces heavy crops of oval, large, juicy, red-over-orange crabapples that are excellent for fresh eating, apple butter, sauces, and spiced apples. The fruit ripens in mid to late August. The crabapples do not store well though.

Another edible crabapple is Whitney, which was introduced in 1869. This tree produces beautiful pink and white blossoms in spring and is also self-pollinating. Whitney is moderately resistant to fire blight and intermediate in resistance to cedar-apple rust. It produces a large harvest of red, golf ball size apples that have been described as "approaching sweet" and ripens in late August or early September. The flesh is juicy and slightly yellow. The crabapples may be eaten fresh and are also perfect for canning, preserving, pickling and spicing.

Dear Master Gardener:

I like the look of the red sumac I see along the highways every fall. Would they make good shrubs for my yard?

Staghorn sumac, whose scientific name is *Rhus hirta* or *Rhus typhina*, is beautifully colorful in the fall but, depending on where you would plant it, may not be a good plant for a yard. It is common in the eastern United States and Canada and as far south as Georgia. It gets its name, "staghorn", because the young twigs are covered with reddish-brown hairs that resemble the velvet on deer antlers. It is found in both tree and shrub form and grows from 15-25 feet in height and between 20 and 30 feet in width. It has long compound leaves that are green in summer and red-orange in fall. It produces tiny yellowish flowers in early summer and showy, erect, red fruiting clusters in the fall. Individual plants send up suckers that are clones of the parent so that you often see pillowy drifts of sumac at the edges of woods.

It is the aggressive suckering habit of sumac that may make it unsatisfactory for many yards, especially on small city lots. Its size, invasiveness and weediness make it unsuitable for foundation planting. On more rural lots it may be the ideal plant, for it thrives on poorer soils and on slopes, where it helps prevent erosion. It is ideal for dry, informal, naturalized areas, especially on the margins of woods where it can be allowed to spread. It has no serious pests or diseases. A cultivar named "Tiger Eyes", which is not as invasive, might be considered for smaller spaces and as a specimen plant.

Do not confuse staghorn sumac with poison sumac (*Toxicodendron vernix*), which is not common in Minnesota and which grows in wet, swampy areas and produces drooping clusters of greenish berries.

APRIL GARDEN TIPS

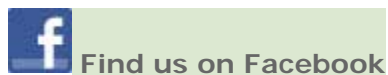
- The first coarse, grass-like weeds to emerge as the grass greens are not crabgrass. Crabgrass typically appears in the Brainerd Lakes in early June.
- Corn gluten meal is a natural substitute for synthetic pre-emergent herbicides for crabgrass. Apply it in late April at the rate of 20 pounds per 1,000 sq. ft. of lawn. Water it in well to activate the herbicide. CGM also provides nitrogen.
- Plant cool-season crops such as peas, lettuce, onions, kale and radishes as soon as the soil is workable.
- Don't get taken in by flashy ads for "miracle" plants such as zoysia grass, "hardy" Minnesota peaches, and princess trees. Buy from reputable local nurseries and legitimate mail order sources that stand behind their products.
- Begin to remove mulch from tender roses, bulbs and flowering perennials in slow stages as it thaws and dries.
- Prune shrubs grown for their foliage (dogwood, alpine current, burning bush, etc.) as soon as buds swell. Do NOT prune lilacs, forsythias, and azaleas until AFTER blooming.
- Start tomatoes from seed under lights now. It takes about 8 weeks for them to reach a size suitable for outdoor planting.
- Wait to prune out winter-burned sections of arborvitae until new growth is visible which might mask the brown foliage. Junipers, yews, pines and spruce also put out new growth, but later in the spring. Don't prune back to old wood because you can't be sure of new growth at that site and may end up with unsightly dead branches.
- If we have a March thaw this year, bulbs that emerge will survive, but flowers will most likely be lost for this year. Next fall mulch the bulbs more heavily or move them to a location less susceptible to fluctuating temperatures.
- March is a good time to propagate houseplants. For most plants take a 4-6 inch cutting with a sharp knife and remove the bottom 1-2 leaves, which is where most roots will form. Dip the cut end in rooting hormone and place it in moist soilless potting mixture. Keep well watered until a gentle pull indicates that roots are taking hold. Then repot in a more nutrient-rich soil and resume normal care. If you haven't had your soil tested in the last 5 years, do so as soon as the soil thaws. For a University of Minnesota test, Google "soil test UMN" for instructions or stop in at the county Extension office to pick up information. The current cost is \$17.00.
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MAY 2014 COLUMN

Dear Master Gardener:

I would like to plant some raspberries and blackberries this summer and was wondering which ones are best for the Brainerd Lakes area and what are some tips for successfully growing them?

Blackberries are typically not winter-hardy up here, but raspberries are. The following information on raspberries is from Professor Emily Hoover, of the horticulture department at the University of Minnesota.

The three main types of raspberries that can be grown in the home garden are red, black and purple. Raspberries have perennial roots and crowns, but the canes only live for two summers. The first year, the new cane (primocane) grows vegetatively. The cane over-winters and during the second growing season the second-year cane (floricane) produces fruit and then dies. Primocanes are produced each year, so fruit production continues year after year. Red and yellow raspberries produce numerous new canes from the base of the floricanes and from buds produced on the roots. Black and purple raspberries are not reliably hardy in our fruit zone.

Ever-bearing raspberries, also known as fall-bearing, are able to initiate flowers during the first year. These cultivars produce fruit at the tips of the primocanes. During the second year, they can produce a summer crop on the same canes. One problem with this type of raspberry is that in parts of Minnesota where the growing season is short, many fruits may be lost to early freezes.

Raspberries should be grown in a part of the garden that has good air circulation, good water drainage and full sunlight. Protect plants from windy sites because wind can cause excessive drying and cane injury.

Early spring is the best time to plant raspberries. Purchase disease-free plants from a reputable nursery. Viruses can be quickly transmitted into a planting through infected plants. The hedgerow is the favored planting system for red raspberries. Set red or yellow raspberries every 2-3 feet in rows at least 6 feet apart. Raspberry plants need to be fertilized. When primocanes emerge in new plantings, scatter $\frac{1}{4}$ cup ammonium nitrate (33-0-0) around each new plant. Once the planting is established, fertilize yearly by May 1st by evenly distributing fertilizer such as ammonium nitrate (1/5 cup) or 10-10-10 (1/2 cup) per plant, spreading it over the entire area. Composted manure is also a good source of nutrients and can be incorporated into the soil prior to planting and as a top dressing on established plants. Like many plants, raspberries benefit

from mulch. Plentiful water is a necessity from spring until after harvest. Because the root system is in the top two feet of soil, watering regularly is better than an occasional deep soaking.

Raspberries benefit from some type of support system because canes are susceptible to wind whipping. This can be as simple as posts with twine tied between them, or more elaborate with permanent posts and wire. With the hedgerow system, the simplest trellis system uses single or double wires or twine. Place posts about every 10-12 feet; then place the canes between the wires and tie them loosely to the wire. The wires can be tied every 2 feet to prevent spreading. The rows should be kept narrow.

After the last harvest, cut all canes that have produced fruit to ground level and remove them. This will eliminate a disease source and give primocanes more room to grow. Thin the primocanes down to four or five sturdy canes per foot in each row. Since winter injury is common in this area, you can delay thinning primocanes until the following spring; however primocane growth will be less because of the competition among canes. It is desirable to cut the canes to about 12 inches above the wire before growth starts in the spring.

The list of cultivars below is based on research done through the Minnesota Agricultural Experiment Station. Hardiness ratings are based on the survival of plants in Minnesota hardiness zones. Fruit hardiness zones differ from USDA cold hardiness zones. Minnesota is divided into four fruit zones. Crow Wing County and the northern half of the state is Fruit Zone 4. The following cultivars are rated for Minnesota's Fruit Zone 4.

Cultivar	Type	Harvest Season	Productivity	Fruit Size	Firmness	Flavor
Latham	Red	Mid	Good	Large	Fair	Good
Boyne	Red	Early	Very good	Medium	Fair	Good
Nordic	Red	Early	Very good	Medium	Good	Very good
Festival	Red	Mid	Very good	Medium	Good	Good
Liberty	Red	Mid	Good	Medium	Poor	Good
Killarney	Red	Early	Good	Medium	Fair	Good
Fall Red	Fall, red	Early	Good	Medium	Poor	Good
Redwing	Fall, red	Early	Very good	Medium	Fair	Good
Summitt	Fall, red	Early	Good	Medium	Good	Good
Fallgold	Fall, yellow	Early	Fair	Medium	Poor	Superb
Autumn Bliss	Fall, red	Early	Good	Medium	Good	Superb

Dear Master Gardener:

My brother and I miss the beautiful and fragrant wisteria that grew along our porch roof in Alabama when we were growing up. He claims that it can be grown here in Minnesota but I doubt it because I've never seen it here. Who is right?

Your brother wins this one. Most species of wisteria grow south of Minnesota but one, Kentucky wisteria or *Wisteria macrostachys*, is hardy here and is carried by local nurseries. It is a spectacularly beautiful, early-summer, twining, woody, deciduous climber with fragrant, pendulous white, pink or blue-violet flowers that frequently rebloom later in the summer. It also has attractive, long, dark green leaves with oval leaflets and an interesting, gnarled trunk. It likes full sun and moist, rich soil. Several cultivars thrive in Minnesota: 'Aunt Dee', 'Blue Moon', and a new one called 'Summer Cascade'. Northland Arboretum in Brainerd has had a lovely 'Aunt Dee' for a number of years. There may be some reasons why wisteria is not more popular here. First, it needs a sturdy wall, stake, trellis or pergola to support its size and weight. Second, it takes several years to settle in before blooming. Third, it can be very aggressive and definitely requires careful and often heavy pruning—sometimes 2-3 times a year, both to contain it and to force heavier bloom. It is not a plant for the casual gardener. But it is so beautiful that you may have strangers stopping by to ask you what "that gorgeous plant" is.

MAY GARDEN TIPS

- Work compost into garden beds as soon as soil is frost-free and friable. They will then be ready for planting at the end of the month.
- Install peony hoops before foliage is too tall to confine without injury.
- Clear debris beneath shrubs and trees.
- It is too early to spread pre-emergent crabgrass preventer. Wait until early June here in Crow Wing County. It's also too early to plant tomatoes, peppers and melons. Wait until Memorial Day.
- Dig up dandelions now while their yellow blossoms make them easy to spot and to prevent them from going to seed.
- If you are hungry for garden color, plant pansies, violets and Johnny jump-ups now. They withstand cold snaps well.
- Sow snow peas, leaf lettuce, spinach and radishes directly into the garden as soon as the ground can be worked. Transplant onions, cabbage, cauliflower and broccoli while soils are still cool.
- Floating row covers can help protect emerging seedlings and still-tender transplants from squirrels, chipmunks, birds, rabbits and other small critters. You will need to secure row cover corners to discourage wily wildlife from sneaking under them.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

JUNE 2014 COLUMN

Dear Master Gardener:

Is rhubarb a native plant? What should I know to grow it successfully?

All plants, of course, are native somewhere. In the case of rhubarb (*Rheum raphanistrum*), it is native to Russia and named after the river Rha, today known as the Volga. It came to America with the British in the 17th century and was often referred to as “pie plant” because that was its most frequent use.

Although it can be grown from seed, most people buy rhubarb already started, either from a nursery or as a division from a friend’s existing plant. The best time to plant it is in early spring. Because it is a large, spreading plant, it needs space, at least a 3-foot square of rich, well-drained soil in full sun. Its rhizomatous root gets large and deep, so a hole two feet deep should be prepared for it. Do not plant it too deep: the crown should be just level with the soil.

Rhubarb is a heavy feeder and should be fertilized in early spring and again in midsummer. Keep it well watered. When or if white flower stalks appear, remove them promptly so that they don’t deplete the plant’s vigor. There are few insect or disease problems.

Although rhubarb is very tart, it is used largely in sweet things such as pies, cakes, sauces, muffins, and jams. Cultivars with red stalks are most popular because of their color while the greener stalks are rather lackluster. The red also tend to be sweeter. To harvest the stalks, hold them firmly, pull and twist. Do not use a knife. Remove the leaves promptly to avoid wilting of the stalk. The leaves are poisonous, high in concentration of oxalic acid. When ingested, the leaves cause cramping, nausea and even death. The stalks also contain oxalic acid, but in a lower concentration, and are harmless to most people, the exception being those with gout, kidney disorders and rheumatoid arthritis. A myth persists that rhubarb stalks also become lethal after midsummer, which is not true. They can be used all summer long but most people stop using rhubarb after early July both because there are then many other fruits available and to let the plant store up energy for the next year.

Dear Master Gardener:

Are marigolds edible and do they really act as a natural pesticide?

Marigolds, a native of Mexico, have been grown in gardens throughout the world for hundreds of years and are one of the most popular bedding plants in the United States. *Calendula officinalis* (pot marigold), *Tagetes erecta* (African marigold) and *Tagetes tenuifolia* (signet marigold) are edible. Pot marigolds have been reported to taste “tangy and peppery”, African marigolds “strong and pungent”, and signet marigolds “citrus-like or “spicy tarragon flavor”. It is important to

correctly identify flowers before consuming them and to make sure they have not been treated with pesticides. The only way to ensure flowers have not been previously treated with pesticides is to grow them from seed or buy organically grown plants.

Although there is little documentation and research to back it up, some garden experts agree that French and African marigolds repel some insects and nematodes and they “must smell to repel”. Some garden experts also believe that French marigolds repel mosquitoes.

According to Iowa State University Extension, not only do marigolds not repel rabbits, deer or other animals, rabbits occasionally browse heavily on marigolds. Research studies there have also concluded marigolds are not effective in reducing insect damage on vegetable crops.

Dear Master Gardener:

I would like to purchase a bird bath for my garden and was wondering if some are better than others. Should placement be a consideration?

Providing water for birds can improve the quality of your backyard bird habitat and give you an excellent opportunity for bird-watching. Not only do birds need water to survive, they also use water for bathing, cleaning their feathers and removing parasites. The typical bird bath sold in lawn and garden shops (picture a concrete basin mounted on a pedestal) make nice lawn ornaments, but are not necessarily what is best for most birds. First, they tend to be too deep. Second, they can be hard to clean. Third, they can crack if left out during the winter.

When you choose a birdbath, look for one made of tough plastic that can be cleaned easily and won't break if the water freezes. A birdbath with a gentle slope allows birds to wade into the water. If you want to make your own, you can use a garbage can lid, saucer-style sled, or even an old frying pan. The goal is to try to imitate a natural puddle as much as possible. Birds seem to prefer baths at ground level; however, if there are cats around, raise the bath 2-3 feet from the ground. To give birds footing, place sand in the bottom of the bath. If your birdbath is on the ground, you could place a few branches or stones so that they emerge from the water; then birds can stand on them and drink without getting wet (especially in the winter). The best place to put your birdbath is in the shade near trees or shrubs. The shade will keep the water fresh longer and slow down evaporation. The trees or shrubs will provide nearby cover from predators. To really make your bath attractive to birds, provide moving water. You can purchase products that drip or spray water into a birdbath. Keeping your birdbath full of clean water at all times is the key to attracting a large number of birds to your yard. It is important to clean it every few days and clean it immediately if you see algae starting to form.

JUNE GARDEN TIPS

- Most houseplants can benefit from being moved outdoors now to a shaded, protected spot to soak up much-needed humidity.
- Plant warm season vegetables such as tomatoes, peppers and eggplants when evening temperatures stay above 52 degrees.
- Deadhead flowers regularly to encourage prolific bloom.
- Plant potted annual flowers and vegetables on cloudy days when possible to minimize transplant shock.
- About mid-month mulch most flowers and vegetables with 2-3 inches of biodegradable material such as grass clippings and chopped leaf litter. It will conserve moisture, insulate soil and help prevent weed seeds from sprouting.

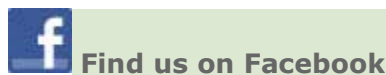
- Feed your compost pile with fruit and vegetable scraps and trimmings—skins, peelings, etc. White paper napkins and paper towels can also be composted, as can torn-up paper egg cartons and dryer lint.
- Prune lilacs and forsythia soon after they are done blooming because they set next year's buds by about mid-July.
- When tulips, daffodils and other spring-flowering bulbs finish blooming, it is tempting to get rid of unattractive leaves. If you want bloom next year, it is important to leave them until they are no longer green. As long as they are green, they are feeding the bulbs.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

JULY 2014 COLUMN

Dear Master Gardener,

I have pink and red and white roses but would like to add a yellow one that would be hardy in the Brainerd Lakes area. What would you recommend?

Fortunately there are several hardy yellow roses to choose among. “Hardy” does not mean there will be no dieback at all. It can mean that there will be some minimal dieback or that it will sometimes die back to the crown but will come back as spring progresses. Some bloom only in June; others have repeat bloom in the fall and others bloom continuously all summer. Among your choices are ‘Brook Song’, ‘Fruhlingsgold’, ‘Golden Wings’, ‘Harrison’s Yellow’, ‘J.P. Connell’, ‘Prairie Harvest’, and ‘Wildenfels Gelb’. A local nursery will likely carry other yellow roses, too. A newer rose, ‘Bill Reid’, hardy in zone 3, has been receiving praise from Minnesota Master Gardeners. For more detailed information on specific roses, such as bloom time, fragrance, need for winter protection, bloom size and form, go to the internet or consult the book “Growing Roses in Cold Climates,” written by Minnesota rose specialists.

Dear Master Gardener,

I would like to put sod down to get an instant lawn and was wondering if you have recommendations for greater success, since this is quite an investment.

There are advantages to sod over seeding, such as the rapid establishment of an “instant lawn” and relatively weed-free start. It is good for slopes or areas prone to erosion and it can be laid any time during the growing season. As you stated, the disadvantage is the expense.

Purchase sod as fresh as possible, preferably having been cut no more than 24 hours before delivery. Lay it as soon as possible, or within one day of delivery. Lay the sod on slightly moistened soil, staggering the joints much like bricklaying. If you are laying it on a slope, lay the rolls across the slope and stake each piece to hold it in place. Fill any cracks with soil to prevent edges from drying. You may use a roller about one-third full of water to smooth the site and ensure the roots of the sod have good contact with the soil.

Keep the sod moist but not saturated until it is firmly rooted in the soil, which takes a few days to a few weeks, then gradually reduce watering. In two to three months it can be treated as an established lawn.

Dear Master Gardener,

My peony plant only has a few flowers. What could be wrong?

Typically when a peony fails to form buds or flowers, it has been planted too deeply or it is in too much shade. Sometimes when a clump has remained undisturbed for ten years or more it may be so crowded that it may fail to bloom. If you think any of these reasons pertains to you, dig it up and replant it. When you plant, cover the peony roots so the pink buds or “eyes” are pointing up. Make sure to plant the top of the roots only one and one-half to two inches beneath the soil line. Peonies prefer full sun, but will bloom as long as they receive four or five hours of direct sun daily. Plant them in well-drained soil.

You can divide peonies in early spring or late summer. Dig up the entire clump, then split it into halves or quarters with a sharp knife or shovel. Young plants or divisions that have three “eyes” or less won’t bloom until they are older and larger.

Do not cut down peony foliage until it is damaged by frost. Once the soil freezes, simply rake some leaves over the plants, then remove the mulch in spring.

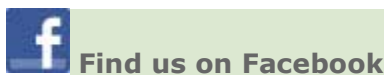
JULY GARDEN TIPS

- Because mosquitoes are plentiful this year, plan your gardening time to avoid them. Mosquitoes are least active when it’s sunny and breezy, most active at dusk. Use insect repellent containing DEET and wear light-colored clothing.
- To avoid having wormy apples, start your spray program in early July to control apple maggots. Spray every 10-14 days until harvest, or two days after each rainfall of ½ inch or more.
- It’s time to water your lawn when grass does not spring right back up after you walk on it. Water early in the day to limit evaporation.
- The time you take to remove spent blossoms is well worth it. Deadheading promotes continued bloom and prevents seed formation.
- To keep peas and beans producing keep picking them, tomatoes, peppers and cucumbers, too.
- When tomatoes start to bloom, side dress them with a little extra fertilizer. Too much fertilizer, however, promotes leafy growth at the expense of blossoms and fruit. Container-grown tomatoes, like other container-grown vegetables and flowers, need fertilizer every two to three weeks.
- Visit a local farmers’ market for freshest produce. Support local economy.
- When lettuce, spinach and other spring crops bolt or turn bitter, remove them and use the space for a fall crop of cauliflower, kohlrabi, cabbage and onions.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

AUGUST 2014 COLUMN

Dear Master Gardener,

There is a shady area in my lawn where grass won't grow and I would like to replace it with a ground cover of some sort. On a list of ground covers I saw wintergreen, which I love, listed. Would it be a good choice for this area?

The short answer is “probably”. Hardiness is not the issue because wintergreen (*Gaultheria procumbens*) is hardy in USDA zone 3. It does, however, require part to deep shade and acidic soil that is moist and rich in organic matter. It has glossy, evergreen leaves that release the wintergreen scent when crushed; small, egg-shaped, white flowers in summer; and striking, edible, red berries in the fall. It grows from rhizomes that creep along underground, sending up short six-inch stems at intervals, slowly expanding its territory. Birds like it and it has lovely, burgundy fall color. It may not be readily available in local nurseries but it can be purchased from catalogs or—if you have it growing wild in your woods—it can be propagated from cuttings in the summer or from rooted suckers in the spring. People who like wintergreen-flavored chewing gum, toothpaste and candy are often unaware that their fresh, minty taste comes from oils from this hardy, beautiful, low-growing shrub. Native Americans used wintergreen medicinally because it has some mild analgesic and fever-reducing qualities, but most of us just enjoy its flavor.

Dear Master Gardener,

I was visiting a friend out east and noticed she has purple loosestrife in her garden. Isn't it invasive and illegal? Is yellow loosestrife also invasive and illegal?

Lythrum salicaria (purple loosestrife) is a species native to Europe and has been commonly grown in perennial gardens. In nature, purple loosestrife lives where soils are wet or have shallow standing water. It has no natural enemies and is very aggressive and will choke out native vegetation. Because purple loosestrife is dangerous when planted near water, it is illegal to grow any of these plants anywhere in Minnesota. It was designated a noxious weed in 1987 and since then the sale and transport of this plant has been illegal. According to Minnesota statutes it is the responsibility of the occupant or owner of privately owned land or the person in charge of public land to control or destroy noxious weeds to prevent their spread.

Lysimachia (loosestrife) is not illegal in Minnesota and is a tough, easy to grow perennial with attractive foliage and showy flowers. Most loosestrifes spread rapidly and are considered “aggressive plants”. If you plant the species that spreads rapidly in your perennial garden, you may want to restrict its spread with a physical barrier or be willing to divide them on a regular basis. They thrive in rich, moist soils and grow well in full sun to light shade. *Lysimachia ciliate* (Fringed Loosestrife) is native to northeastern United States and is an elegant plant with a willowy appearance and small yellow flowers that blooms in mid summer. Two cultivars ‘Firecracker’ and ‘Purpurea’ have chocolate purple colored foliage. This species spreads slowly. *Lysimachia clethroides* (Gooseneck Loosestrife) is a species that produces uniquely shaped, arching white flowers and blooms in mid to late summer. Place it carefully because it is invasive.

Dear Master Gardener,

The bats are driving us batty. They hang at night near our covered entryway and we wake up to piles of droppings and streaks of urine on our cedar siding. Is there anything we can do to stop them?

There are seven species of bats in Minnesota. They are actually gentle, beneficial creatures, but sometimes they become a nuisance. Bats come out at night, fly around, eat lots of insects and may rest under the eave of a porch. They are simply in need of a short-term roost. Bats will often stain the sides of a building with their droppings as they are flying in and out at night. Bat droppings are dark in color, greasy, and may have insect body parts inside. According to the Minnesota DNR, ultrasonic devices are not effective in repelling bats and there are no chemicals registered in Minnesota for use on bats. Attempts to poison bats, or exclude them using inappropriate methods can actually increase human contact, as sick or homeless bats may disperse through the neighborhood thereby increasing chance encounters with people or pets. Light sometimes will deter bats, so you could light the area at night to try to discourage bats from resting in your entryway. You could also provide an alternate roost site for the bats by putting up a bat house. Encouraging bats to stay around your yard will help control the insect population.

AUGUST GARDEN TIPS

- August can be hot and dry. Help Mother Nature out and give trees several deep waterings this month. They will enter winter stronger when well-hydrated.
- Stop fertilizing roses and other shrubs. Fertilizer encourages new growth that is more susceptible to winter injury than old wood.
- Dig up and divide irises and other spring-blooming perennials. Keep them well-watered.
- Keep weeding. Remove them before they set seed, which will produce a multitude of new weeds next spring.
- This is a good month to begin a new lawn, either by seeding or sodding.

- Remove and destroy tomato leaves with yellow or brown spots. These symptoms are caused by septoria leaf spot and early blight.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

SEPTEMBER 2014 COLUMN

Dear Master Gardener,

My clematis has almost finished blooming and I was wondering if I am supposed to deadhead the flowers or prune it now.



It depends on what type of clematis you have. Most clematis climb by wrapping their leaf petioles around a support, such as lattice, wire, or another plant. The climbing varieties are divided into three groups according to when they set their flower buds. This determines when they will flower and how they should be pruned.

Clematis in the first group flowers on wood grown in the previous season (old wood). Flower buds are initiated on this year's vine in July and then produce flowers in late spring of the following year. If you prune off old wood you also prune off flower buds. Pruning should be done only to maintain the framework and should be done after flowering, but before July. Here is a rule to help you, "If a clematis flowers before early summer, do not prune it." Because it is difficult to over-winter the stems, this group is the least preferred for cold climates; none are rated for -40 and a few are rated for -30.

Clematis in the second group flowers on this year's growth (new wood). The flowering period is typically later in the season (July through September) with a main flush of bloom (although some varieties will flower as the season progresses). The goal in pruning this group is to eliminate all of last year's growth, which encourages plants to produce strong new shoots from the base and flower well. These can be cut to the ground each fall and you will still get a very good display of flowers the next season. This is the most reliable group for cold-climate gardeners.

The third group flowers on both old and new wood. There are some varieties in this group that have two flower flushes and some that have continuous flowering. Some varieties produce flowers on old wood that may be different sizes, forms, or colors from those produced on new wood. If the old wood is protected during the winter, these plants will produce flowers in spring and another flush on the new wood later in the summer. Remove dead and weak stems in late spring and prune after the first flush of growth. Rule to remember with this group, "Do not indulge in large-scale pruning of old wood made during the previous season or there will be a

loss of early flowers.” Cultivars that have a continuous flowering pattern from June through September do not have a rest period between the two growth flushes.

Dear Master Gardener,

This summer my garden beds are full of a weed I have never seen or noticed before. It is a very pretty bright green with serrated, pointed leaves and shallow roots that pull up easily. What could it be and why are there so many this year when I haven't had any before?

Master Gardeners all over the state have been reporting an explosion of Canadian clearweed (*Pilea pumila*), which would match your description. It is a member of the nettle (*Urticaria*) family, but unlike its cousins it does not have the stinging hairs that irritate the skin. It is a woodland plant that thrives in moist, shady soils — common conditions in this wet year. The reason for the name “clearweed” is that its stalk, and to some extent its leaves, are translucent. In fact, clearweed is sometimes used in biology classes to show the uptake of nutrients.

Its leaves are opposite and have a prominent central vein and two conspicuous side veins. It does have flowers but they are very small, tan and clustered in the leaf axils. In the fall clearweed produces numerous flat, teardrop-shaped seeds about 1/16 inch long that have been pollinated and then scattered by the wind. Seeds of many plants lie dormant in the soil for years until conditions are right for their germination. It appears that this year everything was right for the reappearance of Canadian clearweed. It is sometimes grown as a groundcover.

SEPTEMBER GARDEN TIPS

- Start taking cuttings from annuals that you want to overwinter indoors. Some plants that are often saved this way are coleus, geraniums, wax begonias, annual vinca and herbs.
- Get out blankets, sheets, etc. to be ready to cover tender plants when frost warnings begin. In the mornings, remove covers when the temperature is above freezing. “Row covers” (white commercial spun fabric) can be left in place day and night because they allow sunlight, air and water to penetrate.
- Carefully dig up tender bulbs this month. Gently clean them, then (Google specific bulbs for length of curing time, which can vary from 1-30 days). Store them in boxes filled with peat moss, dry sawdust or other storage material. Be sure to label them.
- Fall is not a good time to prune woody plants. Pruning promotes new growth, which may not be able to survive the winter.
- Prune out stem tips of tomatoes, squash and melons early this month. This will focus the plants' energy on ripening existing fruits instead of producing new fruit, which is unlikely to mature.
- Fall is the best time to control lawn weeds. The chemicals are most effective then and the actively growing grass will fill in empty spaces quickly.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

OCTOBER 2014 COLUMN

Dear Master Gardener:

Help! The deer are ruining my gardens and it seems worse this year than ever before. They are eating plants right next to my house. Are there any deer-resistant plants or proven repellents?

There seems to be more complaints this year about deer destroying gardens. In late summer and fall you may see freshly raw places where the bark has been skinned on the trunks of shrubs or young trees. Bucks remove the velvet from their antlers on young shrubs and trees, causing open wounds which can kill the plant. Deer usually feed at dusk and dawn and browse on twigs, foliage and flowers causing damage to gardens. They have no upper incisor teeth, so they tear off their food and leave behind torn, ragged vegetation. Going out to your garden in the morning only to discover that your beautiful hostas look like celery stalks sticking out of the ground is very disheartening. In the summer when food is plentiful you would think that deer wouldn't need to feed from our gardens, but our garden plants are kept watered and are therefore more succulent than plants in the wild, not to mention easier to get at.

The only true "deer-resistant" plant is a plastic one. With that said, you can minimize the damage they can do by avoiding plants they prefer and planting those they tend to pass up. Some deer favorites include daylilies, hostas, hydrangeas, lilies, roses, strawberries, sweet potato vine, tulips, arborvitae and white pine. Deer usually avoid plants that are toxic, have leaves that are fuzzy, tough and leathery, have spines or bristles, or are aromatic. Perennials that are reported to be non-preferred plants are: Achillea (yarrow), Aconitum (monkshood), Alchemilla mollis (lady's mantle), Allium, Aquilegia (columbine), Astilbe, Baptisia (blue false indigo), Narcissus (daffodil), Paeonia (peony), Perovskia (Russian sage), Pulmonaria (lungwort), Salvia, and Stachys (lamb's ear). Annuals that deer seem to avoid include ageratum, wax begonia, heliotrope, sweet alyssum, dusty miller, and marigolds. Even plants they do not like to eat, they will pluck out of the ground, spit it out and leave it to shrivel and die. Shrubs that are reported to be "deer-resistant" are lilac, nannyberry, juniper, spirea, Russian cypress and barberry. Winter is the worst time for deer in our cold climate and with little food available they will eat almost anything they can reach, including prized dwarf evergreens and the developing buds of deciduous trees and shrubs.

Once deer find your garden in winter, they will return each year throughout their lives, so it is important to deter them from the outset. In our cold climate shrubs are more vulnerable to deer browsing, so many gardeners put black plastic or nylon netting over their shrubs to protect them. Burlap can be placed around arborvitae, which not only protect them from deer, but also winter burn. Snow fencing around vulnerable and/or prized trees and bushes can be used.

Some gardeners put fencing around each garden bed, as deer are usually afraid to jump into small areas where they could get stuck.

There are commercial deer repellents. Some people have success with Milorganite, which is a granular product composed of heat-dried microbes that have digested the organic material in wastewater and is manufactured by the Milwaukee Metropolitan Sewerage District, so you not only get a possible deer repellent but fertilizer too. Some commercial repellents are in liquid form and sprayed on. They typically contain a variety of ingredients including, but not limited to, eggs, garlic, castor oil, the urine of predatory animals, and capsaicin (hot pepper sauce). Homemade versions have the same main ingredients as their commercial counterparts. If you are going to use repellents, it is important to apply them regularly, especially after heavy rain or snow. Some gardeners have success with hanging bars of soap from trees, but experiments conducted by R.K. Swihart and M.R. Conover (1990) showed that only approximately one yard from the soap will be protected from deer, some damage to plants can happen, and there is no one brand that repels better than another. If you are interested in reading a book about garden remedies you may enjoy, *The Truth About Garden Remedies What Works, What Doesn't, and Why* by Jeff Gillman, a former University of Minnesota associate professor in the horticultural department.

Dear Master Gardener:

I need to replace some old and overgrown shrubs in my yard. I would like to plant ones that have berries, some for me and some for birds and other wildlife. What do you suggest?

Even in our cold zone 3 climate there are many to choose among. Here are some listed in three categories: edible, tall (over 4 feet), and short (under 4 feet). Though we usually try to include botanical (Latin, official) names, this time, in consideration of numbers and space, common names will be used.

First are some edible shrubs: Juneberry (sometimes called serviceberry), bearberry, chokeberry, wintergreen, sandcherry, sumac, gooseberry, rose, raspberry, dewberry, thimbleberry, buffaloberry, wolfberry, blueberry, viburnum, and snowberry. Though all of them do bear fruit, not all will be equally suitable for your purposes. Consider height, need for sun or shade, and soil type. Also, remember that some berries that wildlife enjoy are not as palatable to humans, and that you may not want your wild friends competing for your favorites. Not all berries are ready to eat right off the plant, such as sumac and rose hips, which are steeped for tea, and chokeberries, which must be processed.

Tall shrubs may grow to be eight or ten feet tall, though most can be kept pruned shorter or come in dwarf varieties. Some attractive tall shrubs are serviceberry, winterberry (berries are poisonous), elder, buffaloberry, and various viburnums.

Heights of short shrubs need to be carefully considered because some, such as bunchberry and bearberry, are so short (6 inches) that they are really ground covers. Here are some short shrubs: sandcherry, currant, rose, bearberry, blackberry, bunchberry, swamp fly honeysuckle, raspberry, wolfberry, and blueberry.

The internet can give you a great deal of information about individual species. As always, university-based sites are science-based and likely to be the most accurate.

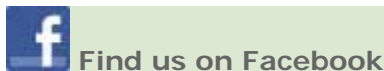
OCTOBER GARDEN TIPS

- Plant tulips this month. Clusters of a dozen bulbs or so make greater impact than do bulbs planted in lines.
- Continue to water trees (especially evergreens), shrubs, perennials and lawns so that they tolerate winter better.
- Lift and store tender bulbs such as cannas, gladiolas, and dahlias after the first frost.
- Continue to weed, weed, weed.
- Mow lawns to a 3-inch height going into winter.
- Divide and transplant peonies now.
- Cover strawberries with a thick layer of straw or hay late this month or after several hard frosts.
- Get your soil tested.
- Prune trees that bleed or are susceptible to disease such as oak, maple, birch, honey locust, and mountain ash.
- Clean up fallen apples, apple leaves with spots, and tomatoes that had disease, disposing them off your property. Many diseases and insects overwinter in plant materials.

QUESTIONS OR COMMENTS?

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

NOVEMBER 2014 COLUMN

Dear Master Gardener,

The power company removed a large oak on my property because it interfered with the power lines. My yard looks naked without it. Can you suggest a smaller tree that would not give us the same problem?

Northern States Power and Minnesota Power, together with the University of Minnesota, compiled a list of trees suitable for planting under and near power lines. Not all listed trees will work on every site, and height and width will vary somewhat depending upon the site and the owner's maintenance practice. They are all under 20 feet in height and hardy through USDA zone 3b. A few you may think of as shrubs, but they can be trained (pruned) to tree form. Others are not included because they have disease problems, very short lives and other disadvantages that make them unsuitable. Here then are some suggestions: Amur maple, Tartarian maple, serviceberry, American hornbeam, pagoda dogwood, gray dogwood, Russian olive, burning bush (winged euonymus), forsythia, mugo pine, Korean mountain ash, Japanese tree lilac, and American arborvitae (gourmet fare for deer).

Dear Master Gardener,

I've seen pictures using Annabelle Hydrangea flowers to decorate wreaths and Christmas trees and I was wondering how to dry them so I can use them to decorate for Christmas?

Hydrangea flowers can be dried and used for indoor arrangements and decorating. It is best to cut them when they are mature, or aged, on the shrub because fresh blooms tend to wilt and turn brown. When cutting them from your shrub it is best to keep the stems shorter than 18 inches and cut them at an angle. One method of drying hydrangea flowers is to air dry them. Simply remove the leaves from the stem and hang them in a cool, dry place. Another method is to dry them upright in a vase or jar. Cut the flowers by cutting the stems at an angle, strip the leaves off and place them in water. If you are drying several flowers in one vase you may want to stagger the lengths so the flower heads do not touch each other, as they benefit from good air circulation for them to dry properly. Place the stems in a vase or jar with a few inches of water and keep them out of direct sunlight. Let the water evaporate. If the flowers still are not dry when the water evaporates, add a little more water and give the flowers more drying time until you feel they are adequately dried. Once your flowers are dry, you can use them to arrange in vases, or use to decorate wreaths, Christmas trees and topiaries.

Dear Master Gardener,

Last spring after the snow melted I noticed trails of dead grass in my lawn. What caused it and how can I prevent it from happening again?

It sounds like you had voles, which are small brown rodents about the same size and shape of a mouse. Voles are commonly found in yards and fields and spend a lot of time eating grasses and roots and making trails. The meadow vole and prairie vole are the most common species found in Minnesota. Vole populations go in cycles and approximately every three to five years there will be a population boom, especially during a mild winter with good snowfall. As the snow melts many homeowners and turf managers are distressed to discover that voles have been busy in their lawns over the winter. Tell-tale signs are crisscrossing trails throughout your lawn and patches of dried grass. They feed on lawns under protective snow cover and typically avoid open areas where they are a target for predators. As voles feed on grass they create one to two inch wide tunnels or trails filled with grass clippings. Because voles are so common, complete prevention is most likely impossible; however, there are

some things you can do to keep their numbers down. Remove woodpiles and other debris from the ground to remove their hiding places. Keep grass trimmed short and bushes trimmed up from the ground. Bird feeders also attract voles, so if you are set on having a bird feeder, keep the ground very clean to help keep their numbers down, as they too like to eat bird seed. Although vole damage is unsightly, it is rarely serious or permanent and after mowing your lawn a few times it probably won't be noticeable. You could also rake up the dead grass and reseed the areas where they have caused damage.

What is more worrisome is that voles can do significant damage to small trees and shrubs when they chew on the bark hidden under the snow. They eat mostly grasses and perennial plants, but will also eat bark, especially in the fall and winter. You may notice vole damage where bark has been chewed near the ground. Before it snows there are some prevention measures you can take to stop voles from damaging or killing your trees and shrubs. Encircle the trunks, loosely so as not to harm it, with a light colored tree guard, making sure that the guard is tall enough to reach above the snow line. In addition, bury the base of the guard in the soil or have a soil ridge around the base. Another prevention method is to surround stems with a cylinder of quarter-inch hardware cloth sunk six inches into the ground.

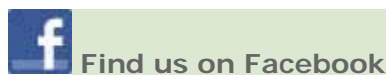
NOVEMBER GARDEN TIPS

- If you have buckthorn on your property, now is a good time to identify and remove it. It stands out in the woods because its leaves stay green and attached after other deciduous leaves have fallen. Its clusters of dark berries provide further identification. Buckthorn is alien to Minnesota and crowds out more desirable plants. It is also difficult to remove.
- Keep watering shrubs, perennials and young trees until the ground freezes.
- Deer, mice and rabbits are attracted to the thin bark of young trees. Wrap their trunks with cylinders of hardware cloth several inches wider than their trunks so they can stay in place for several years. To prevent critters from tunneling underneath the cylinders, push them into the soil about three inches.
- As soon as the ground begins to freeze, mulch bulb and perennial beds. Straw and marsh hay are the best mulches because their hollow stems trap insulating air.
- Brighten grey days with a new blooming houseplant. Some attractive and readily available ones are kalanchoes, begonias, cyclamens, anthuriums, African violets, and moth orchids.
- Continue to rake leaves since they often harbor disease and encourage snow mold.
- Inspect and clean garden tools. Adding a light coating of oil protects both metal and wooden parts. Sharpen pruners and shovels.
- Use room-temperature water on houseplants. Give each plant a ¼ turn each time you water to keep plants symmetrical.

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CROW WING COUNTY MASTER GARDENER PROGRAM

Ask the Master Gardener

DECEMBER 2014 COLUMN

Dear Master Gardener:

Orchids are so beautiful that it would be nice to have one as a house plant. How difficult is it to grow an orchid as a houseplant and is there a good one for a beginner to try?

There are at least 30,000 known species of orchids and many hybrids, so growing requirements vary considerably. Like any other houseplant, orchids require proper water, soil, fertilizer, light, temperatures, and humidity. Cattleya, Phalaenopsis (moth orchids) and some Paphiopedilum varieties are among the easiest to care for as houseplants. They are both known for their long-lasting flowers, with Phalaenopsis flowers lasting two to six months. Phalaenopsis orchids are epiphytes, so in their natural habitat they grow in the branches of tropical trees and absorb moisture from the surface of bark that is wet from dew and rainfall. They need to be planted in a special orchid mix comprised of bark chunks that won't absorb much moisture. Paphiopedilum orchids are terrestrials, meaning they grow in soil. Two other terrestrial orchids which are easy to grow are Ludisia (jewel orchid) and Phaius (nun orchid). Terrestrial orchids should be potted in a typical houseplant soil mix that holds some moisture but still drains well. Dendrobium and Oncidium can also be grown as houseplants, but are more difficult to grow.

When it comes to growing orchids, temperature is very important, and they are classified by the temperatures they prefer. Warm-growing orchids, such as Phalaenopsis, Doritis, Dendrobium, and Vanilla, grow best in temperatures in the 65-80° F. range. Cool-growing orchids, such as Cymbidium, Odontoglossum, Miltonias, Masdevallias, and some Paphiopedilum, prefer temperatures in the 55-70° F. range. Most of the remaining varieties do well in intermediate temperatures in the 60-75° range.

Orchids like high humidity with at least 50% relative humidity, so it helps to place a tray with stones under the plant to catch excess water and increase the humidity around the plant. Make sure the plant is not sitting in water, as orchids are prone to root rots. Frequency of watering depends on the size of the plant and pot, type of pot (clay or plastic), potting medium, temperature and relative humidity. It is best to use water that is at room temperature and avoid softened water. As a general rule allow the soil for orchid plants to dry out between waterings, but continue to keep them humid. Fertilize once per month in the spring and summer with a special orchid fertilizer or a 30-10-10 fertilizer at half strength. Some orchid growers use a bloom booster in fall since most orchids bloom in winter.

Most orchids grow best with bright, indirect light. They should be kept out of direct sun. If an orchid plant is not getting enough light the leaves tend to turn darker green. If the leaves get a pale yellow-green or purple color it is getting too much light.

Dear Master Gardener:

My friend said she planted globe thistle in her garden last summer so she can use them in dried flower arrangements. Aren't thistles a noxious weed?

Thistles are often troublesome weeds in Minnesota gardens and lawns; however, despite its name, globe thistle is not a thistle, but a highly ornamental plant that makes a great addition to the back of a perennial border. Echinops ritro (Globe thistle) is a tall, drought-tolerant perennial that is hardy to our zone 3. The plants get two to four feet in height and are "deer-resistant". They bloom in midsummer and do best growing in full sun in poor, sandy soil. They have dense silvery purple-blue spherical flower heads up to one to two inches in diameter, with small spiny

petals. Globe thistles attract beneficial insects (bees) and are a host plant for painted lady butterflies. The flowers make wonderful additions to cut and dried flower arrangements. For best drying results, cut the flower heads just before the blooms expand. 'Taplow Blue' is a variety that sports two-inch wide steel-blue flower heads, 'Taplow Purple' has bluish-purple flowers and 'Veitch's Blue' has darker blue flowers.

Dear Master Gardener:

The artificial Christmas tree we have used for the past ten years is looking pretty ratty. We miss the fragrance of a real tree but have forgotten how to choose a good one. Can you help us?

Most tree lots will carry fresh pine, spruce and fir trees, and as you might imagine each variety has its upsides and its downsides. You will want to consider not only fragrance but also color, ability to hold light and heavy ornaments, and price.

Here are some tree options. Scots pine is probably the least expensive. Its needles are 2-3 inches long and its branches are sturdy enough to support fairly heavy ornaments. Pines have the best needle retention. White pine is a bluish-green Minnesota native with very fragrant and delicate, 3-4 inch long needles. It is best decorated with light-weight ornaments. Red pine, also known as Norway pine, another native, has stiffer, shorter needles than the white pine and tends to have more space between branches. White spruce, yet another native, has the shortest needles of all, about ½ inches. It is denser than the pine and has an odor that some find mildly unpleasant. Balsam, Fraser and Canaan firs have been among the most popular trees in recent years. They have a beautiful silvery cast and are the most fragrant of all the trees. The Fraser fir has the sturdiest branches and is also the most expensive.

Before you make your final decision, shake a tree or run a hand gently over a branch to test for freshness. If more than a few needles fall off, it is too dry and you need to choose a different tree. When you get the tree home, cut off a 1-inch piece and immediately submerge the tree in water in a sturdy stand. Make sure that the cut end of the tree is always submerged in water as long as the tree is in the house. You may be surprised to find that the tree will take up a quart of water a day at first, so check it 2-3 times a day and keep the stand filled. If the stand goes dry, the cut will seal over, water uptake will stop, and the tree will rapidly dry out. Contrary to folk belief, nothing, such as aspirin, added to tree stand water will make it last longer or healthier.

A real tree requires more work and attention than does an artificial one, but the color and fragrance and knowledge that you are using a renewable resource bring great satisfaction.

DECEMBER GARDEN TIPS

- While memories of this past summer are still fresh, make lists of things you want to do, try, and purchase for next summer's gardens.
- December has the lowest light and poorest growing conditions of the year. Therefore, do not fertilize houseplants this month. Do keep plants adequately watered.
- Remove holiday plants such as poinsettias from their sleeves as soon as they arrive. Punch holes in the bottoms of the sleeves to allow water to drain out. Place plants on saucers to catch any additional water so that they do not stand in it.
- Shovel before applying deicing compounds, reducing the quantity necessary. Apply them down the middle of walks and driveways so that as little as possible leaches onto the grass. Sand and kitty litter provide sidewalk traction without salt.
- If you haven't done so already, clean and oil garden tool blades and wooden handles to prolong their lives and appearance.
- Be careful when hanging lights on outdoor trees and shrubs. Use only lights made for outdoor use and remove them before growth begins in the spring. Tightly wrapped lights can girdle and kill a tree in one season.
- It's too late to plant outdoors and too early to plant indoors, so relax and enjoy the Christmas season.

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