

Plant Wise

IOWA STATE UNIVERSITY
Extension and Outreach

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Where have All the Monarchs Gone, Long Time Passing?

By Dr. Donald Lewis
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It was not that long ago that a routine spectacle of autumn was to see monarch butterflies fill the air.

There would be hundreds filling the sky as you drove along in late September. On occasion you would be fortunate enough to see a "monarch tree" where hundreds of butterflies would roost overnight in the same tree as they passed through the area on their migration-route from Canada and Minnesota to central Mexico. Check out the migration of monarchs through Iowa as documented in a blog by Robert D. Woodward.

Unfortunately, the days of plentiful migrations may be over, as monarch butterfly populations have fallen on hard times and the numbers are down. Dramatically. The decline in the number of monarchs has occurred for a variety of reasons:

- Loss of milkweeds
- Intensive farming
- Urban development
- Deforestation in Mexico
- Global climate change and unfavorable weather for monarch reproduction and growth

According to Pleasants & Oberhauser (Insect Conservation & Diversity, 2012), milkweeds, the food source of monarch caterpillars, are disappearing in both agricultural fields and non-agricultural habitats in the Midwest. By some estimates, half of the overwintering monarchs that go to Mexico in the fall come from the

Midwest. Without their food source, they struggle to thrive. Between 1999 and 2010 "there was a 31% decline for non-agricultural milkweeds and an 81% decline for agricultural milkweeds with a 58% overall decline for total milkweeds." One cause of milkweed decline is the use of glyphosate herbicide on genetically modified, glyphosate-tolerant corn and soybeans.

An estimated 25.5 million more acres of corn and soybeans are now planted compared to just a few years ago. At the same time, Conservation Reserve Program land, grassland and pasture land (places milkweeds are likely to grow) have decreased. If the current trend continues, the amount of non-cropped farmland will continue to decrease, putting further pressure on monarchs.

Wet springs and summer droughts in the midwest have decreased monarch survival and reproduction. And warmer temperatures on Mexican forest hillsides threaten the forest trees where the monarch spend the winter.

As a result of these multiple factors, last winter saw the fewest monarchs in Mexico since record keeping began. The population last winter was one-twentieth what it was just 16 years ago. With fewer monarchs overwintering in Mexico, there are fewer to return to the upper Midwest. With less food resource available to monarch caterpillars in the summer, fewer monarchs migrate south the following year. It's a vicious, downward spiral that may eliminate monarchs as we have known them.



More sources:

- Monarch Watch
- "Where are the Monarchs"
- Environment 360

At the moment, individual actions to increase the number

of milkweeds are the best hope, but replacing the loss of milkweeds from 174.4 million acres of corn and soybeans is a tall order. As Chip Taylor (Monarch Watch) has said, "To assure a future for monarchs, conservation and restoration of milkweeds needs to become a national priority."

For more information about Monarch Watch visit:
<https://www.monarchwatch.org>

Enjoy Spring-Flowering Bulbs Indoors and in the Garden

By Richard Jauron
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Tulips, daffodils, crocuses, and other spring-flowering bulbs are a welcome

sight in the garden in the spring. Many spring-flowering bulbs also can be forced indoors during winter. When buying bulbs, select large, firm bulbs. Avoid soft or blemished bulbs. Small bulbs may not bloom well.

Planting Spring-Flowering Bulbs Outdoors

October is the ideal time to plant spring-flowering bulbs in the garden. They can be planted as late as December if the weather permits. Most bulbs should be planted in partial to full sun. Bulbs also need a well-drained soil. Poorly-drained soils can be improved by incorporating organic matter, such as compost or peat.

Plant spring-flowering bulbs in clusters or groups to achieve the greatest visual impact in the garden. When planting daffodils or tulips, plant five or more bulbs of the same variety in an area. Smaller growing plants, such as grape hyacinths and crocuses, should be planted in drifts of 25 or more bulbs. Plant bulbs at a depth equal to two or three times their maximum bulb diameter. Accordingly, tulips and daffodils should be planted 6 to 8 inches deep, crocuses and grape hyacinths only 3 to 4 inches deep.

Forcing Spring-Flowering Bulbs Indoors

Spring-flowering bulbs that can be forced indoors include tulips, daffodils, hyacinths, and crocuses. While many bulb varieties can be forced, best results are obtained by selecting varieties recommended for forcing. To enjoy spring-flowering bulbs in winter, gardeners must begin the forcing process in late summer or early fall.

Gardeners need good quality bulbs, well-drained potting soil, and containers with drainage holes in the bottom. Begin by partially filling the container (pot) with potting soil. Set the bulbs so that the tops of the bulbs are even with or slightly below the rim of the container. Place additional potting soil around the bulbs. However, don't

cover the bulbs completely. Allow the tops (noses of the bulbs) to stick above the potting soil. After potting, water each container thoroughly.

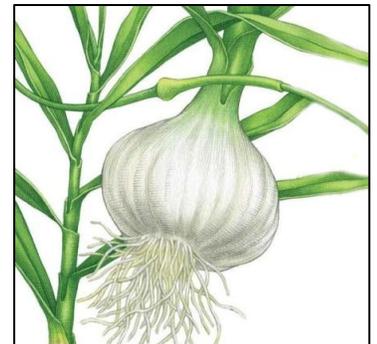
In order to bloom, spring-flowering bulbs must be exposed to cold temperatures (35 to 45 F) for 12 to 16 weeks. Possible storage sites include the refrigerator, unheated garage, root cellar, or cold frame.

Once the cold requirement has been met, begin to remove the potted bulbs from cold storage. For a succession of bloom, remove pots from storage at 10 to 14 day intervals. Place the bulbs in a cool (50 to 60 F), semi-dark location. After several days, move the plants to a slightly warmer area that receives bright light. Keep the potting soil evenly moist during the forcing period. Flowering should occur in 3 to 4 weeks.

Forcing spring-flowering bulbs indoors is an excellent way to brighten the gray, gloomy days of winter. Planted outdoors, the bright, cheery flowers of spring-flowering bulbs herald the beginning of spring.

Growing Garlic in the Garden

By Richard Jauron
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Garlic has been cultivated since ancient times. Garlic (*Allium sativum*) is a member of the onion family. Other edible members of the onion family include chives, leeks, and shallots.

There are several types or forms of garlic cultivated in the home garden. "Top-setting" varieties form bulbils or bulblets at the terminal end of a hollow seedstalk. The bulbils are initially enclosed in a globe-shaped structure. The outer sheath eventually splits, exposing the cluster of small, pea-size bulblets.

Elephant or great headed garlic (*Allium ampeloprasum*) is not a true garlic. It is actually more closely related to the leek. Elephant garlic does produce segmented bulbs similar to garlic. However, elephant garlic has a much milder garlic flavor and may be 3 to 4 times the size of true garlic. Rocambole or serpent garlic produces flower stalks that are distinctly twisted or coiled, sometimes even double-coiled.

Garlic grows best in well-drained, fertile soils that are high in organic matter. Garlic grown in heavy, clay soils often produces misshapened bulbs. Heavy, clay soils can be improved by incorporating organic matter, such

as compost or well-rotted manure. Garlic also requires full sun.

Since garlic rarely produces seed, it is grown by planting cloves. Garlic cloves can be planted in the fall or as soon as the ground can be worked in the spring (late March to early April in central Iowa). Highest yields are obtained from the largest cloves. Carefully break apart the garlic cloves immediately before planting. Place cloves 3 to 5 inches apart within the row. Rows should be spaced 18 to 24 inches apart. Set the cloves 1/2 to 1 inch deep.

Fall planted garlic should be mulched with several inches of straw to help prevent winter injury. Apply the mulch in late fall and promptly remove in early spring. Top-setting garlic varieties can also be grown from the bulbils or bulblets that form at the top of the seedstalk. The bulblets should be planted in early spring where they can remain for 1 1/2 years. The bulblets will form larger, unsegmented bulbs called "rounds" by the end of the growing season. Left undisturbed in the ground, they will form a cluster of cloves by the end of the following summer.

Garlic has a high fertilizer requirement. Apply and incorporate 1 to 2 pounds of an all purpose garden fertilizer, such as 10-10-10, per 100 square feet of garden area prior to planting. Lightly incorporate one additional pound per 100 foot row of the all-purpose garden fertilizer in a band 4 inches to the side of the developing plants 3 to 4 weeks after plants emerge in the spring.

Harvest garlic when the foliage begins to dry. In Iowa, garlic is usually harvested in August or September. Carefully dig the bulbs with a garden fork or shovel. Dry the garlic in a warm, well-ventilated location. Place the garlic on an elevated wire screen or slotted tray to promote drying.

When the tops have dried, cut off the dry foliage 1 inch above the bulbs.

Also, trim off the roots and brush off any



loose soil. Place the bulbs in a mesh bag and store in a cool (32 F), dry (65 to 70% relative humidity) area. Properly cured and stored garlic should keep for 6 to 7 months. An alternate way to store garlic is to braid the foliage together immediately after harvest, dry, then hang the braided garlic in a cool, dry location.



The Brown Marmorated Stink Bug

By Laura Jesse & Erika Saalau
Plant and Insect Diagnostic Clinic
Iowa State University



Now is the time to be watching for the brown marmorated stink bugs (BMSB) to be resting on the south side of the house or entering to spend the winter. If you notice any insects resembling the BMSB please send a digital image to insects@iastate.edu or submit a sample to the Plant & Insect Diagnostic Clinic (no fee).

The BMSB, an invasive insect, is major plant pest as well as a household pest. Brown marmorated stink bugs feed on a wide variety of fruits, vegetables, field crops and ornamental plants. In the fall brown marmorated stink bugs are an accidental invader - like the multicolored Asian lady beetle and boxelder bugs.

Currently there have been reports of BMSB in 33 states, but only in a few states are there large enough populations of BMSB to cause serious damage to produce and crops. In Iowa we are tracking this insect in order to determine when we have established populations. It appears that once established the BMSB is primarily noticed as a household pest as it come indoors in the fall. Then after a few years populations are large enough to start causing damage in fields, orchards, and gardens.

To date the two reports of BMSB in Iowa appear to be one to a few individual insects that arrived from boxes shipped into Iowa from states to the east that have large populations. This insect gets around easily this way because it moves into buildings and warehoused for the winter. We do not yet believe there is an established population in Iowa, but we need your help to track this insect.

Homeowners are likely to be the first to notice BMSB either in the fall when they gather on homes or in the spring as warm weather causes any BMSB overwintering in walls or the attic to move into the living areas of the house. There are also many native stink bugs and other closely related bugs in Iowa that resemble the BMSB.

For pictures of these please see:
<http://www.ipm.iastate.edu/ipm/info/articles/stink-bugs-and-lookalikes>

For a current map of detections in Iowa please see:
www.ncipmipe.org

Overwintering Tender Perennials

By Richard Jauron
Department of Horticulture
Iowa State University

Perennials such as tuberous begonias, gladioli, cannas and dahlias are an integral part of many home landscapes. They put on excellent displays of color until a killing frost. Unfortunately, they will not survive Iowa's harsh winter weather outdoors and must be dug in the fall and stored indoors through the winter months. Horticulturists with Iowa State University Extension and Outreach offer cultural and winter storage requirements for several commonly grown tender perennials. To have additional questions answered, contact the Hortline at 515-294-3108 or email hortline@iastate.edu.

How do I over-winter dahlias?

Cut back the plants to within 2 to 4 inches of the ground within three or four days of a killing frost. After cutting back the plants, leave the dahlias in the ground for an



additional six or seven days to "cure." Then carefully dig up the dahlias with a spade or shovel. Gently shake off the soil, then cut the stems back to within 1 inch of the crown. (The dahlia crown is located at the base of the stems where the tuberous roots are attached.) Carefully wash the dahlia clumps to remove any remaining soil. Allow the dahlias to dry for 24 hours.

When the dahlias are dry, place a layer of vermiculite, peat moss or wood shavings in the bottom of a cardboard box. Place the dahlia clumps upside down on the storage medium and then cover the dahlias with additional vermiculite, peat moss or wood shavings. Repeat the layering procedure until all the dahlias have been placed in the box or the box is full. Store the dahlias in a cool (40 to 50 degree Fahrenheit), dry location.

How do I over-winter cannas indoors?

Cut the plants back to within 4 to 6 inches of the ground a few days after a hard, killing frost. Then carefully dig up the canna clumps with a spade or garden fork. Leave a small amount of soil around the cannas. Allow them to dry for several hours.

Afterwards, place the cannas in large boxes, wire crates or in mesh bags. Store the cannas in a cool (40 to 50 degree Fahrenheit), dry location.

How do I over-winter tuberous begonias?

Carefully dig up the tuberous begonias within a few days of a killing frost. Leave a small amount of soil around each tuber. Cut off the stems about 1 inch above the tubers. Place the tubers in a cool, dry area to cure for two to three weeks. After curing, shake off the remaining soil. Place a layer of peat moss, vermiculite or sawdust in a small cardboard box. Lay the tubers on the storage medium, then cover the tubers with additional peat, vermiculite or sawdust. Store the tubers in an area with a temperature of 40 to 50 degrees Fahrenheit.

How do I over-winter caladiums indoors?

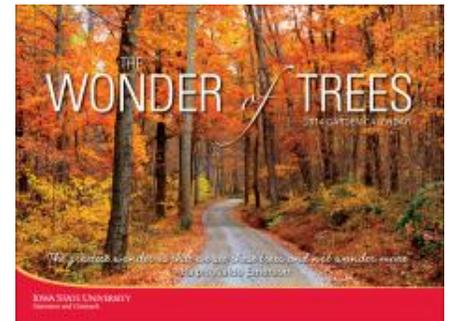
Carefully dig up the caladiums when the foliage begins to yellow with the onset of cool weather or wait until after the first frost. After digging, place the plants in a cool, dry location for one to two weeks to cure. After curing, cut off the dry foliage. Place a layer of peat moss, vermiculite or sawdust in a small cardboard box. Lay the tubers on the storage medium, then cover with additional peat, vermiculite or sawdust. Store the caladiums in a cool (60 to 65 degree Fahrenheit), dry location.

2012 Garden Calendar Available

Trees improve the landscape of Iowa, whether it's with sheltering foliage, beautiful blooms, nourishing fruit, vivid color, or gnarly bark. This year's calendar celebrates the wonderful gifts that trees provide for other living things. In

addition to striking photos, find monthly garden tips, tree-planting instructions, Iowa's state forests, vignettes of historical trees, and quotes that trees inspired.

Makes a great gift and a handy garden journal too! Calendars are available for \$6.00 each - online at www.store.extention.iastate.edu/ or through the Mills County extension office.



Plant Wise Newsletter is Going Paperless!

The Plant Wise newsletter will be transitioning to electronic distribution in February of 2014. We currently mail 175 paper copies of the newsletter and would like to convert most of these subscriptions to electronic delivery via email. Paper subscriptions will still be available at a cost of \$10.00 per year. There will be no cost to receive the Plant Wise newsletter electronically. Please contact Nancy Crews at ISU Mills County Extension and Outreach office to sign up for electronic delivery or paper subscription by December 15, 2013, 712-624-8616 or ncrews@iastate.edu.

Upcoming Horticulture Events of Interest:

Fall Plant Sale – Lincoln, NE

Date: Friday, October 11

Time: 12:00 – 5:00 PM

Place: NE Statewide Arboretum Greenhouse
University of NE at Lincoln

Plants for sustainable landscapes – prairie and woodland natives, trees, shrubs and grasses.

For more information contact Bob Hendrickson, 402-472-2971, rhenrickson2@unl.edu

Website: <http://arboretum.unl.edu/plant-sales>

Tree Pruning Workshop

Date: Thursday, October 26

Time: 9:00 AM – 12:00 PM

Place: Page County Conservation Center at 2039 Highway 71 (Near Clarinda, IA). Then the group will drive to Nodaway Valley Park at 1954 Highway 71

Cost: Free

The workshop will be taught by Jesse Randall, Iowa State University Extension and Outreach Forestry Specialist. Please pre-register by October 24 to receive handouts and refreshments. To register, call Page County Extension at 712-542-5171.

Gardening for Lunch Webinar – Fall Invading Insects

Date: November 5

Time: 12:00 – 12:55 PM

Cost: \$10 or \$50 for the entire program series (see website below for details on the series)

Fall is the time of year when many different insects will begin to invade our homes to avoid horrible winter conditions. In this program you will learn what insects may invade your home, how to identify them and control them.

To register visit: <http://marketplace.unl.edu/extension>

short-day plant. Short-day plants grow vegetatively during the long days of summer and produce flowers when days become shorter in fall. The Christmas cactus will not bloom properly if exposed to artificial light at night in fall. Flowers may also fail to develop if the plant is exposed to temperatures above 70 degrees Fahrenheit. Night temperatures of 60 to 65 degrees Fahrenheit with slightly warmer daytime temperatures are ideal for flower formation.

In late summer, place the Christmas cactus in a cool location that receives bright light during the day, but no artificial light at night. An unused bedroom or basement may have the proper environmental conditions. To avoid flower bud drop, do not move the plant during flower bud development. The Christmas cactus can be moved and displayed in another room when the first flowers begin to open.

My amaryllis has been outdoors all summer. When should I bring it indoors and how do I get it to bloom?

Bring the amaryllis indoors in late September (before the first frost or freeze in fall). In order to bloom, amaryllis bulbs must be exposed to temperatures of 50 to 55 degrees Fahrenheit for a minimum of eight to ten weeks. This can be accomplished by inducing the plant to go dormant and then storing the dormant bulb at a temperature of 50 to 55 degrees Fahrenheit. To induce dormancy, place the amaryllis in a cool, semi-dark location when the plant is brought indoors in late September. Withhold water. Cut off the foliage when the leaves turn brown. Then place the dormant bulb in a 50 to 55 degree Fahrenheit location for at least eight to ten weeks. After the cool requirement has been met, start the growth cycle again by watering the bulb and placing it in a well-lit, 70 to 75 degree Fahrenheit location. Keep the potting soil moist, but not wet, until growth appears.

I saved last year's poinsettia. How do I get it to flower for Christmas?

Poinsettias are short-day plants. Like the Christmas cactus, it grows vegetatively during the long days of summer and produces flowers when days become shorter in fall. In order for poinsettias to flower for Christmas, they must receive complete darkness from 5 p.m. to 8 a.m. each day from early October until the bracts show good color, usually around early December. Most poinsettia varieties require eight to 10 weeks of short days to flower. Gardeners can protect their plants from light by placing them in a closet or by covering with a cardboard box. When using cardboard boxes, cover any openings to insure complete darkness. Exposure to any kind of light between 5 p.m. and 8 a.m. will delay or possibly prevent flowering. During the remainder of the day, the poinsettias should be placed in a sunny south window.

Ask the ISU Extension Gardening Expert

How do I get my Christmas cactus to bloom?

The Christmas cactus requires proper environmental conditions to flower. Critical factors in flower initiation are day-length and temperature. The Christmas cactus is a

Keep the plants well-watered and fertilize every two weeks during the forcing period. While poinsettias are difficult to flower in homes, proper care can reward home gardeners with a colorful plant for the holiday season.

When should I harvest pears?

Pears should not be allowed to ripen on the tree. If the fruit are left on the tree to ripen, stone cells develop in the fruit giving the pear a gritty texture. Tree-ripened fruit are also poorly flavored. Harvest pears when the color of the fruit changes from a deep green to a light green. Also, the small spots (lenticels) on the fruit surface change from white to brown. At the time of harvest, the fruit will still be firm, not soft.

When can I cut back my rhubarb plants?

Don't cut back the rhubarb until the foliage and stalks have been destroyed by a hard freeze. To produce a good crop next spring, the rhubarb plants must manufacture and store adequate levels of food in their roots. The foliage continues to manufacture food as long as it's healthy. Once destroyed, the foliage and stalks can be removed.

OCTOBER GARDENING TO DO LIST



- Keep plants, especially newly planted trees, shrubs, and perennials, well watered until the ground freezes.
- Remove plant debris from the vegetable garden to protect next year's planting from insect and disease build-up.
- Carefully blow or rake tree and shrub leaves off your perennial gardens. Large leaves get wet, mat down, and provide poor insulation for your plants.
- Shred fallen leaves and use them as a soil mulch or amendment for new plantings. Or rake and bag them for use in next year's garden.
- Stop fertilizing house plants.
- Remove stakes and supports as plants decline. Clean them and store them properly for next year's garden.
- Dig dahlias and cannas after a killing frost.

- Remove pumps from water features to prevent freezing.
- Save pumpkin seeds and roast them for a crunchy, healthy snack.
- To initiate flowering, begin exposing poinsettias and holiday cacti to short days. Refer to ISU publications RG 308 and RG 316
- Pot Amaryllis bulbs for forcing.
- Plant spring flowering bulbs.
- Inspect all plants before bringing them back inside for the winter. Look for insect pests and disease. Treat as needed.
- Continue to mow your lawn until the grass stops growing – when temperatures are consistently below 50°.
- Plant garlic in a sunny, well drained site.
- Leave stems, flower heads, and seedpods standing for winter interest.
- Harvest all full-sized tomatoes and peppers before frost.

Resources for Horticulture information

ISU's Hortline at (515) 294-3108
(Monday-Friday, 10 a.m.-noon, 1-4:30 p.m)

ISU/Mills County Extension: 712-624-8616
www.extension.iastate.edu/mills/yardgarden.htm

Iowa State University Publications

PM 2079	Flowering Plants for the Late Summer Garden
RG 316	Poinsettia Care
RG 308	Growing Holiday Cacti
RG 328	Growing Amaryllis
PM 1943	Deciduous Shrubs
PM 731	Harvesting and Storing Vegetables
RG 320	Growing and Over-wintering Garden Geraniums
RG 304	Late Season Perennial Flowers

Horticulture Publications on-line

<https://www.extension.iastate.edu/store/ListCategories>

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