May 2024-Vol.10,No.5

Table of Contents

How Flowering Plants Attract Pollinators

By mking | May 2024-Vol.10,No.5

With spring's arrival, many of us marvel at the incredible diversity of beautiful blossoms that appear in the landscape around us. This stunning display becomes even more fascinating when we discover the intricate connections between flowering plants, or angiosperms, and the pollinators who visit them. Their mutually beneficial relationship is one example of Mother Nature's extraordinary partnerships.

What is pollination?

All flowering plants rely on pollination, the transfer of pollen grains from the anther at the top of a stamen (male flower part) to the stigma at the top of a pistil (female flower part). This process of pollination leads to the development of seeds and fruit for plant reproduction, which helps ensure the survival of a species.

Some plants rely on self-pollination, defined as the abiotic transfer of pollen on the same plant without the involvement of any living organism. This inorganic process that does not include animals decreases genetic diversity, an important aspect of the adaptability of a species. However, the vast majority of angiosperms rely on cross-pollination, which includes a vector such as an animal, wind, or water to move pollen from one flower to another flower of the same plant species. The biotic, or biological, process that involves animals transferring pollen from one flower to another is an ecological survival strategy that increases genetic diversity.

Female pistil with stigma at top, surrounded by male stamens and anthers. Photo by Melissa King

It turns out that animals are responsible for approximately 80% of all plant pollination and 75% of the pollination of basic food crops for humans. Furthermore, one of every three bites of our food depends on the work of animal pollinators. These important helpers include bees, butterflies, moths, beetles, flies, birds, and bats, with insect pollinators, especially bees, responsible for most of the cross-pollination of flowering plants.

Butterfly holding onto flower as it probes for a sweet drink. Photo from Pixabay

"Our future flies on the wings of pollinators." (quote from North American Pollinator Protection Campaign, US Forest Service)

Co-Evolution of Plants and Pollinators

The successful interaction of flowering plants and pollinators is due to ingenious morphological adaptations that have occurred over a long period of time. These plants and their pollinators depend on each other and have co-evolved in unique ways to enhance their mutualistic relationship.

Here is how it works: Flowers exhibit certain traits, such as visual cues, to attract certain types of pollinators. When pollinators visit these flowers, they get the energy-rich nectar and protein-rich pollen that they need to stay alive. In

addition, angiosperms that depend on animal vectors produce pollen that is barbed and rather sticky, to facilitate hitching a ride from flower to flower. Moreover, to reduce competition for visits from valuable pollinators, angiosperms flower at different times of the year, thus producing continuous food resources for pollinators.

Pollinator Syndromes

In conjunction with these clever interactions, specific flower characteristics are associated with various types of pollinators. These floral strategies, such as shape, scent, and color, are referred to as "pollinator syndromes." Based on the typical traits of certain flowers, scientists can predict which pollinators will be attracted to them.

Bee collecting pollen on purple flower. Photo: pexels.com

Visual cues are one way that angiosperms send signals to invite pollinators into their flowers. Certain colors make flower petals

Butterfly using proboscis to sip nectar from orange flower. Photo from Pixabay

and sepals more noticeable, but which critters will be attracted to a particular color varies. Bees, whose color vision is acute and highly sensitive, respond to bright white, blue

,
pur
ple,
and
ultr
avio
let
light
, but
beet
les
pref
er
whit
e or
gree
n.
Butt
erfli
es,
whi
ch
can
dete
ct
milli
ons
of
colo
rs
with
thei
r
com
pou
nd
eyes
and
mult
iple
phot
orec
epto
rs,
resp
ond
to
brig
ht
red,

oran
ge,
pink
,
and
pur
ple.
Con
vers
ely,
mot
hs
like
dull
red,
pink
,
pur
ple,
and
whit
e.
Bird
s
are
attr
acte
d to
red,
oran
ge,
scar
let,
and
whit
e,
whil
e
hum
min
gbir
ds
espe
ciall
y
like
red
and
pink
flow

ers. Bats, who are active at night, prefer white, light-colored flowers that bloom in the dark.

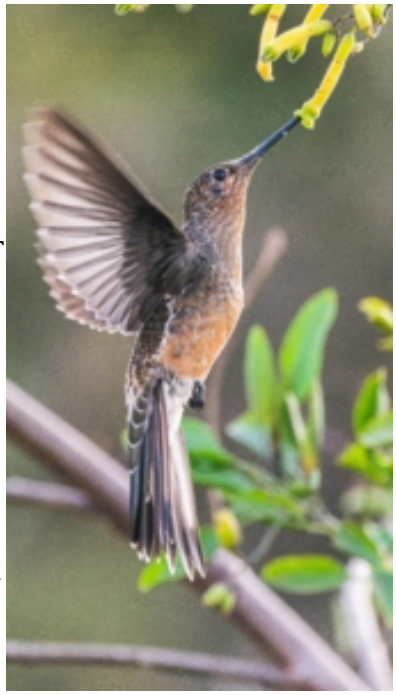
Nectar guide that directs insects toward the center of the flower. Photo from Pixabay

Many flowers exhibit distinct visual patterns with colorful lines or dots on their petals that direct animal pollinators to come right inside their flowers. Like an effective advertisement, these **nectar guides** help pollinators locate desirable nectar and pollen, making the pollination process much more efficient. Some flowers that attract bees, who see a different spectrum of light than we do, display an area of ultraviolet light in the middle of every petal, coupled with an area of low ultraviolet reflectance near the base of each petal. Although not visible to the human eye, bees can detect this combination of light patterns that creates a bullseye guiding them to the flower's center. Once there, they feast on sweet nectar and collect dusty pollen.

Flower shape and size are additional attributes that demonstrate how specialized plant morphology can attract and accommodate the physical structure of specific animal pollinators. For example, beetles need large, somewhat flat, open flowers to crawl around on as they seek food, whereas butterflies require narrow, tubular shapes that allow them to sip sweet nectar with their long proboscis. Bees and flies, with their small mouthpieces, like shallow flowers that offer landing pads, while birds look for larger flowers that are shaped like cups.

Scent is another trait associated with specific plant-pollinator partnerships. Bees and butterflies like pleasant, fresh scents, while bats prefer strong, musty odors. Moths are attracted to strong, sweet smells that emerge after dark, and flies like rotten, foul-smelling odors.

Mimicry is an unusual strategy that also helps lure pollinators to flowers. Several orchid species have flowers that closely resemble female insects, and as a result, male insects of the same type are attracted to these flowers. While there they try to mate, gathering pollen during the process and carrying it to another flower.



Hummingbird sipping flower nectar with its slender beak. Photo by Raul Salvo on pexels.com

Pollen on bee's fuzzy body as it enjoys sweet nectar from a flower. Photo from Pixabay

How can you help?

Pollinators are an essential element of earth's ecosystems. Without them, most food crops and many other plant-based products would not be possible. It is estimated that the value of pollination on a global scale is worth more than $3 trillion. As conscientious gardeners who care about the natural world, we can take a leading role in supporting pollinators, to help them survive and thrive for years to come. Consider the following action steps:

*Plant a diverse collection of native flowering plants in your own yard to provide habitats and food resources for native pollinators.

*Include wildflowers that bloom at different times of the year in your plant collection to provide a steady supply of food for pollinators.

*Reduce or avoid the use of hybrid flowers that may have altered colors and color patterns, shapes, or scents, which might fail to offer features that attract pollinators.

*Research host plants for specific types of native butterflies and make space for them in your gardens.

*Keep a few dead trees or fallen branches on your property as nesting sites for bees.

Bee sipping nectar on cup-shaped flower. Photo from Pixabay

*If possible, steer clear of pesticides and don't use them in daytime when pollinators are active.

*Share with others your knowledge about pollinators and their partnership with flowering plants.

Now that you understand more about the mutually beneficial relationship between angiosperms and pollinators, **"Make your home their home."**

Butterfly on relatively flat zinnia flower. Photo from Pixabay

Resources

Parts of a Flower: An Illustrated Guide | AMNH

Microsoft Word – Parts of a Flower.docx (uga.edu)

NAPPC | Pollinator.org

Visual Cues (usda.gov)

Pollinator Syndromes (usda.gov)

Who Are the Pollinators? | US Forest Service (usda.gov)

simpletruthbrochure.pdf (usda.gov)

The Birds and the Bees | US Forest Service (usda.gov)

factsheet_pollinator.pdf (usda.gov)

The secret ultraviolet colors of sunflowers attract pollinators and preserve water (phys.org)

Ultraviolet reflectance in the pollination system (nih.gov)

A Bee's Eye View: UV photography and bee vision | Garden Ecology Lab (oregonstate.edu)

Pollinator responses to ultraviolet floral patterns

Gardening for Pollinators | US Forest Service (usda.gov)

Pollinators | US Forest Service (usda.gov)

Homepage | Pollinator.org

CentralAppalachianrx7FINAL.pdf (pollinator.org)

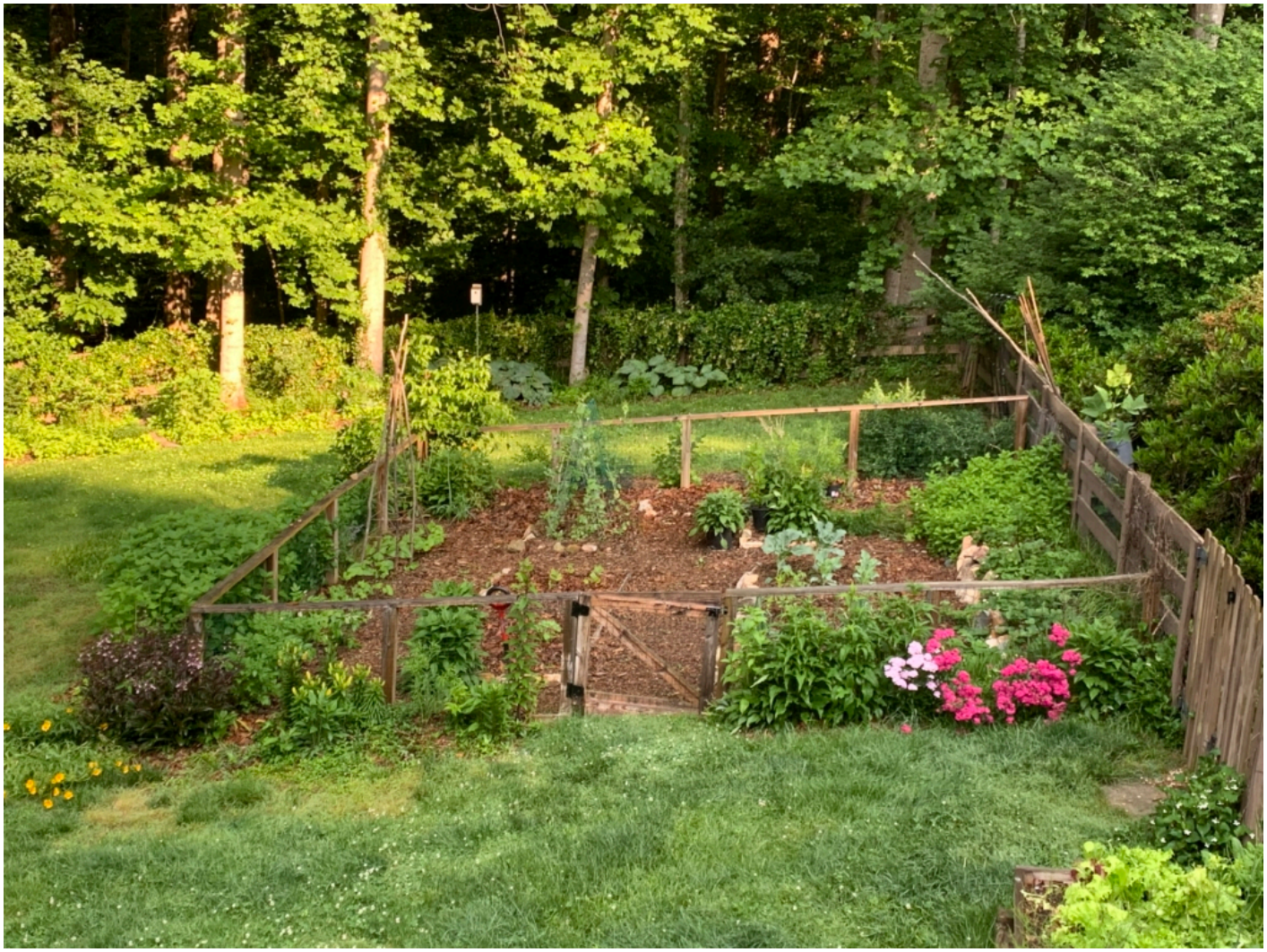
What Are the Best Flower Colors to Attract Pollinators? (illinois.edu)

Best Plants for Pollinators (psu.edu)

Pollination and Pollinators (psu.edu)

The Edible Garden in May

By Ralph Morini | May 2024-Vol.10,No.5



In the Virginia Piedmont we have had an early winter-spring transition this year. Gardeners who capitalized and planted spring crops early are likely enjoying fresh produce already. Those who waited for May to arrive can begin planting summer vegetables. While climate change has moved our ***average*** last frost date in Hardiness Zone 7b, to April 5-15th (from April 15-25th), there is still the possibility of a late frost. Best to keep an eye on the forecast and be prepared to cover any tender plants if a late frost arrives. Even with the risks, most of us will be plowing ahead, so to speak.

Soil thermometer. Photo: Colorado State Extension

Some Specifics

Soil temperature plays a major role in seed germination and transplant health. Cool-weather crops like spinach, lettuce, greens, peas, onions, and root crops need soil temperatures in the 35-40° range. Actually, 80° is the optimum temperature for germination but these crops don't grow well in the heat after germination, so we compromise. Starting seeds indoors and transplanting, (except root vegetables, which don't transplant well), or purchasing transplants are the most efficient practices.

Warm-weather crops including tomatoes, corn, and beans need at least 55° soil. Peppers, cucumbers, melons, and sweet potatoes want at least 60° and eggplants need 70° or higher. Planting too early risks seed rotting prior to germination.

You can test soil temperature with a soil thermometer, available at most garden shops. Poke the thermometer about 2 ½ inches into the soil. Since soil temperature will vary throughout the day and night, a good average is found between 10 and 11 am. It's good to track the incoming weather reports to be sure you are ready to deal with a cold snap if necessary.

With the change of the VA Piedmont Hardiness Zone from 7a to the warmer 7b, we recommend stopping planting of cool weather crops including beets, cabbage family crops, various greens and lettuces, carrots, peas and turnips by late April. May is recommended planting time for warmer weather vegetables including bush and pole beans, cucumbers, eggplant, melons, okra, peppers, tomatoes, white and sweet potatoes, pumpkins, squash and sweet corn.

For a detailed **list of recommended vegetable planting times** in Hardiness Zones 6a through 8a check out the Virginia Home Garden Vegetable Planting Guide. Remember that most areas of Virginia have been upgraded to the next warmer Hardiness Zone, although the map doesn't show it yet.

New asparagus patch. Photo: R Morini

If you have a mature asparagus patch, you are likely harvesting fresh spears now. If you are installing a new bed, it is too late to plant now in our Hardiness Zone. It is best to start planning for next year. Prep the bed this fall and plant next spring between late March and late April. To be sure you get it right, check out the good advice in Growing Asparagus in Home Gardens from the University of Minnesota Extension. Keep in mind that the Virginia Piedmont planting recommendation is during March, a few weeks ahead of Minnesota, but the rest of the advice is right-on.

Other tips for May vegetable gardening in our area:

Tomato transplants. Photo: R Morini

Tomato transplants are ready to be placed in the garden when they have 5-7 leaves. When transplanting tomatoes, place two-thirds of the plant below the soil surface. Pull leaves off the bottom two-thirds of the plants and either dig the planting hole deep enough to stand the plant up or lay the bottom half on its side in the hole, and gently bend the stem to set the upper half vertically above the soil surface. Tomatoes will add roots underground and build a stronger root system.

When **choosing your tomato varieties,** consider determinate types that ripen within a narrow time period if you are a canner and want a single harvest. Indeterminate varieties will provide a steady supply of ripening fruits until frost, if well cared for.

Eggplants like 80° to 90° temperatures and plenty of water. It's best to water them thoroughly twice a week during dry periods.

Speaking of moisture, **beans, peas, and other legumes** that fix soil nitrogen produce fewer, smaller root nodules when water-stressed. It is important to keep them well-watered.

Extend your harvest season by planting sweet corn and beans every two weeks through mid-late July. An alternative with corn is to plant early-, mid-, and late-maturing varieties at the same time.

Missing corn kernels on your corn ears? This may be the result of **poor pollination**. Sweet corn is wind pollinated. Pollen from the corn flower must reach every strand of silk on each growing ear to develop fully-kernelled mature corn ears. **Block planting in short rows** (3-4 rows or more) will pollinate more successfully than 1 or 2 long rows. Find more information in VA Cooperative Extension publication Sweet Corn.

Keep potatoes covered. The skins of potatoes exposed to sunlight will turn green. This green color comes from the pigment chlorophyll, which is produced as a response to sunlight. "Green Potatoes" will often develop a bitter taste and may even become toxic. This can be prevented by covering the exposed potatoes with soil, straw or leaf mulch. It is possible to plant potatoes until mid-May. Find planting and care information at Growing Potatoes in a Home Garden from the University of Maryland Extension.

To control weeds growing alongside crops, **destroy them before they develop seeds**. Removing them with weeding tools is a good practice but don't cultivate deeply; this can cause damage to shallow vegetable roots. Mulch and compost can also reduce weed growth, but be sure to avoid amendments carrying seeds.

Fertilization is an important element in maximizing garden output. There are problems with over- and under-fertilizing, different impacts from synthetic and natural fertilizers, and soil health issues to consider. If you would benefit from more insight into fertilizer use, check out *The Garden Shed* article "A Fertilization Primer"

When **watermelons, muskmelons, squash, and cucumbers** are planted in a hill, **place a stick** upright in the middle of the hill and leave it there. Later in the summer when the hill becomes hidden by the vines, you will know where to water. You'll save time looking for the main root and save water as well.

When transplanting seedlings in **peat pots**, gently tear off the top inch of the pot; the upper edges of the pot should be covered with soil to avoid wicking water away from the soil surface, reducing the moisture reaching the plant roots.

Cabbage worms on kale. Photo: R Morini

If you are growing Cole crops, including cabbage, broccoli, cauliflower, kale, collards, or other greens, May means the arrival of cabbage worms that can decimate your crop. Options for control include hand-picking, row covers, or using an organic pesticide like Bt (*Bacillus thuringiensis*). I have also had luck hanging decoys of cabbage moths within the crop. The decoys appear to discourage territorial moths from laying their eggs in that location. Please note that decoys are not supported by any Extension research that I can find, but they have support from numerous other gardening organizations.

Baby bluebird awaiting caterpillar delivery. Photo: R Morini

My favorite anti-cabbage moth preventive is adding pollinator plants and bluebird houses. Finding a healthy natural balance really works. Baby bluebirds consume several hundred cabbage worms and other caterpillars during their two-weeks as nestlings. It makes sense to support them while minimizing pest impact sustainably.

For related information, check out *Garden Shed* articles "OMG What's Eating the Broccoli", "Row Covers: a Gardening Season Extender with Benefits" and Plant a Pollinator Paradise.

To preserve leftover seeds, store them in a sealed container and refrigerate them. Place a desiccant, such as a few layers of paper towels with 2 tablespoons of powdered milk inside the container to absorb moisture.

Triple compost bin at Bread and Roses Ministry. Photo: R Morini

This is a great time to **start a fresh batch of compost**. The warm temperatures will speed up decomposition if you keep the pile moist and aerated. Grass clippings and kitchen scraps become plentiful as we begin mowing lawns and eating seasonal fruits and vegetables. If you've saved some leaves from last fall or chemical free papers and cardboard from home use, you have what you need to create a good compost batch that can be ready for use this fall. VCE publication Making Compost from Yard Waste offers helpful guidance for several composting approaches.

If you are a fruit grower and want to add native plantings to the orchard, consider pawpaws. There is good advice for growing and eating pawpaws in the Garden Shed articles "Pawpaws: Resilient and Delectable Natives" and "Yummy Recipes With Pawpaws". Go native!

Garden season is in full swing now. Let's get out there and enjoy it!

Resources:

"Vegetable Planting Guide and Recommended Planting Dates." Va. Coop. Ext. Publication No. 426-331, http://pubs.ext.vt.edu/426/426-331/426-331.html; https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-331/SPES-170.pdf

"Sweet Corn," Va. Coop. Ext. Publication No. 426-405, SPES-251.pdf (vt.edu)

VA Cooperative Extension: May Tips: Vegetables https://albemarle.ext.vt.edu/content/dam/albemarle_ext_vt_edu/files/hort-tip-sheets/5-14-veg.pdf

"Soil Temperatures by Vegetable," K-State Extension: https://enewsletters.k-state.edu/postrockdistrictfcs/2021/02/23/soil-temperatures-and-vegetables/

Perennial Garden Grooming and Maintenance Techniques

By Patsy Chadwick | May 2024-Vol.10,No.5

Let's face it – there's always something to do in the perennial garden. Besides the usual soil preparation, planting, weeding, watering, fertilizing, etc., there's lots of grooming to be done. By grooming, I mean keeping perennials looking lush, healthy, and colorful starting in spring and ending with the first killing frost in fall. Here are nine easy-to-master grooming methods for keeping your perennials looking their best.

DEADHEADING SPENT BLOSSOMS

Deadheading is the practice of removing old or spent blossoms **just after they fade.** This grooming technique:

- **Improves the overall appearance** of the plant.
- **Extends the period of bloom** by diverting the plant's energy into pushing out new flowers instead of setting seed.
- **Encourages a second flush of blooms** later in the season on some but not all perennial species. Sea thrift (*Armeria*), peony (*Paeonia*), and leopard plant (*Ligularia dentata*) are examples of perennials that are genetically programmed to bloom only once per season. Deadheading will not encourage them to re-bloom.

- **Prevents self-seeding** of plants that you may not want to spread, such as clustered bellflower (*Campanula glomerata*) or rose campion (*Lychnis coronaria*).
- **Keeps the foliage looking attractive much longer.** By preventing seed production, the plant diverts its energy to the foliage, keeping it attractive for a longer period of time.

While these are some of the benefits of deadheading your perennials, there's no rule that says you must deadhead them. In fact, some gardeners prefer to leave their gardens in a "wild" or more natural state, which reduces the amount of maintenance required. Other reasons for not deadheading include:

- **Self-seeding**. Letting some species such as columbine (*Aquilegia*), woodland phlox (*Phlox divaricata*), or orange coneflower (*Rudbeckia fulgida*) self-seed naturally is a great way to acquire lots of new plants for free. Keep in mind that plants grown from the seeds of hybrids will not resemble the parent plant.
- **Habitat for wildlife**. Leaving plant stalks and seedheads in place over the winter provides food and habitat for birds, overwintering insects, and other wildlife creatures.
- **Winter garden interest**. The seedheads of some perennials such as Joe Pye Weed (*Eutrochium*), tall sedum (*Hylotelephium*), coneflower (*Echinacea*), false indigo (*Baptisia australis*), and grasses provide plenty of visual interest in the winter garden.

Deadheading is easy to do but, for best results, **remove both the spent blossom and the stem just below the blossom**. To do this, follow the spent flower stem down to approximately 1/4 inch above a new lateral flower, flower bud, or leaf pair. Snip the flower stem off at that point using clean, sharpened hand pruners or scissors.

Asclepias tuberosa being pruned back to the next new flower. Photo Credit: Pat Chadwick

Examples of perennials that respond well to deadheading include:

- Black eyed Susan (*Rudbeckia*)
- Blanket flower (*Gaillardia*)
- Butterfly weed (*Asclepias tuberosa*)
- Culver's root (*Veronicastrum virginicum*)
- Garden phlox (*Phlox paniculata*)
- Large flower tickseed (*Coreopsis grandiflora*)
- Perennial sunflower (*Heliopsis helianthoides*)
- Purple coneflower (*Echinacea purpurea*)
- Shasta daisy (*Leucanthemum*)
- Stokes's aster (*Stokesia*)

CUTTING BACK FLOWER STALKS

This technique is a more drastic form of deadheading and is generally used on plants with flower stalks that have finished blooming or look withered, yellowed or brown, or otherwise look unappealing in the landscape. After all the blooms have faded on the flower stalk, **cut the entire stalk all the way down to the basal foliage** (growth just above the soil level) using hand pruners. This practice:

- Stimulates new growth and possibly a new round of flowers, depending on the species.
- Helps control disease or insect damage.
- Improves the overall appearance of the plant.
- Extends the life of some plant species.

In addition to the perennials listed under the heading of deadheading above, the following will also respond well to having the flower stalks cut back to basal growth:

- Beardtongue (*Penstemon*)
- Daylily (*Hemerocallis*)
- Gayfeather (*Liatris*)
- Goldenrod (*Solidago*)
- Hosta species
- Lance-leaf tickseed (*Coreopsis Lanceolata*)
- Lungwort (*Pulmonaria*)
- Salvia
- Speedwell *(Veronica species)*
- Yarrow *(Achillea millefolium)*

Spent Liatris flower stalks may be pruned back to the ground to tidy the plant. Photo Credit: Pat Chadwick

CUTTING ENTIRE PLANT BACK

This grooming method can be done on some declining perennials to encourage vigorous new growth and possibly even extend the life of the plant. Spring blooming perennials such as columbines (*Aquilegia*) and lungwort (*Pulmonaria*) or summer-blooming perennials such as spiderwort (*Tradescantia*), daylilies (*Hemerocallis*), and tickseed (*Coreopsis lanceolata*, which can bloom itself to exhaustion) can be revitalized by either cutting the foliage back to basal growth or cutting it all the way to the ground. Since this is a somewhat drastic grooming technique, it's wise to research the plant first before cutting it back. Also, it's best to avoid this technique if the plant is enduring an extended drought or other stressful growing condition.

Salvia Caradonna being pruned back hard to stimulate fresh foliage. Photo Credit: Pat Chadwick

SHEARING

Another form of deadheading, shearing removes some of the top growth of a plant in addition to the spent blossoms. This technique is ideal for perennials with lots of tiny flowers that bloom all at once. For these perennials, it's more efficient – and less frustrating – to shear the entire plant rather than deadhead each individual spent flower. You may remove some unopened buds using this technique, but that's a small price to pay for a fresh new round of blossoms a couple of weeks later. Use garden shears rather than hand pruners to remove about a third to one half of the top growth and spent flowers. For best results, follow the natural shape of the plant as you shear.

Achillea millifolia can be sheared back to promote re-bloom. Photo Credit: Pat Chadwick

Perennials that benefit from being sheared include:

- Candytuft (*Iberis sempervirens*)
- Catmint (*Nepeta*)
- Tickseed (*Coreopsis verticillata*)
- Hardy Geranium species

- Lavender (*Lavendula* species) – Shear back to just above the woody stems.
- Pinks (*Dianthus* species)
- Russian Sage (*Perovskia*)

PINCHING

If you're confused about deadheading versus pinching plants, here's the difference between the two techniques: Deadheading removes blossoms that are faded or spent whereas pinching removes the growing tip (terminal bud) of a stem or branch and the first set of leaves. This latter technique stimulates more lateral growth, which increases the number of flowers. In addition to creating a bushier, more compact plant, pinching delays the bloom time by 2 to 3 weeks. For example, some chrysanthemums (*Dendranthema*) start showing color in August. But if you want them to bloom later, pinch the stem tips back once or twice in late spring or early summer but no later than early July. Otherwise, the plant may not be able to push out new buds in time to bloom before the first killing frost kills them. If the stem tissue is soft enough, use your fingers to pinch off the tip growth or snip it using clean, sharp hand pruners.

Shasta Daisy is an example of perennials that can be pinched back. Photo Credit: Pat Chadwick

Perennials that benefit from pinching include:

- Beebalm (*Monarda*)
- Chrysanthemum (*Dendranthema*)
- Garden Phlox (*Phlox paniculata*)
- Goldenrod (*Solidago*)
- Joe Pye Weed (*Eutrochium maculatum*)
- Purple coneflower (*Echinacea purpurea*)
- Shasta Daisy (*Leucanthemum*)
- Sneezeweed (*Helenium autumnale*)
- Turtlehead (*Chelone glabra*)
- Yarrow (*Achillea*)

DEAD-LEAFING

Dead-leafing is a term author Tracy DiSabato-Aust uses in her book *The Well-Tended Perennial Garden*. It simply refers to pinching or snipping off leaves that are dead or damaged due to sun scorch, lack of water, disease, insect and animal chewing, or weather. It also refers to cleaning up dead foliage from spring-flowering bulbs such as daffodils or tulips.

DISBUDDING

Disbudding is not so much a grooming technique as it is the practice of limiting the number of buds on a plant. It allows the plant's energy to go into inducing the terminal bud to grow larger. When side buds are about the size of a pea, pinch them off plus any side branches, leaving only the terminal bud in place. This results in one larger than normal flower on a long stem. In some cases, the larger flower may also be heavier, requiring staking to keep it from falling over.

Although disbudding is commonly used by gardeners who compete in judged flower shows, the technique can be used by anyone regardless of gardening skill level. For the home gardener who wants to experiment with disbudding, some candidate perennials include dahlias, peonies (*Peonia*), carnations (*Dianthus*), and chrysanthemums (*Dendranthema*).

THINNING TO REDUCE CROWDING

This is the practice of removing selected stems from plants that may have grown too large or too crowded. Thinning helps to increase air circulation, increase light levels, prevent plant diseases such as powdery mildew, encourage better branching on interior stems, and produce a sturdier plant. The goal is to **prune out a third of the stems (preferably the weaker or thinner stems) at ground level** in the spring when the plant is about a quarter to a third of its mature size. Thinning may result in fewer flowers, but the plant will be able to direct its energy to the remaining flower stalks, resulting in larger flowers on some perennial species. Thinning some perennials such as garden phlox (*phlox paniculata*), bee balm (*Monarda*), and aster species helps reduce the risk of fungal diseases such as mildew or rot.

Crowded Phlox paniculata should be thinned. Photo Credit: Pat Chadwick

PRUNING USING THE "CHELSEA CHOP" METHOD

Loosely defined, the "Chelsea Chop" is a pruning method used to selectively cut back or pinch back certain perennial species that bloom in mid- to late summer or fall. The timing of this method generally coincides with the Royal Horticultural Society's Chelsea flower show in the latter part of May, hence the name. This is approximately the time of year when the plants have achieved most of their vegetative growth and can endure the method without significant damage to the plant's health.

The Chelsea chop is done for a variety of reasons, including the following:

Delay Bloom Time: Use hand pruners or shears to cut back a plant by one-third to one-half. This method

delays blossoms until later in the season and keeps the plant shorter and more compact. The plant may look bad for a few days, but it will quickly leaf back out again and will be none the worse for wear.

Extend Bloom Time: Randomly select about half of the stems throughout the plant and only cut those back by one third to one half. The uncut stems will flower first, followed by the pruned stems, thus prolonging the overall bloom time.

Stagger Floral Display: Cut the stems at the front edge of the plant by one third to one half but leave the back half alone. This will create a tiered effect with the back half of the plant blooming first followed later by the blossoms on the front half.

Chelsea chop pruning staggered blooms on 'Sheffield Pink' chrysanthemum. Photo Credit: Pat Chadwick

Perennial species that benefit from being cut back one third to one half of their vegetative growth in late spring or early summer are ones that typically bloom later in the season – midsummer through fall. A few examples include the following:

- Aster (*Symphyotrichum*)
- Bee balm (*Monarda*)
- Chrysanthemum (*Dendranthema*)
- Garden Phlox (*Phlox paniculata*)
- Goldenrod (*Solidago*)
- Cardinal Flower (*Lobelia cardinalis*)
- Perennial sunflowers (*Helianthus*)
- Purple coneflower (*Echinacea*)
- Sneezeweed (*Helenium*)
- Tall Sedum (*Hylotelephium*)

This method should not be used on species such as peonies or irises, which bloom in late spring and are done for the rest of the season. Deadheading (removal of spent blossoms) is all that is needed to tidy up the plants. This method also should not be used on woody sub-shrubs, such as lavender.

SUMMARY

Pruning perennial species using the methods described above can take an ornamental garden from ordinary to extraordinary. It takes a practiced eye to know which pruning technique to use on a plant and when — but, in general, the plant can guide you as you observe its habit and texture. If in doubt, experiment first on one or two stems before committing to any of these techniques. Observe the results before deciding which approach will work best.

For more information on general care and maintenance of the ornamental garden, be sure to check out the tasks and tips *In the Ornamental Garden* which appears monthly in *The Garden Shed* newsletter.

FEATURE PHOTO CREDIT: Pat Chadwick

SOURCES

The Perennial Care Manual: A Plant-by-Plant Guide: What to do & when to do it (Ondra, Nancy J., 2009)

The Well-Tended Perennial Garden – An essential guide to planting and pruning techniques, Third Edition, (DiSabato-Aust, Tracy, 2017)

The Know Maintenance Perennial Garden (Diblik, Roy, 2014)

Care for Perennial Gardens with 3 proven pruning methods, University of Illinois Urbana-Champaign Extension

Pruning Herbaceous Plants, Pennsylvania State University Extension

The Ornamental Garden in May

By Cathy Caldwell | May 2024-Vol.10,No.5

It's May and frosty nights are now a distant memory! The garden centers are abuzz with plenty of exciting new plant choices to try. Besides planting and transplanting, there's plenty of weeding, dividing, and general sprucing up to be done in the ornamental garden.

With so many plant choices available to you at this time of year, **look for drought-tolerant selections** that will require less water once hot, humid mid-summer weather arrives. Some potential candidates include black-eyed Susan (*Rudbeckia*), blanket flower (*Gaillardia*), butterfly weed (*Asclepias tuberosa*), catmint (*Nepeta)*, goldenrod (*Solidago*), hyssop (*Agastache*), mountain mint (*Pycnanthemum muticum*), purple coneflower (*Echinacea purpurea*), sneezeweed (Helenium), Stokes' aster (*Stokesia laevis*), and yarrow (*Achillea millefolium*). Important: Although these plants are drought tolerant, they require ample moisture their first year while they are getting established.

Clustered or short-toothed mountain mint (Pycnanthemum muticum). Photo courtesy of Missouri Botanical Garden Plantfinder.

With our last average frost date behind us, it's now time to **direct sow seeds of heat-loving annuals** such as cosmos, marigolds, cleome, gomphrena, or zinnias. After the plants reach 4 to 6 inches in height, pinch them back to promote bushier growth. This will ultimately produce more flowers.

Transplant bedding plants on a cool, calm, cloudy day. The cooler temperatures and cloud cover will cause less stress to the plants and will help them settle in sooner. Some common fast-growing annuals that are sold as bedding plants include celosia, dusty miller, geraniums, lantana, lobelia, petunias, portulaca, salvia, and begonias.

Plant tender bulbs such as dahlias, gladioli, or cannas in full sun. If you don't have full sun (at least 6 hours per day), try planting shade-loving caladiums and tuberous begonias. For a touch of drama, try growing elephant ears in part-shade but give them plenty of room. Depending on the variety, they can grow seriously

huge!

Install supports for fast-growing plants that tend to flop. Secure tall plants such as delphiniums or foxgloves to a single stake using jute or other soft twine. For mounding plants such as peonies, use "grow-through" ring or grid-style supports.

Protect newly-planted seedlings and transplants from drying wind and hot sun for the first few weeks while they establish strong root structures. Keep the soil around the fragile roots moist but not soggy. If the root ball dries out, the plant may not recover from the stress. Too much water is just as bad for seedlings and transplants because soggy soil may cause their roots to rot.

Monitor moisture requirements of newly-planted trees. In general, it takes 2 to 3 years or more for a tree to become established in the landscape. Adequate moisture is particularly critical during this period to encourage healthy root development beyond the original root ball. In the absence of good soaking rains, provide supplemental water, particularly as daytime temperatures grow hotter. Cover the entire area under the tree canopy to keep the soil evenly moist but not soggy around the root ball and surrounding soil.

Prune spring-flowering shrubs after they finish blooming. If you put off doing this until later, you run the risk of cutting off the buds for next year's blooms. Virginia Cooperative Extension (Va. Coop. Ext) Publication 426-701, Shrubs: Functions, Planting, and Maintenance, provides guidance on the best time of year to prune shrubs.

Lightly fertilize azaleas and rhododendrons after they finish blooming if a soil test indicates that nutrients in the soil are low. Use a fertilizer that is specially formulated for acid-loving plants and follow the directions carefully. Lightly scatter the fertilizer at the edge of the root zone. Azaleas have delicate roots that are close to the soil surface and can be easily burned by excess fertilizer. Too much fertilizer may also cause scorched leaf margins.

Finish acclimating your houseplants to the outdoors by gradually increasing their exposure to sunlight. Monitor them carefully so that they don't become sunburned. Make sure each pot has a drainage hole. Lack of good drainage is an invitation for root rot.

Experiment with container gardening if you've never tried it before. For best results, keep in mind the "thriller, filler, spiller" concept: plant something tall as a focal point, something mid-size to fill in around the "thriller," and something low that cascades over the rim of the pot and softens the overall effect. Just remember to keep container gardens well watered over the growing season.

Incorporate pollinator-friendly plant species that attract bees, flies, butterflies and other pollinating insects to your ornamental garden. Flowers with single petals rather than double petals are generally a better choice. Echinacea (cone flower) and zinnias are examples of plants that have undergone significant breeding for fuller, showier flowers. While they offer more variety and pizzazz for the garden, the downside is that such breeding efforts affect the flower's ability to produce pollen. In order to produce double flowers, the stamens (male portion of the flower) are bred to transform into extra petals. Because of this alteration to the basic anatomy of the flower, the blossom may not produce as much pollen as a flower having single petals.

Butterfly weed (Asclepius tuberosa). Photo: Missouri Botanical Garden Plant Finder

Replace mulch with ground covers in your landscape. Mulch is useful in holding moisture in the soil, moderating soil temperatures, preventing erosion, and controlling weeds. However, in certain situations, such as under trees where grass struggles to grow in the shade, a living ground cover instead of mulch may be a more practical solution. Like mulch, ground covers shade the soil, hold it in place, and smother weeds. On top of the practical aspects of ground covers, they add an attractive layer of color and texture in the landscape. Consider planting native ground covers such as: wild ginger (*Asarum canadense*), green and gold (*Chrysogonum virginianum*), Allegheny spurge (*Pachysandra recumbens*), foamflower (*Tiarella cordifolia*), blue-eyed grass (*Sisyrinchium angustifolium*), and creeping phlox (*Phlox stolonifera*).

Monitor your prized plantings for pests of all kinds – creeping, crawling, flying, etc. Here are a few to be on the alert for in May:

- **Aphids** – These voracious insects have mouth parts that are designed to pierce and suck the sap from a plant. They damage plants by causing yellowing, stunted growth, mottled leaves, browning, and even plant death. Ladybugs and lacewing larvae are the natural predators of aphids and may control them for you. If not, then a sharp spray of water is usually sufficient to dislodge aphids from plants. See the University of Maryland extension website for additional information and photos of aphids on a variety of plants.
- **Slugs** – These nocturnal members of the mollusk family can do a lot of damage in just one night – especially to hostas. To eliminate these slimy creatures, take a flashlight outside after dark, hand pick any slugs you find (wearing gardening gloves, of course), and drop them into a container of soapy water. If that approach doesn't appeal to you, sprinkle finely crushed eggshells around vulnerable plants. Slugs don't like crawling over the sharp edges. Another approach is to use a shallow dish filled with beer to entice slugs. Any brand of beer will do. Just nestle the dish into the soil leaving about half an inch of the rim exposed above ground. The slugs crawl into the dish and drown in the beer. End of problem. The University of Minnesota Extension's website offers advice on controlling slugs.
- **Ticks** – Ticks are arachnids rather than insects and are at their most active between May and July. During this time, wear light colors, closed-toe shoes, socks, long pants and long sleeves when working outdoors. Don't forget to tuck pant legs into socks. Check yourself, your children, and your pets after you or they have spent time outdoors. For a description of the primary types of ticks found in Virginia, see VCE publication 2906-1396 "Common Ticks of Virginia."

- **Eastern Tent Caterpillars** are the larval form of an ordinary looking yellowish-tan to brown moth (*Malacosoma americanum*). The hairy larvae hatch out in spring at which time they spin unsightly "tents" of silk webbing where they spend their nights. They emerge from the tents in the daytime to feed on the host plant, stripping it of its foliage. Insecticides are generally not effective when tent caterpillars are inside their tents. VCE publication 444-274, Eastern Tent Caterpillar offers more information on this insect. While tent caterpillars can be destructive to trees and shrubs, they are also an important food source for some bird species. Before deciding to kill the larvae, check out Entomologist Michael J. Raupp's Bug of the Week website which provides useful information on tent caterpillars. While not many bird species will eat hairy caterpillars, the yellow-billed cuckoo is one bird species that will, according to Cornell University's All About Birds.

Bad bugs get all the press but there are far more good bugs than bad, including:

- **Praying Mantis —** Praying mantids are generally considered to be beneficial; but, unfortunately, mantids make no distinction between bad bugs and beneficial ones and eagerly gobble up both. If you spot the large Chinese mantid, be aware that it consumes a large number of beneficial pollinators and other native species including small birds, reptiles and amphibians as well as the smaller native Carolina mantis. Learn more about mantids in this recent *Garden Shed* article: Praying Mantids: Friend or Foe?
- **Syrphid Fly (*Sphaerophoria philanthus*)** – Syrphid flies (also called hover flies or flower flies) serve double duty as both pollinators of a wide variety of plants and predators of other insects. These small black and yellow-striped insects measure less than ½ inch long and are often mistaken for bees or wasps. However, Syrphid flies don't have stingers and, like all fly species, they have only one pair of wings, whereas bees and wasps have two pair. In their adult form, syrphid flies feed only on pollen, nectar and aphid honeydew and do not prey on other insects. As larvae, they are highly effective natural enemies of aphids, scales, thrips, and other soft-bodied, slow-moving insect species. Just one larva can consume hundreds of aphids. For photos of both the adult and larval forms of this beneficial insect, see North Carolina State University Extension's publication on Syrphid Flies.

Syrphid fly. Photo: Whitney Cranshaw, Colorado State University, Bugwood.org

Take preemptive steps to keep deer out of the garden. As beautiful as deer are, they can do a devastating amount of damage to plants that are just emerging or leafing out. A tall fence or other physical barrier is the most effective way to keep deer out of your garden. If a fence is out of the question, then try growing plants with strong scents (such as herbs), tough or leathery foliage, and spiky or spiny foliage. Confuse deer by tucking vulnerable plants in among plants they normally shun. Use repellents that either smell or taste bad to deer. Repellents that have a sulphur-based odor of rotten eggs appear to be more effective than taste-based ones but alternate their use so that the deer don't become accustomed to them. To learn more about deer and strategies for living with them, see Garden Shed article Deer, Deer, Deer!,

which provides lots of great information on the subject.

Invasive Alert: Spring rains make the soil moist and easy to work in, which makes conditions ideal for homeowners to **hand pull small, young sprouts of invasive plants.** To control these species, it's important to remove all parts of the root so that the plant cannot regrow. Look for the following species: English ivy (*Hedera helix*), climbing euonymous (*Euonymous fortunei*), Japanese honeysuckle (*Lonicera japonica*), Oriental bittersweet (*Celastrus orbiculatus*), Japanese barberry (*Berberis thunbergia*), autumn olive (*Eleagnus umbellata*), wineberry (*Rubus phoenicolasius*), and garlic mustard (*Alliaria petiolata*). Visit the Blue Ridge PRISM (Partnership for Regional Invasive Species Management) website for factsheets on each of these species, including photos and control options.

SOURCES:

Featured Photo: Cathy Caldwell

Monthly Gardening Tips, Piedmont Master Gardeners/Gardening Resources/May

Upcoming Events

By Cathy Caldwell | May 2024-Vol.10,No.5

Piedmont Master Gardeners' Spring Plant Sale

The Piedmont Master Gardeners' annual Spring Plant Sale will be held from 10 a.m. to 2 p.m. Saturday, May 4, at Albemarle Square Shopping Center in Charlottesville. The sale will offer thousands of annuals, perennials, vegetables, fruit-bearing plants, herbs and houseplants, including a large assortment of native plants. In addition, shoppers can purchase garden implements, yard ornaments, and other "Green Elephants." The sale will happen rain or shine and will feature a Help Desk for answering gardening questions and educational displays on a variety of topics. All proceeds support the many free and low-cost programs the Piedmont Master Gardeners offer to the community. Cash and credit cards will all be accepted.

⇒Find out more

Ivy Creek Guided Tree Walk

—**Thursday, May 2** @ 4:00 to 5:30 p.m.
–Please register for the walk here

Tree Walk at Lewis & Clark Exploratory Center at Darden Towe Park

–See ancient Osage Orange trees, historic Monticello Tulip Tree, common riparian buffer, deciduous and conifer trees and the ash tree devastation due to the emerald ash borer.

–Friday, May 3 from 9:30 to 11:30 a.m.
Please register for the walk here

–Saturday, May 4 from 9:30 to 11:30 a.m.
Please register for the walk here

Garden Basics: Dividing Bulbs, Corms, Tubers, and Rhizomes

Saturday, May 18 *@ 2:00 pm – 4:00 pm* ***FREE***

Many beautiful plants come from bulbs, corms, tubers, and rhizomes. Some can be left in the ground over the winter, while others can be dug up, stored, and planted the following spring. You will discover:

- how to identify bulbs, corms, tubers, and rhizomes;
- how they reproduce;
- how to dig them up; and
- how to store them for the winter.

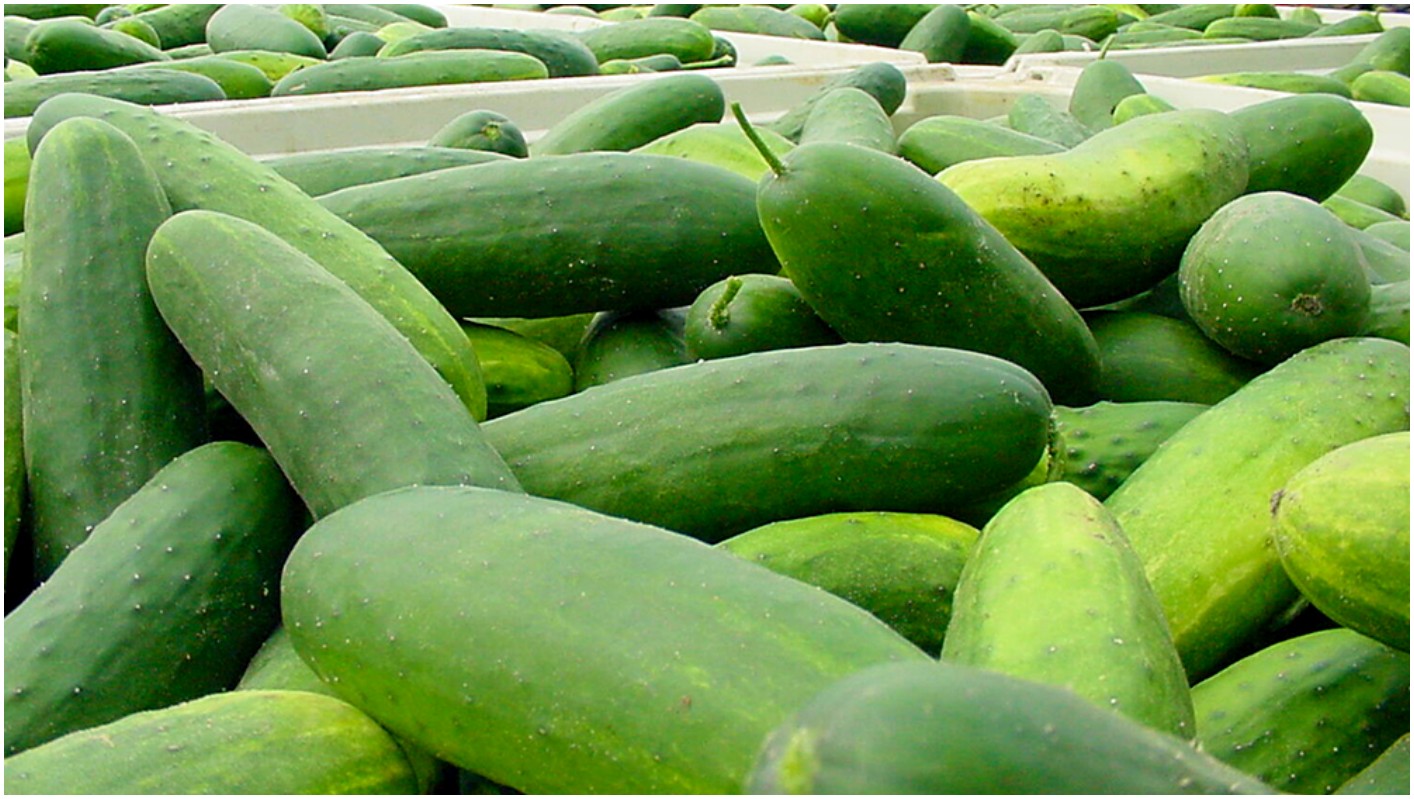
A hands-on activity will demonstrate the proper method for dividing. Garden Basics is a partnership with the Bread and Roses ministry at Trinity Episcopal Church.

Space is limited. Please register below to reserve your place in the class. Registration closes at 5 p.m. May 17, 2024, or when the class is full.

⇒Find out more and Register HERE

Cucumbers

By Chris Stroupe | May 2024-Vol.10,No.5



Cucumbers are, to me, a quintessential summer vegetable. (To paraphrase British humorist Miles Kington: Knowledge is knowing a cucumber is a fruit; wisdom is not putting it in a fruit salad.) The flesh of a cucumber is cool and crisp, with endless culinary uses: paired with yogurt in raita or a sauce for falafel, in Greek salads with feta, as an ingredient in gazpacho, and even as a garnish for gin and tonics. And pickling needn't be a hassle: refrigerator pickles are delicious and keep for weeks.

Varieties

Cucumbers are usually categorized as "slicing" or "pickling." Slicing cucumbers are longer, with thicker skins. Pickling cukes typically fruit earlier, with a short fruiting period (7-10 days), while slicing varieties can fruit for 4-6 weeks.

Cucumber plants form either bushes or vines. Bush varieties are more compact, fruit earlier, and bear less fruit than vining types. As discussed below, vining cucumbers grow well on trellises.

English – sometimes called European – cucumbers exhibit parthenocarpy, that is, they can set fruit without pollination. These varieties perform well in greenhouses, where pollination might be inefficient. Some growers prefer English varieties because the cucumbers are effectively seedless – but with an important caveat: if the flowers do happen to be pollinated, the resulting cucumbers will have seeds.

Asian cucumbers are usually longer, thinner skinned, and have a milder taste than North American varieties. The cucumbers will be straighter – and look spectacular – when grown on trellises. Whereas Western cucumbers belong to the species *Cucumis sativa*, some Asian cucumbers are from the *Cucumis melo* group, the same species as honeydew and cantaloupe. Cucumbers from this species often have slightly sweet flesh. Armenian cucumbers also belong to *Cucumis melo*, and are notable for their pale skin and deeply scalloped edges.

Armenian cucumbers. Photo: _e.t., Flickr. CC BY-SA 2.0

Bed Prep

Cucumbers grow best in soil with plenty of organic matter. When starting a new garden, incorporate 4-6 inches of compost into the top foot of soil with a rototiller or by double-digging. For existing beds, spread an inch or two of compost on the surface and loosen the soil with a broadfork or spading fork to bring the compost down into the soil. We recommend no-till methods in established garden beds to promote healthy soil structure.

Recommended soil pH is 5.5-7, slightly acidic to neutral. Cucumbers are heavy feeders, so soil nutrients should be fairly high. A soil test is a good idea to ensure that pH and nutrients are in the right ranges. Test kits can be picked up at the Virginia Cooperative Extension office in the Albemarle County Office Building, 460 Stagecoach Road in Charlottesville. Soil test results come with amendment recommendations; contact our horticultural help desks for help interpreting these recommendations. If the soil hasn't been tested recently, apply 3 lbs. of 5-10-10 per 100 square feet.

Cucumbers need plenty of sunshine, so plant them in a location with at least 8 hours of direct sun.

Starting

- **Outdoors** Cucumbers like it hot. Wait to sow directly until all danger of frost is gone and soil temperature is at least 65°F. Plant 3-4 seeds a few inches apart in a low mound, water thoroughly, and keep the soil moist – especially if your soil tends to crust over. Thin to 2-3 plants after germination. Cut the extra plants at their base, to avoid disturbing the roots of the remaining plants.
- **Indoors** Sow seeds indoors 3-4 weeks before transplanting. Harden seedlings off. Transplant only after the soil has warmed to 65°F. Transplant carefully so the roots aren't damaged.
- **Succession planting** To extend the harvest, sow some seeds a few weeks later, in late June or early July.

Cucumber seedling with its first true leaf. Photo: Peter Chastain, Wikimedia Commons. CC BY-SA 3.0

Vines starting to climb up a trellis. Photo: Doug Beckers, Flickr. CC BY-SA 2.0

Trellising

Vining varieties will thrive on a trellis. Some advantages include: reduced space requirements, straighter fruit, better air circulation, faster drying, and fewer diseases, and (creak) easier harvesting.

Trellises should be 5-6 feet tall. There are many options for materials. Twine works well, in particular because the vines' tendrils can grab the rough material. Cattle panels, i.e. heavy wire fencing, are another good choice. Netting is convenient but needs to be supported from above. I've often found the material to be slippery, so use plastic tomato clips to attach vines to netting if necessary.

Plant Care

Cucumbers have a shallow root system and need plenty of water. Keep the top 6 inches of soil moist. Irrigate regularly if there hasn't been much rain; in other words, don't let the soil dry out. Consistent soil moisture will prevent blossom end rot.

Side-dress with a nitrogen-only fertilizer (1 lb. of 34-0-0 per 100 square feet) after a few weeks, when vines begin to form. Don't over-fertilize with nitrogen or you'll have too many leaves and not enough flowers.

Pollination

Uneven or curled fruit (see picture) are usually the result of incomplete pollination. Cucumbers have separate male and female flowers (see picture). This means that insects – or humans – must spread pollen from male to female flowers.

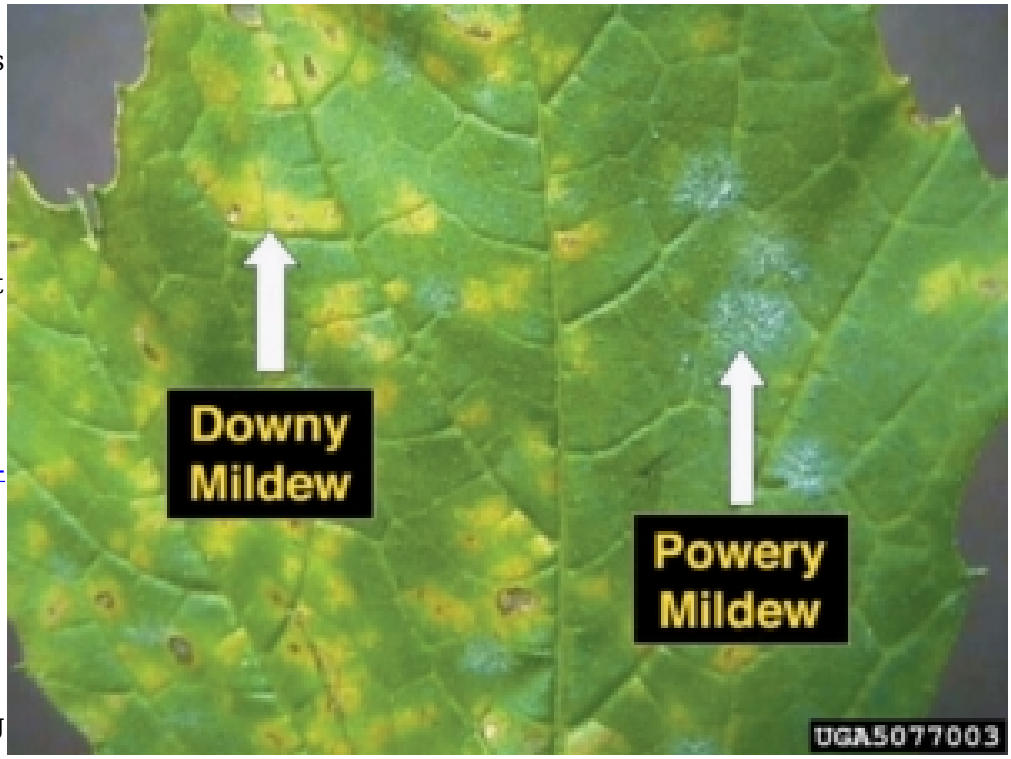
For efficient pollination, ensure there are plenty of pollinators around. One method is to create a pollinator garden with flowering plants that attract pollinators. Another is to eschew insecticides, or at least stop applying them once plants start blooming. Even organic pesticides can harm pollinators.

Incompletely pollinated cucumber. Photo: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo. CC BY-NC 3.0

Cucumber flowers, male (top) and female (bottom). Image: Encycl. Britannica (1911). Public Domain.

Diseases

Cucumbers are extremely susceptible to fungal diseases – in my experience at least. Downy mildew and powdery mildew (see picture) are among the most common. Prevention is the best way to control disease, as most plant diseases are difficult if not impossible to cure. Begin by choosing disease-resistant cultivars. Cornell University has compiled a list of disease-resistant cucumber varieties (and similar lists for other crops).



An unlucky leaf with both downy and powdery mildew. Photo: David B. Langston, University of Georgia, Bugwood.org. CC BY-NC 3.0

Next, use cultural practices to prevent diseases from getting established. Trellising will help keep leaves dry and reduce fungal growth. Avoid overcrowding: thin to 2 or 3 plants per mound, and separate mounds by 3 feet. Water at the base of plants and try not to splash soil up onto the leaves. Mulch will reduce soil splashing and the need for irrigation. Control insects (see below) that spread diseases like bacterial wilt or viruses (see pictures). At the end of the season, remove all plant litter.

Right, a squash plant suffering from bacterial wilt. Left, healthy plant. Photo: Howard F. Schwartz, Colorado State University, Bugwood.org. CC BY-NC 3.0 (cropped)

Leaf from a cucumber plant suffering from cucumber mosaic virus. Photo: David B. Langston, University of Georgia, Bugwood.org. CC BY-NC 3.0 (cropped)

Check often for symptoms of disease. When you notice diseased plants, particularly plants with insect-borne diseases, immediately remove and discard – don't compost – the diseased plants. For fungal diseases, you might get away with removing affected leaves if you catch the infection early.

The Virginia Cooperative Extension's Pest Management Guide (Table 2.4) lists sprays – including organic options like neem oil and copper – that may slow progression of fungal diseases. (Always follow label instructions and use personal protective gear when applying pesticides.) Succession planting is a better option: new plants will be ready when older plants – inevitably, in my experience – succumb.

Insects

Cucumber beetles, both spotted and striped (see pictures), are problems because they both directly damage plants and transmit bacterial wilt. To avoid cucumber beetles, don't plant cucumbers where any cucurbit – cukes, squash, melons – has grown the past two seasons. Delay planting of all cucurbits until June 15th: adults overwinter in soil and emerge in spring to lay eggs, but larvae will die if their host isn't present. Row covers will protect young plants, but must be removed after flowering to allow pollination. Scrupulously remove plant material at the end of the season to reduce the overwintering beetle population.

Spotted cucumber beetle. Photo: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org. CC BY-NC 3.0

Striped cucumber beetle Photo: Jim Jasinski, Ohio State University Extension, Bugwood.org. CC BY-NC 3.0 (cropped)

Aphids bear live young, so severe infestations (see picture) can appear seemingly out of nowhere. They feed by sucking liquids out of plant tissue, thereby both directly damaging plants and spreading diseases. The symptoms of aphid infestations are shriveled or curled leaves. The aphids themselves are easy to see: they'll look like gray or yellow-green dust covering leaves and stems. Knock aphids off plants with a strong stream of water from a hose (but not a power-washer).

Chapter 2 of the Pest Management Guide lists chemical controls, conventional and organic, for cucumber beetles, aphids, and other pests. Only use these for severe infestations. (Always follow label instructions and use personal protective gear when applying pesticides.) To avoid harming pollinators, don't apply insecticides after plants have bloomed. Carefully monitor plants to catch infestations early in the season.

Aphids (yellow-green specks) and their damage: shriveled and deformed foliage. Ants are feeding on the aphids' sugary excretions. Photo: Renjusplace, Wikimedia Commons. CC BY-SA 3.0

Closing thoughts

Cucumbers are infamous for overproduction, but in my opinion too much of a good thing is wonderful. Your neighbors will always be happy to accept gifts of summer produce, and local food banks may accept donations of fresh produce.

References and further reading

Featured image: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org; CC BY-NC 3.0 (cropped)
Climbing Cucumbers University of Maryland Extension
Cucumber Clemson Cooperative Extension
Cucumbers Cornell Cooperative Extension
Cucumbers, Melons, and Squash Virginia Cooperative Extension
Disease-resistant Cucumber Varieties Cornell College of Agriculture and Life Sciences
Growing Cucumbers in a Home Garden University of Maryland Extension
Growing Cucumbers in the Home Garden University of Georgia Extension
Hand Pollination of Squash and Corn in Small Gardens University of Florida Extension
Hardening Off Vegetable Seedlings for the Home Garden University of Maryland Extension
Insect Management on Cucurbit Vegetables NC State Extension
Integrated Pest Management and Pesticide Safety Virginia Cooperative Extension

Key to Common Problems of Cucumbers University of Maryland Extension
No-till in the Home Garden: Why and How Ralph Morini, Piedmont Master Gardeners
Organic-approved Pesticides: Minimizing Risks to Bees (PDF) The Xerces Society for Invertebrate Conservation
Pest Management Guide (2024) Virginia Cooperative Extension
Plant a Pollinator Paradise Deborah Harriman, Piedmont Master Gardeners
Pollination Problems of Vegetables University of Maryland Extension
Starting Seeds Indoors Cleve Campbell, Piedmont Master Gardeners
Vertical Gardening Using Trellises, Cages, and Stakes Virginia Cooperative Extension