



IN THIS ISSUE

1.

Top Five Cool-Season Annuals
for Containers

2.

Fire Blight of Apples and Pears

3.

How Can I Support Pollinators?
Accessible Edible Gardens

5.

Moss Gardening (Yes, You
Read That Right)

6.

Coriandrum: 2017 Herb of
the Year

Top Five Cool-Season Annuals for Containers

BY CANDICE HART

When winter's freeze finally fades, gardeners are itching to get decorative pots filled with bright spring annuals. But not all annuals are suited for spring conditions, which are frequently very cool and wet. The so-called cool-season, or hardy, annual flowering plants can tolerate those cooler temperatures and wet conditions—possibly even a light freeze. But take caution when a hard frost is predicted, as you may still need to cover containers or bring them indoors overnight.

Consider these five cool-season options to take your spring containers to the next level:

PANSIES

Pansies are a classic but sometimes overlooked spring flower, known for an extensive palette of colors and bi-colors. The petals commonly bear a characteristic face pattern, and pansies' growth habit of 6 to 8 inches tall makes them ideal for a container on a patio table or at the front door. Don't expect pansies to stick around for your summer container mix, as they fade out very quickly in the heat of summer.

SWISS CHARD

A leafy green vegetable in a spring container garden? Why not? This salad-garden favorite develops beautiful—and edible—pink, red, yellow, white, or orange full stems. Swiss chard can add nice height to a spring container. It grows 12 to 18 inches tall with delicious dark green, crinkled leaves you can harvest at any time for salads or cooking. Swiss chard can still look great once the heat of summer hits, but the flavor changes in those warmer temperatures.



NASTURTIUMS

An herb, too? Definitely. Nasturtiums have both flowers and leaves that are edible and make a tasty, peppery addition to salads. Easy to grow both from seed and from purchased transplants, nasturtiums have both brilliant colors and a low-growing habit that makes them a perfect choice for the edges of a spring container. Nasturtiums also have interesting scalloped, sometimes variegated, foliage, and their habit can be trailing or mounding.

DUSTY MILLER

If you want to add some contrast to your spring containers, dusty miller is the plant for you. Grown for its fuzzy silvery foliage, dusty miller creates a great backdrop for the bright colors of spring. It is a sun-loving annual, almost indestructible, that is very easy to grow; it reaches 6 to 9 inches tall and sports velvety, scalloped silver leaves. As a bonus, it also tolerates the heat of summer, so it can survive nicely from spring to fall.

SWEET ALYSSUM

Dainty and cute, sweet alyssum is a low-growing cool-season annual that makes a great “spiller.” Producing thousands of tiny white, rose, or bicolored blooms, sweet alyssum will quickly spread or trail through your pots, cascading over the edge of the container.

For more recommendations on less-typical annuals, check out University of Illinois Extension's website “Beyond Impatiens and Petunias” at extension.illinois.edu/beyond.



Fire Blight of Apples and Pears

BY ELIZABETH WAHLE

Fire blight, caused by the bacterium *Erwinia amylovora*, is a common and potentially serious plant disease, specific to the family Rosaceae. It infects most notably apple and pear trees, but it can also affect other rose family members, such as spirea, mountain ash, raspberries and blackberries, cinquefoil, quince, hawthorn, and cotoneaster. Depending on the plant part that is infected, the disease is also known as blossom blight, shoot blight, twig blight, spur blight, fruit blight, and rootstock blight.

Trees infected by fire blight appear as if the tips have been scorched with fire. Infected shoots can also be identified by the characteristic “shepherd’s hook” on the tip. Death can result from severe infections of fire blight, especially on younger trees and trees grown on fire blight-susceptible rootstocks. In most cases fire blight will not kill an apple or pear tree, but trees can become unsightly and yields are reduced.

Three conditions are necessary for the development of fire blight—the presence of the pathogen, moist conditions, and a high temperature. Favorable conditions include rain, heavy dews, or high humidity in combination with an optimum temperature range of 65 to 86 degrees F. Fire blight bacteria overwinter in cankers formed from the previous year, and growth resumes in the spring. Bacteria enter plant tissue through natural openings and wounds created by insects, storm damage, and mechanical injury.

Take care when selecting an apple or pear tree for planting—some varieties are more susceptible than others to fire blight. Lists of susceptible and resistant varieties appear below.

HIGHLY SUSCEPTIBLE VARIETIES

Apple – Braeburn, Cortland, Fuji, Gala, Jonathan, Lodi, Rome Beauty, Winter Banana

Pear – Anjou, Bartlett, Bosc, Red Bartlett, Starkrimson

MODERATELY SUSCEPTIBLE VARIETIES

Apple – Empire, Golden Delicious, Granny Smith, Jerseymac, Jonafree, Jonagold, Jonamac, McIntosh, Mutsu, Spartan, Stayman

Pear – Maxine, Seckel

MODERATELY RESISTANT VARIETIES

Apple – Delicious, Liberty, Priam, Prima, Priscilla, Redfree, Winesap

Pear – Moonglow, Starkling Delicious

What should you do if your tree develops fire blight? The results can be unsightly when trees are heavily infected, and many home growers feel compelled to remove the infected parts. To avoid spreading the infection to healthy shoots, however, it is best to delay such removal until the dormant season. Pruning in summer promotes new growth, which is more susceptible to fire blight. Avoid overfertilizing apple and pear trees, because this practice also promotes lush green growth, which is highly susceptible to fire blight. Fertilizing pears at all is generally not recommended, as pears are generally more susceptible to fire blight than apples. Even fertilizing the lawn under the fruit trees can stimulate excessive growth.

If pruning cannot be avoided, wait for rain-free weather, when conditions are less conducive to infection spread. Always make the pruning cuts at least 6 inches below the last point of visible infection. Wipe the pruning shears of any debris after each cut, then sterilize them by dipping them in 1 part liquid bleach to 4 parts water.

Another line of defense against fire blight is chemical control. Because fire blight is a bacterial disease, fungicides usable by home gardeners are not effective. One option is Bordeaux mixture, applied during the dormant stage to reduce the overwintering inoculum level. Agricultural streptomycin labeled for apples and pears is another option. It should be applied just prior to the critical infection period between bloom and petal fall. Both Bordeaux mixture and agricultural streptomycin are packaged for homeowner use and should be available in retail outlets that cater to home fruit growers.



The characteristic scorched appearance of an apple shoot infected by fire blight.

An apple tree heavily infected by fire blight.



How Can I Support Pollinators?

BY KIM ELLSON

The decline of pollinators is in the news—from the plight of the honeybee to the predicament of the Monarch butterfly. But these iconic pollinators are indicative of a far more widespread problem. There are over 4,000 species of native bees and 700 species of butterflies in the United States, and many are decreasing in numbers.

WHAT ARE POLLINATORS?

A pollinator is anything that transfers pollen between or within flowers, leading to fertilization and thus fruit and seed set. In Illinois pollinators are typically bees, butterflies, moths, hummingbirds, and insects. Without these beloved creatures, many of our fundamental crops would be lost, as one of every three mouthfuls of food we eat depends on bees. Pollination is also essential for seed set and therefore plant survival, so whether or not one is a wildlife lover, everyone depends on pollinators.

WHY ARE POLLINATORS DECLINING?

Pollinator are in decline for multiple reasons:

- Widespread use of pesticides, especially neonicotinoids
- Lack of native plants
- Lack of good quality habitat
- Removal of winter nesting material
- Invasive pests, plants, and diseases

WHAT CAN GARDENERS DO TO HELP?

- Reduce or eliminate pesticide use.
- Grow native plants.
- Cultivate plant diversity.
- Select plants rich in pollen for foraging, and host plants for reproduction.
- Ensure a succession of blooms from early spring to late fall as a continuous food source.

- Plant in small groupings rather than individual plants.
- Reduce the size of your lawn.
- Practice natural lawn care—leave lawn clippings to decompose, apply compost/organic fertilizer, forego pesticides.
- Embrace flowers in the lawn; clover and dandelions are excellent pollen sources.
- Leave perennials in place over winter; do not cut down and remove plant materials. (Many butterflies and bees overwinter in hollow plant stems or leaf litter.)
- Allow leaf litter to remain.
- Avoid hybridized plants, as these have little pollen; select natural forms.
- Provide a water source.

If you wish to provide a pollen source but are not ready to grow natives, find out which common garden plants are good pollen producers. Some are very suitable: Zinnias, Cosmos, sunflowers, marigolds, Alyssum, Crocus, Allium, Anemone, Sedum, yarrow, butterfly bush, Caryopteris, Russian sage. Allowing herbs to bloom is a simple way to support pollinators, who cherish mint, borage, fennel, cilantro, thyme, lavender, and rosemary.

It's okay to start small—don't think you need to revamp your entire garden. With nearly all of the land in Illinois being privately owned, small changes can together make a big difference.

Pollinators won't be the only ones to benefit from your garden changes. Sharing your garden with wildlife is such joy that once you experience it, the thought of gardening without life buzzing around seems bleak. Look forward to enjoying the tranquil calm of watching a beautiful butterfly fluttering between plants on a sunny afternoon while soaking up the rich fragrance of your pollinator plants.

For more information on sustainable gardening, visit our website on the Conservation@Home program: go.illinois.edu/ConservationatHome.

Accessible Edible Gardens

BY ANDREW HOLSINGER

As spring approaches, eager gardeners can hardly wait to put their planning efforts to work. But planting the garden may have some challenges that can—and should—be addressed before the harvest.

Garden within your reach. Maintaining access to your garden is important throughout the season. Think about the size of your garden in relation to your family size. It can be surprising how much produce you can grow in a small space when it is properly managed. Vertical or container gardening may put you in touch with your harvest more easily.

Plan for adequate spacing. Proper spacing is important to keep plants healthy and thriving. Check the back of your seed packet to reference how far apart given plants need to be.

Use containers to assist with placement. Are space restrictions a dilemma? They are easily solved with container growing. Turn your patio into an edible palace with a palette of vegetables to choose from. Select dwarf varieties that will remain a manageable size for growing in containers.

Elevate with raised beds. A challenging growing site may benefit from increased drainage with the aid of a raised bed. Make your harvest easier to grasp by limiting the width of your raised bed to 4 feet. Construction materials can vary, but be sure they are food safe—avoid railroad ties and other pressure-treated materials that can contaminate the soil. You may be able to upcycle some natural materials for an environmentally friendly win.



NATIVE POLLINATOR PLANTS FOR CONTINUOUS BLOOM

Species	Common Name	Bloom Period	Height	Color	Preferred Conditions	Plant's Pollinators
<i>Mertensia virginica</i>	Virginia Bluebells	Early spring	1–2 ft	Blue	Part sun	Bees, butterflies
<i>Aquilegia Canadensis</i>	Columbine	Spring	1–3 ft	Yellow/red	Part sun	Bees, hummingbird
<i>Baptisia leucophaea</i>	Cream Wild Indigo	Late spring to early summer	1.5 ft	Cream	Sun	Bees, butterflies
<i>Pycnanthemum virginianum</i>	Mountain Mint	Early to midsummer	3 ft	White	Sun	Bees, butterflies
<i>Monarda fistulosa</i>	Bee Balm; Bergamot	Early to midsummer	2–4 ft	Lavender/ pink	Sun	Bees, butterflies
<i>Penstemon digitalis</i>	Foxglove Penstemon	Midsummer	3 ft	White	Sun	Bees, butterflies, hummingbird
<i>Liatris aspera</i>	Rough Blazing Star	Midsummer	2–5 ft	Purple	Sun	Bees, butterflies
<i>Echinacea pallida</i>	Pale Coneflower	Mid- to late summer	3 ft	Purple	Sun	Bees, butterflies
<i>Lobelia cardinalis</i>	Cardinal Flower	Mid- to late summer	2–3 ft	Red	Sun	Hummingbirds, butterflies
<i>Rudbeckia triloba</i>	Brown-Eyed Susan	Late summer, early fall	5 ft	Yellow	Sun	Bees, butterflies
<i>Veronicastrum virginicum</i>	Culver's Root	Midsummer to end of summer	5 ft	White	Sun	Bees, butterflies
<i>Asclepias tuberosa</i>	Butterfly Weed	Midsummer to end of summer	1–2 ft	Orange	Sun	Bees, butterflies, hummingbird
<i>Symphyotrichum novae-angliae</i>	New England Aster	Late summer to late fall	4 ft	Purple	Sun	Bees, butterflies
<i>Solidago speciosa</i>	Showy Goldenrod	Late summer to early fall	4 ft	Yellow	Sun	Bees, butterflies

Try a keyhole garden. A keyhole garden is a raised bed structure, usually round, with a section of the edge cut out (thus resembling an old-fashioned keyhole) and a basket at the center. The design makes it easier to access the garden with compost and water. Fertilizing and watering is accomplished using the center basket. Keyhole gardens are helpful in drought conditions, as water is stored in the pore spaces below the growing space.

Reach new heights. A trellis or arbor is often overlooked for its potential to grow vegetables vertically, making harvest easier and saving space. Vertical growing systems can be purchased, and you might even try the experience of a hydroponic system.

Extend the season. A great way to extend the accessibility of vegetables is to use methods to lengthen the growing season. Row covers can protect your vegetables from frost, as well as from insects that can be bothersome. But don't forget to allow pollinators to reach the crop if you use row covers.

Water smart. Watering is an often time-consuming task that can be automated with a drip irrigation system. With drip irrigation, less water typically contacts the plants, reducing disease pressure.

Don't forget herbs. Herbs are superb! Their flexibility allows them to be grown indoors or outside. Whether grown in containers or in-ground, herbs make nice additions to any garden.



Raised beds can be home-designed or commercially purchased (like this one).

Moss Gardening (Yes, You Read That Right)

BY CHRIS ENROTH

A quick Internet search will reveal that gardeners tend to be obsessed with moss—that is, obsessed with removing it from their garden. Article after article features tips and tricks for eliminating moss. But there is a growing “moss movement,” with homeowners purposefully planting moss in gardens and even some very unlikely places, including showers and coffee tables.

THE MOSS BACKSTORY

If you dream of strolling barefoot through your garden over a carpet of moss, there are some things to know about these miniature plants. Mosses, which are bryophytes, are believed to be one of the earliest plants; they appear in the fossil record 450 million years ago—50 million years before the evolution of vascular plants like ferns. Bryophytes are distinct in containing no lignin, a complex molecule that gives plants support and rigidity. All other types of land plants, from grasses to trees, create lignin in their tissues.

When you encounter a mat of moss in the forest, you may assume the mat is the entire plant, but mosses are tiny and tend to grow in colonies. In fact, look carefully at moss under a hand lens or microscope and you can isolate a lone stem with small scales or needles of various shapes, sizes, and colors depending on the species. Moss plants do not have roots; instead they anchor to a surface with rhizoids, which are modified portions of the stem.

Water is critical to the life cycle of most moss species. Different from the true leaves found on most plants, mosses do not have a protective cuticle, and these tiny plants are only one cell layer in thickness. Mosses use osmosis to move water and nutrients into their cells.

Water is also critical to moss reproduction. Moss utilizes water's strong surface tension to capture and hold water within the colony. Have you ever stepped on or squeezed a mat of moss and watched the water drain out as if the moss were a sponge? Water stored in mats of moss allows the male sperm to swim throughout the colony to find the female egg ready for fertilization. Mosses can also propagate asexually through water.

GROWING A MOSS GARDEN

Moss grows virtually everywhere—from mountain tops to swamps, shade to sun, wet habitats to dry. It truly is a remarkable group of species. There seems to be a moss for any location. For the beginning moss gardener, though, it is best to select a shady site with access to a nearby water supply. Moss prefers an acidic soil, though moderately alkaline soil is not a terrible impairment so long as the site is suitable. By selecting an area that already has existing moss colonies, you know the habitat is suitable for your future moss garden.

A very popular notion is to install moss using a slurry. Recipes for making a moss slurry can be found on various Internet websites; they typically involve using a blender to puree a chunk of moss in some buttermilk. Many commercial moss growers and long-time moss gardeners say this is an excellent way to ruin a blender, but not to propagate moss. Try these steps instead:

- Prepare the planting surface by removing weeds and debris, and firm up the spot where you will be planting.
- Tear the moss into small pieces.
- Dip the pieces into a bucket of water.
- Place the moss pieces on the soil surface, pushing down to make sure there is good contact between moss and soil.
- Mist the moss regularly. You can even do this in the winter. Since mosses have no roots and take in water through their leaves, a deep watering is not necessary.
- Keep adding new pieces as you get them.
- Be patient! It will take a few years for the moss to establish and begin to spread to create that beautiful carpet.

Even though mosses are commonly found in forests, they will not thrive when smothered under a layer of leaves. To remove leaves and other debris that may fall on your moss, use a leaf blower or very light sweeping with a broom. Some gardeners place mist netting over their moss gardens to collect leaves in the autumn. Don't rake, which can be very damaging to moss colonies.

Weed control is also important, as many weed seeds will germinate readily in a mat of moss. Shady areas in a moss garden tend to have lower weed pressure compared with sunny locations.

Watering is critical. Though many mosses can survive droughts by slowing their growth or going dormant, that doesn't lend well to the lush moss carpet you envision. To establish and maintain large colonies of moss, you may need to set up an irrigation system or method to deliver a gentle mist to the top of the plants. Set up an irrigation timer to mist three times a day, no longer than five minutes at a time.

Mosses harvested onsite or in similar growing conditions will grow best. Never harvest moss from land preserves or private property without permission from the owner!

Moss is a fun plant, with a remarkable history and life cycle. No longer does it have to be relegated to the category of weed or nuisance. Fellow gardeners, let us embrace and cultivate our moss. A moss garden is possible in Illinois with the right location, proper site preparation, good maintenance, and a little patience.



Office of Extension and Outreach

111 Mumford Hall (MC-710)

1301 W. Gregory Dr.

Urbana, IL 61801

Coriandrum: 2017 Herb of the Year

BY KELLY ALLSUP

Coriandrum—the plant that produces both cilantro and coriander—has been named 2017 Herb of the Year by the International Herb Association. Its dual purpose makes it a unique plant, with the leaves harvested and eaten fresh and the fruits dried and used, whole or ground, as the spice known as coriander.

To be chosen as Herb of the Year, a plant must be deemed outstanding in two out of three categories—medicinal, culinary, and decorative. The International Herb Association has chosen an Herb of the Year, including such favorites as basil, rosemary, lavender, and fennel, for 22 years. Last year's selection was peppers.

Many people associate cilantro with salsa. (Did you know salsa has overtaken ketchup as America's number one condiment?) However, some people are genetically disposed to find cilantro unappetizing—to them it tastes like soap. A study from the University of Chicago confirms that DNA does shape our judgment of cilantro, but probably not so much that we cannot get over it for the sake of a good taco. Most of us would describe the taste as fresh and citrusy (like a lemon or lime).

Coriandrum is a cool-weather, tender perennial that can be planted after the first frost-free date. It produces leaves in a rosette about 6 to 12 inches long. When the temperatures rise, the plant will bolt, producing flowering stalks 2 to 3 feet tall. Whether you want to produce more cilantro leaves or use the seeds as spice determines your next step.

Coriandrum seeds may need to be soaked for 3 or 4 days before planting to break open the seed coat. They should be planted in rich, well-drained soil, with exposure in full sun to partial shade, about 1 inch deep and 6 inches apart. Plants may endure a light frost, but heavy frost will kill them. It is best not to over-fertilize herbs, as the addition may dull the taste. Be sure to weed, as coriandrum does not compete very well; for an ongoing supply of leaves, keep sowing new plants until the middle of spring and again in the fall when the day length shortens. Chuck Voigt, a research specialist in agriculture recently retired from the University of Illinois, suggests 'Leaf,' 'Long-Standing,' 'Slo-Bolt,' 'Calypso,' and 'Santos' for their delay in bolting and staying vegetative longer—perhaps an extra two weeks.



Harvest coriander fruits when they turn from green to tan. Left on the plant, they will soon fall to the ground and produce volunteers (whether you want them or not) the following year. Store the dried seeds in a sealed container in a cool, dark spot; you can use them in many culinary dishes.

Whether you are a cilantrophobe or a lover of all things spicy, won't you try growing this herb in the early spring garden?

CONTRIBUTORS

SERIES EDITOR: Kari Houle • **COPY EDITOR:** Molly Bentsen • **DESIGNER:** Justin Parker • **COORDINATOR:** Stephen Wald

