What’s the Buzz About Illinois Bees?

BY KENNETH JOHNSON

Mention bees, and for most people the image of a golden-yellow honey bee comes to mind. But in reality, there are some 500 species of bees native to Illinois alone (and over 20,000 species worldwide!).

Though honey bees live in large colonies—often, with human help, in hives—that can reach 60,000 individuals, and bumble bees live in smaller groups of up to 400, 90% of our native bees are solitary. Among honey and bumble bees, a division of labor means the queen lays eggs and her offspring perform other jobs (caring for young, foraging, etc.); with solitary bees, the females do all of those jobs by themselves.

Most solitary bees (70%) nest in the ground, though some nest in wood or in hollow or pithy branches. Once a female has selected a place to build her nest, she creates nest cells. She places a ball of pollen mixed with nectar inside each cell and lays an egg on the pollen ball. When the egg hatches, the larva feeds on the pollen ball. Generally these bees do not emerge until the following year.

These are four of the more common native bees in Illinois:

BUMBLE BEES. Named for the buzz they produce while collecting pollen, bumble bees are social insects, living in colonies of 50 to 400 individuals. At the end of summer, colonies die off and the mated queens hibernate. Bumble bees are cavity nesters, generally choosing abandoned underground rodent burrows. Active from spring through late fall, these robust bees are hairy, with yellow, black, white, brown, or orange bands.

EASTERN CARPENTER BEES. Active from spring through fall, Eastern carpenter bees are often considered pests for their habit of constructing nests in the wood of homes and other buildings. (Painting the wood can help prevent this activity.) Due to their large size, Eastern carpenter bees primarily visit large and open-faced flowers. They look similar to bumble bees, but the top of the abdomen is bare, black, and shiny.

LEAFCUTTER BEES. Cutting pieces of leaves or petals to line the walls of their nests, leafcutter bees are solitary nesters; they create their nests in already existing cavities in wood and other plants. Active from early to late summer, leafcutter bees are medium to large in size, with smoky-colored stout bodies with pale bands on the abdomen.

SWEAT BEES. Many bee species are attracted to human sweat, which they consume for the salt it contains. Most sweat bees nest in the ground and can be found from spring through fall, with most species being active in summer. Small to medium-sized, sweat bees are often brightly colored and metallic, with colors ranging from green to red and yellow.

Other native bees include yellowfaced bees, mason bees, small carpenter bees, longhorned bees, mining bees, cellophane bees, and squash bees.

Native bees are generally much more reluctant to sting compared with honey bees and wasps. They are also important pollinators. Native bees are often more effective and efficient pollinators than honey bees, especially when it comes to native plants. So don’t flee the bees—take a moment to enjoy them instead.
Identifying and Managing Your Garden Weeds

BY JENNIFER FISHBURN

While not the most enjoyable outdoor task, weeding is necessary to put the emphasis on the plants you wish to flourish. The saying “One year of seeds equals seven years of weeds” provides enough motivation for me to pull weeds in summer’s heat, humidity, and sometimes mud.

A weed is defined as a plant out of place. Weeds compete with desirable plants for light, nutrients, space, and water. Weeds also can harbor mosquitoes and plant diseases. It is thus critical, especially at this time of year, to control weeds in the garden.

Many weeds develop at this time of year. Some of the ones I have pulled are smartweed, lambsquarters, foxtail, and red root pigweed. What gardeners dread, and what these weeds have in common, is that they grow rapidly, flower quickly, and produce thousands of seeds.

Proper identification of a weed and understanding its growth cycle is necessary to its control. Is the weed an annual, biennial, or perennial? Annual weeds, including crabgrass, smartweed, foxtail, buttonweed, and lambsquarters, come back from seed each year. Biennial weeds live two years, producing seed the second year. Burdock is one example of a biennial weed. Perennial weeds come back year after year from the same root. Dandelions, quackgrass, and creeping Charlie are examples of dreaded perennial weeds.

Options for controlling weeds include mulch and groundcovers, herbicides, and the (not-so-favorite) hand removal.

MULCH. Mulching is my favorite option for weed control. Mulches help to suppress seed germination, conserve soil moisture, and keep the soil temperature more even. In vegetable gardens, mulch keeps the fruits off the ground. Most plants will benefit from a 2- to 3-inch layer of mulch applied around the plant. To avoid crown rot, keep mulch away from the base. Mulches control weeds by preventing light, which is needed for seeds to germinate, from reaching the soil surface. Mulches can be either organic or inorganic. Organic mulches include compost, shredded leaves, wood chips, dry grass clippings, newspaper, and pine needles. Inorganic mulches include fabric weed barrier, black plastic, and rock.

GROUNDCOVER. Bare patches of soil invite the germination of weed seeds, especially in sunny spots. To prevent weeds from taking over the bare soil, plant a suitable groundcover, such as hosta or vinca in a shady area or a thyme or low-growing sedum in full sun.

HERBICIDE. Preemergent herbicides keep seed from emerging through the soil, whereas postemergent herbicides control a weed after it has emerged. Glyphosate is a nonselective herbicide (meaning it will kill any plant) that can be an effective tool for difficult-to-control perennials when other methods have failed. To protect your desirable plants, use a foam paintbrush to apply the glyphosate to a weed, or use the gel formulation, which is easier to target. In vegetable gardens use herbicides only when necessary, and use them carefully, making sure that all of your crops are cleared on the label for use of the herbicide you have chosen. When using any chemical, it is important to read and follow all label directions. And pay attention to the appropriate timing for applying the chemical, or you will have wasted your time and money.

HAND REMOVAL. Removing weeds by hand includes hoeing, tilling, mowing, and hand pulling with a tool such as a garden knife. Cut annual weeds off just below the soil surface with a sharp hoe. Take care, because the roots of desirable plants are just below the soil surface and can be easily damaged. Minimal soil disturbance is best because tilling can bring seeds up to the surface where they will germinate. One rule of thumb: Weeds are easiest to remove when the soil is moist but not muddy. Hand removal is easy if you start when weeds are small and tackle one small area at a time.

For more information on weed identification and control of common weeds, visit University of Illinois searchable websites at go.illinois.edu/weedID.

Beware of Dangerous Carrots!

BY RHONDA FERRIS

Carrots are a favorite root vegetable of children and adults alike. The delicious carrot comes in many colors and sizes, but unfortunately, the carrot family also includes a number of dangerous, poisonous plants.

Two types of hemlock are stomach poisons when eaten. Poison hemlock (Conium maculatum), which is not native to Illinois, was added to the Illinois Exotic Weed list in 2015. It grows 4 to 9 feet tall and has 4- to 6-inch white flowers and purple-streaked, waxy stems. The plant, common along roadsides and ditches, has a disagreeable “mousy” odor. The entire plant is poisonous if ingested.

Water hemlock (Conium maculata; pictured at right) is considered by many to be the most poisonous plant in the northern temperate zone. Only a small amount of the plant’s toxic substance is needed to produce poisoning in animals or humans. This native plant grows 3 to 6 feet tall, with 6-inch white flowers and stout, purple-streaked stems. All parts of the plant, especially the roots, are poisonous.

The next three dangerous carrots cause photodermatitis. Cow parsnip, wild parsnip, and giant hogweed contain an allergen that is activated by sunlight to cause a rash, blisters, or other skin irritations in susceptible people.

• Cow parsnip (Heracleum maximum) is a native plant that can reach 8 feet tall. It has white flowers, like the hemlocks, but its flowers are larger, growing to 10 inches across.

• Wild parsnip (Pastinaca sativa; pictured at right) has large yellow flowers that are about 5 inches across. It is a stout plant with grooves along the stem that grows to 5 feet tall.
Butterfly Weed: Perennial of the Year

BY NANCY KREITH

Late spring to early summer is a good time to incorporate perennials into the garden. As you contemplate plant selection, why not consider butterfly weed, named the 2017 Perennial Plant of the Year by the Perennial Plant Association. Butterfly weed (Asclepias tuberosa) is a well-behaved, easy-care plant native to Illinois. It is common in most regions of the state, except some western areas. It also goes by the name of butterfly milkweed, but people tend to call it butterfly weed because it lacks the white sap of other milkweed species. Butterfly weed is different from the common shrub butterfly bush (Buddleia spp).

Though butterfly weed is commonly found in dry prairies, it adapts to other growing conditions. It prefers full sun and dry to semi-moist, acidic sandy soil, but it tolerates loam and clay soils if they are well drained. Butterfly weed ranges from 1 to 2½ feet tall and spreads 2 feet wide; it displays unique long-lasting orange blooms from early to mid-summer, and it can bloom again in late summer to early fall. On occasion, though rarely, flowers may have hints of red and yellow. The blooms make excellent cut flowers.

In the garden, butterfly weed pairs nicely with Liatris spicata, Echinacea sp., and Salvia sp. As the only Illinois milkweed species with orange blossoms, it is easily recognizable.

Butterfly weed will not spread as aggressively as many other milkweeds, but it does produce pods with seeds carried by the wind. To keep the plant contained and encourage repeat blooms later in the year, deadhead spent flowers. Like other milkweeds, butterfly weed is a host plant for the monarch butterfly caterpillar, an insect population that has been decreasing in recent years. In addition to the monarch butterfly, other butterflies, the ruby-throated hummingbird, and many bees, wasps, and moths enjoy feeding on butterfly weed. Milkweed beetles and aphids can feed on it rather destructively, but deer tend to avoid it.

This native species should be on everyone’s plant list. It benefits wildlife and offers long-lasting beauty without much work. Be patient, as it will take a couple years for butterfly weed to look its best. As it tends to emerge late in the spring, do not cultivate too early in its planted location. Nurture young plants by not cutting them back in the fall, and add a layer of mulch until they become well established. You can add beauty to the landscape while supporting pollinators by planting butterfly weed this summer.

Giant hogweed (Heracleum mantegazzianum) is the worst of the three species that cause blisters in the sun. Fortunately, in Illinois it has only been found in an isolated northwest location, and those plants have been eradicated. This plant lives up to its name as a giant. It grows 15 feet tall with 5-foot leaves and 2½-foot white umbel flowers. Its massive size makes it desirable to some home gardeners, but it is a public hazard that causes severe skin irritation in susceptible people. A USDA pamphlet says this plant’s sap produces painful, burning blisters that later develop dark scars that may persist for years. Giant hogweed is a federal noxious weed, unlawful to propagate, sell, or transport in the United States.

Be reassured that not all in the carrot family are dangerous. Queen Anne’s lace (Daucus carota) is also called wild carrot due to its large, edible taproot. It grows 4 feet tall and has lacy 4-inch flowers. This plant is the ancestor of our cultivated carrot, though its roots are white instead of orange.

Want more information on growing the edible type of carrot? Check out the University of Illinois Extension vegetable gardening website (extension.illinois.edu/veggies).

School Gardens: Cultivating Produce and Passions

BY BRUCE J. BLACK

Gardens have long offered common ground for people to come together, take in the beauty of plants, and grow flowers or food. Gardening is a skill shared from one generation to another among families and friends and in school settings. During the world wars, victory gardens were a popular way for civilians in America to support the military’s efforts while growing food for their communities. School gardening has gained popularity over the last several decades, even becoming part of the education department curriculum in several states.

Whether with elementary, middle school, or high school students, school gardens give hands-on experience interacting with plants, exploring nature, and growing food or flowers. As an outdoor classroom, a garden can be used to teach and reinforce not only science and math concepts, but also social studies, history, health, and much more. School gardens aid student improvement in school subjects while teaching a respect and appreciation for nature. Specifically, school garden programs have been linked to multiple benefits, not just for students but for teachers and communities as well:

- A sense of community and belonging
- Communication of knowledge and emotions
- Leadership skills and life skills
- Improved social skills and behavior
- Increased motivation to learn
- Promotion of sharing and other positive behaviors
- Relaxation and stress relief
- Strength, endurance, and flexibility
- Encouraging healthy eating
- Tasting new and fresh produce
- Learning where food originates

Using a new garden theme each year helps keep students excited about gardening, and teachers can build an entire suite of lesson plans around the garden. These are some popular themes:

- Alphabet garden
- History garden
- Butterfly garden
- Herb garden
- Colors-of-the-rainbow garden
- Three-sisters garden (corn, beans, and squash)
- Pizza garden
- Outer space garden
- Sensory garden
- Tea garden
- Storybook garden

Where a school lacks the right space for a large garden, raised beds or containers might work instead.

University of Illinois Extension offers even more inspiration on school gardening at My First Garden (go.illinois.edu/MyFirstGarden) and School Garden Resources (go.illinois.edu/SchoolGardenResources).
Spice Up Your Landscape with Ornamental Peppers

BY ALICIA GARDNER

Ornamental chile peppers may provide just the kick you’re looking for to spice up your landscape. Breeders at the New Mexico State University Chile Pepper Institute have paired the vibrant and variable colors available in chile peppers with a compact growth habit and upward-facing fruits. The result? A whole suite of ornamental chile pepper cultivars.

Since the 1990s, NMSU has released a series of holiday-themed ornamental chiles. As part of the fun, the colors of ornamental chile peppers change as the fruits mature. ‘NuMex Valentine’s Day’ peppers turn from red to white and ‘NuMex Halloween’ from black to orange; ‘NuMex Easter’ peppers are purple, yellow, and orange. To date, NMSU has released over a dozen ornamental chile cultivars.

These plants are well suited to growing in full-sun flowerbeds and patio pots; they even can be grown indoors as long as they have 12 hours of strong light. The short stature of ornamental chile plants—maxing out below 12 inches—makes them perfect for the shorter tiers in your landscape design.

Ornamental chiles can tolerate hot conditions, but for best growth, water when the top half inch of soil becomes dry. Ornamental chile peppers are frost tender, so hold off planting until several weeks after your area’s average frost-free date. For more on cultivating peppers, visit U of I Extension’s “Watch Your Garden Grow” (go.illinois.edu/peppers).

In 2014, ‘NuMex Easter’ was named an All-America Selections winner for its superior performance at trial gardens across the country. All-America Selections is an independent, not-for-profit organization that tests new varieties of garden plants, releasing the best as AAS winners. The judges appreciated the cultivar’s compact and uniform plant size, colorful and eye-catching fruits, and ease of growth. Ornamental chile peppers come with the bonus of being edible, at least if you enjoy spicy flavors.

But if you are not a fan of spicy foods, there are ornamental sweet pepper varieties just for you. ‘Pretty N Sweet F1’ is a sweet pepper cultivar. A 2015 AAS winner, it was selected for having earlier and more prolific fruit production, a sweeter taste, and thicker pepper walls than the comparisons. Plants grow to 18 inches tall, with a compact habit making them suitable for bedding plants and growing in containers.

Ornamental peppers are a fun and unique addition to the garden, sure to start conversations and attract visitors. For more information about these and other All-America Selections winners, visit all-americaselections.org/winners.
Tree Foliage Diseases May Look Bad, But They’re Rarely Fatal

BY RICHARD HENTSCHEL

Almost every year, you can see a variety of spots, blotches, and discolored areas on the leaves of ornamental and shade trees. In any year when the spring weather promotes foliar diseases, you will see even more. A prolonged period of cooler, wetter weather allows more time for infection and for fungal spores to travel.

For any plant disease to occur, several conditions need to be met. In addition to the proper environment, the pathogen itself must be in the area, and the plant must be susceptible to invasion by the fungal spore. When diseases do not develop, it is typically because the environment conditions change.

In most cases, the concern with diseased foliage is aesthetic rather than financial. A common exception is the home fruit orchard—trees heavily damaged by foliar diseases produce fruit of lower quality.

Fungal foliar diseases overwinter in the yard or nearby in the neighborhood. Pathogens that need only one host overwinter in leaf litter below a tree and wherever infected leaves end up in the yard. In the early spring, while the weather is cool and wet, the overwintering disease sends up spores that can infect susceptible trees. A disease that is common among flowering crabapples and apple trees that requires two different hosts is cedar apple rust. We see its damage on our deciduous plants, but the disease actually overwinters on Cedar (Juniper) evergreens.

Managing foliar diseases requires good sanitation, plus fungicide sprays if warranted. Cleaning up affected leaves at the end of the season will lessen the disease inoculum for next year, but it won’t eliminate it. Since spores are airborne, infection can occur from outside your yard. If improving sanitation reduces infections sufficiently, no further action is needed. If a spray is still needed, timing is critical. Fungicides are preventive in nature; they cannot cure an infection already in place. The first sprays are applied as leaves appear and flower buds swell in the early spring, and they may need to be reapplied two or more times to protect the very young emerging leaves and flowers during the infection period. It is time to start when you see the bit of green (leaves) or pink (flowers) showing.

By summer the treatment period has passed, so note which plants are having foliage problems and plan to take appropriate actions. This fall, rake up those fallen infected leaves, or use a lawnmower to mulch and collect them; either way, put them into landscape waste bags for collection. (If your area doesn’t collect yard waste but burning or burying is allowed, that will work as well.) If the problem is cedar apple rust and you have Cedars/Junipers in your yard, you can reduce the inoculum for next season by removing the galls that have formed.