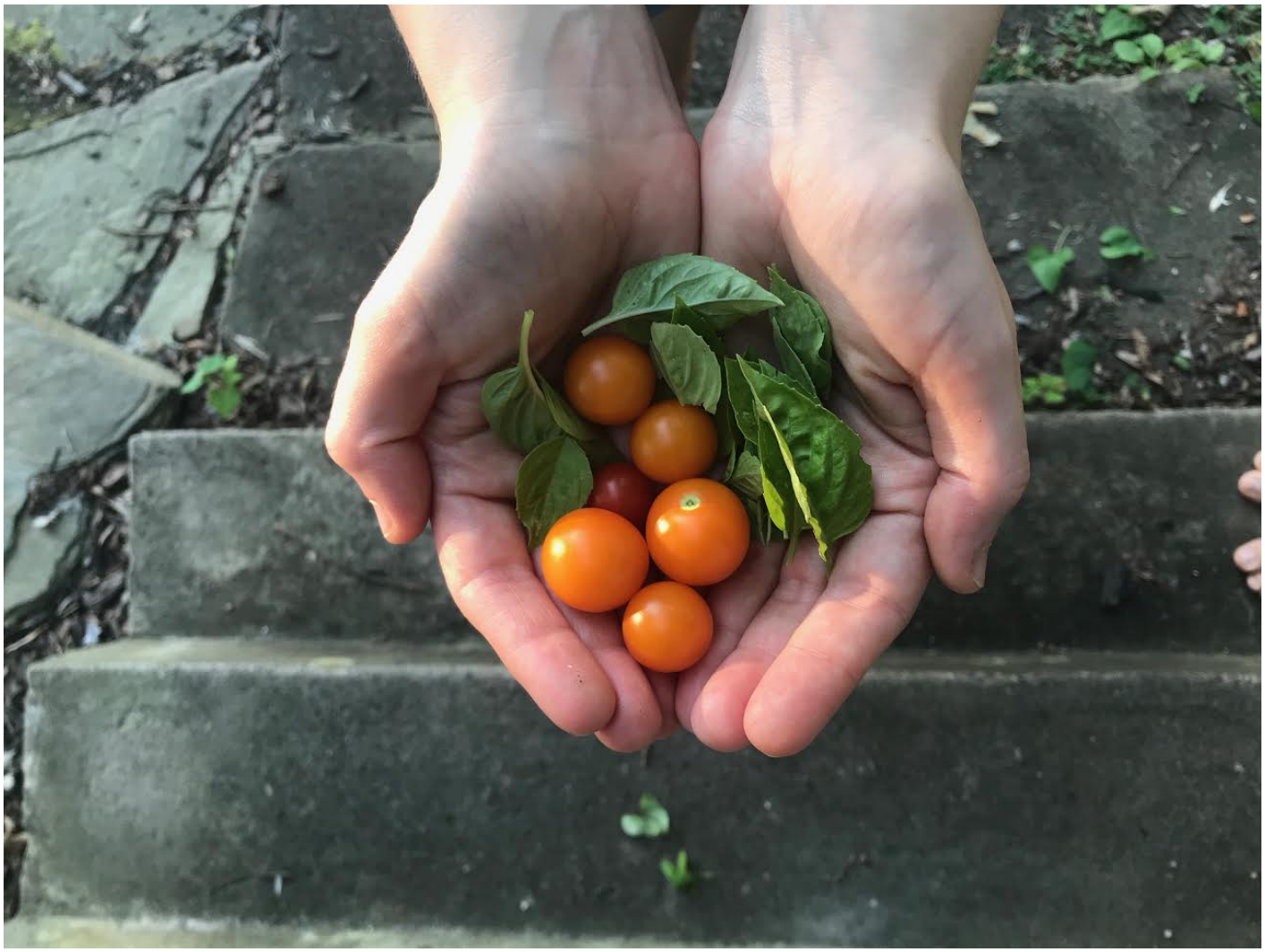
August 2020-Vol.6 No.8



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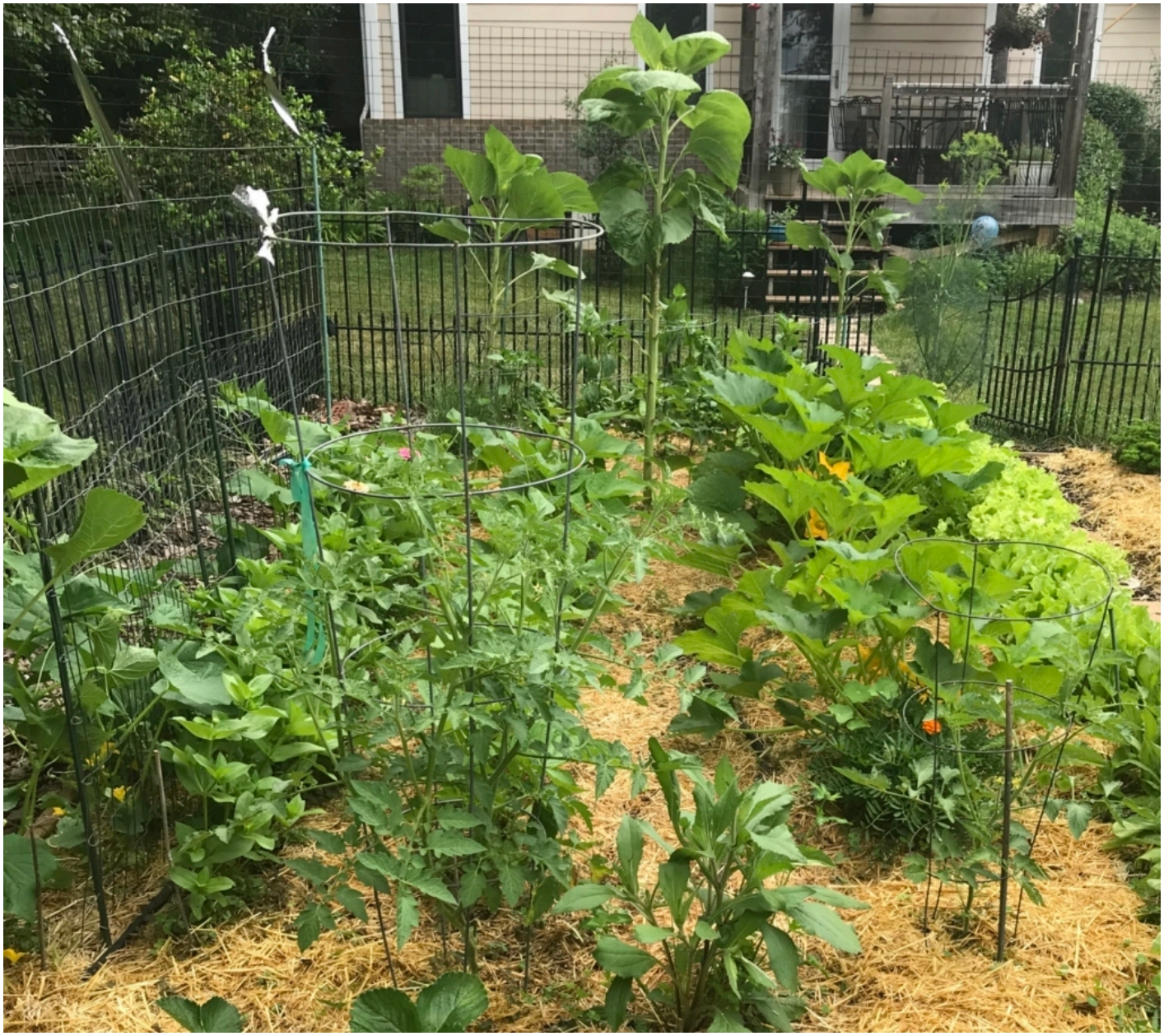
Gardening for Resilience: The Bounty of Fall Vegetables

By mking | August 2020-Vol.6 No.8



Without doubt, you've heard that the Covid19 pandemic has motivated many newbies to get digging as they create vegetable gardens to nourish the body, mind, and spirit. Some call these "victory gardens" because they conjure up the gardening momentum that occurred during World War ll. However, since the coronavirus won't be conquered anytime soon, it might be appropriate to refer to these efforts as "gardening for resilience." I've enjoyed growing a vegetable garden every year of my adult life, but sheltering in place this spring gave me more time to appreciate the benefits of nurturing productive green babies. In addition, social distancing increased my motivation to extend the joy of working in my garden beyond the summer

months. I'm committed to keeping a great thing going and will continue my daily adventures with vegetable friends through this fall and winter. To boost your own morale and expand the harvest bounty this year, perhaps you will also want to try fall gardening. This article offers basic information, practical tips, and online resources to help you get started.

Why Garden this Fall?

- Needless to say, fresh air and physical exercise support good health, and no need for social distancing with plants.
- Cooler weather and fewer insects make outdoor time quite pleasant.
- Growing your own food, free of chemical additives, contributes to a healthy lifestyle.
- As you weed and care for growing plants, you'll gain beneficial daily routines.
- Generally ample autumn rainfall means less attention to watering duties.
- Fresh vegetables for consumption provide delicious, tangible rewards.
- You'll get some relief from concerns about available food supplies during the pandemic.
- Cool-season crops that mature in cooler temperatures are slightly sweeter (depending on your own taste).
- Learning something new can be refreshing!

Colorful, nutritious vegetables. Photo: Courtesy of Pixabay

Where to Plant

- If you started a vegetable garden this spring, you've got a great place to keep it growing. Consider re-using areas where you had lettuce, spinach, and peas earlier in the season; add fresh plantings, but rotate crops, so you have a different vegetable in each of those spots. As some of your summer crops lose their luster or stop producing, pull them up to make way for new sets of seeds or seedlings for your fall harvest.
- If you're embarking on a gardening journey from scratch, this article from Virginia Tech provides valuable guidance about locating an appropriate site for your vegetable garden. Select the area with care, to ensure good gardening for years to come.

What to Grow

- Wow, an opportunity to choose what you like! Think about the space available in your garden, your personal preferences for eating and cooking, and which vegetables can manage cooler conditions.

- And don’t forget the option for late-season planting of warm-season vegetables such as beans, squash, tomatoes, peppers, and cucumbers to continue your scrumptious harvest. In our zone (7a), planting in late July and early-August will yield produce that’s ready before it gets too cold. Look for short-season cultivars to be sure they have sufficient time to mature before the first frost arrives in mid-to-late October.
- Cool-season vegetables are classified as “**semi-hardy,**” those that **tolerate a light frost** of 30 – 32°F; or “**hardy**,” those that can **survive a hard frost** but will die if temperatures dip below 20°F.

Tasty lettuce. Photo: Courtesy of Pixabay

Semi-hardy crops include beets, carrots, Chinese cabbage, lettuce, parsley, parsnips, potatoes, and Swiss chard.

Swiss Chard. Photo: Courtesy of Pixabay

Brussels sprouts on stem. Photo: Courtesy of Pixabay

Hardy crops include broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, kohlrabi, leeks, peas, radishes, rutabagas, spinach, and turnips.

Kohlrabi in the garden. Photo: Courtesy of Pixabay

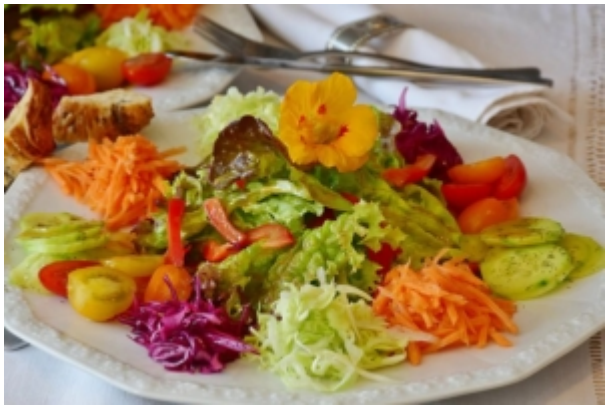
Green cabbage. Photo: Courtesy of Pixabay.

Cauliflower. Photo: Courtesy of Pixabay

- Some vegetables, including greens, radishes, turnips, and cole crops from the *Brassica* family (cabbage, broccoli, cauliflower, brussels sprouts, kohlrabi) will thrive and become tastier in chilly weather.

Fresh spinach. Photo: Courtesy of Pixabay

For me, there's nothing better than a fresh crunchy salad or flavorful cooked greens packed with nutrition. I can hardly wait for the second act of delicious edibles this coming fall. Find all the details you need to try this yourself in David Garth's informative article in the August 2015 issue of *The Garden Shed* called "Growing Fresh Fall Greens."



Garden salad with fall vegetables. Photo: Courtesy of Pixabay

When to Plant

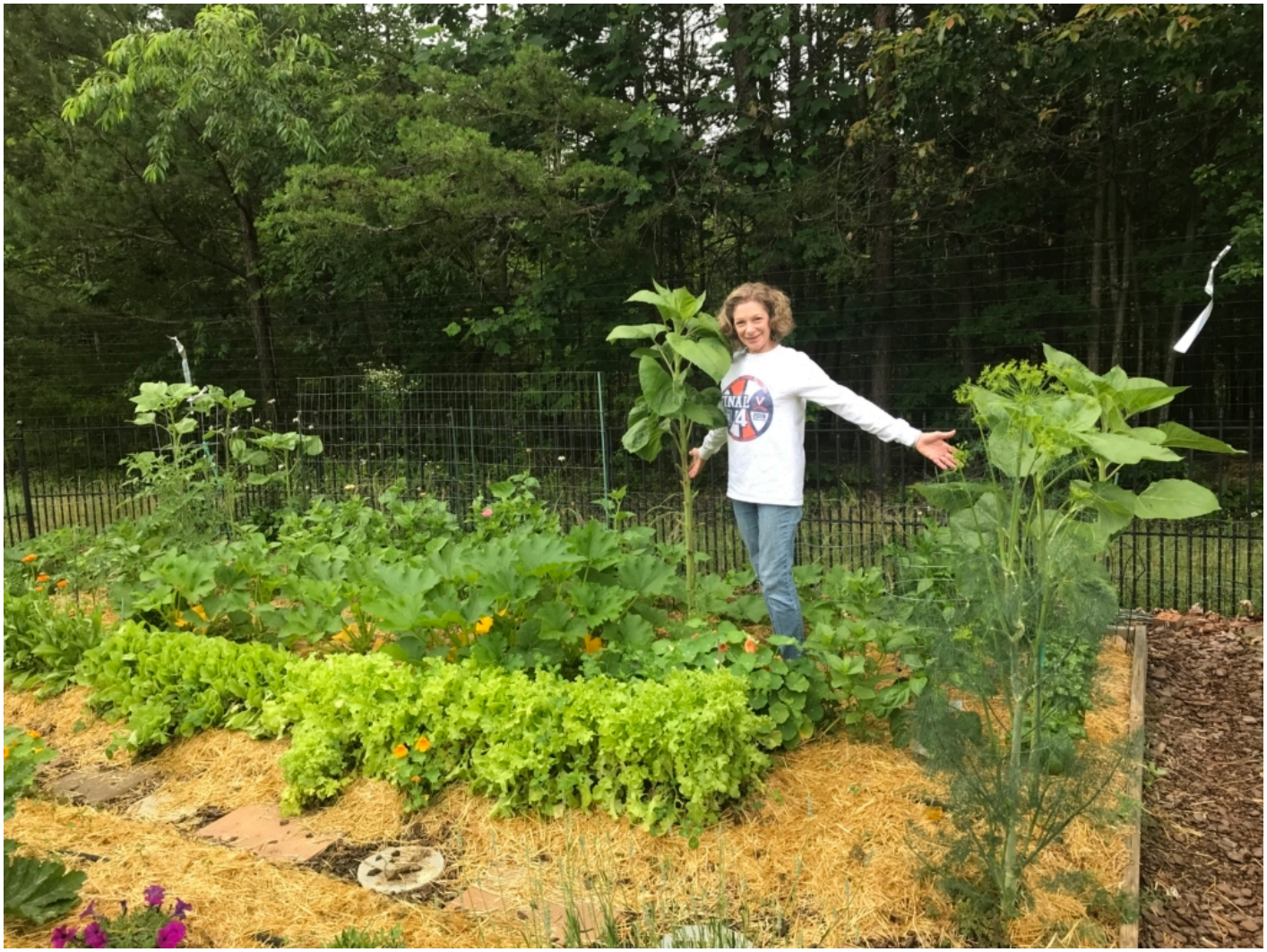
Here's the key to your success: **timely planting,** and that involves some arithmetic.

- One of the best explanations of the formula for choosing a planting date is found in Cleve Campbell's article from the July 2016 issue of *The Garden Shed* called "Planning the Fall Vegetable Garden." As he explains there, you start with the "**days to maturity**" on the seed packet. "The general definition for "days to maturity" is the average number of days from the time the seed is sown (or a seedling is transplanted) to the first harvest. We could just count backwards to determine what date to plant, but for fall gardening, we need to add 14 days as the "fall factor" because the "days to maturity" number on a seed packet is based on optimum conditions, and the **fall factor** takes into consideration that conditions are less than optimum in fall, resulting in slower growth rates due to cooler weather and shorter days."

So we add number of **days to maturity + fall factor** (14 days) **= number of days to count back from first frost date** (~October 15 – 25 for Zone 7a). If you're planting a "frost tender" crop like cucumbers, you must also add a "frost tender factor" (about two weeks). For some examples that apply the formula to a couple of particular vegetables, refer to Cleve Campbell's article, cited above.

- The Virginia Cooperative Extension has a helpful chart showing recommended fall planting dates for most vegetables. Virginia's Home Garden Vegetable Planting Guide: Recommended Planting Dates and Amounts to Plant. You may also wish to consult the USDA plant hardiness zone map.

If possible, consult with an experienced gardener (e.g., neighbor or friend) who can offer suggestions regarding optimal timing for fall planting. For specific questions about cool-season crops, reach out to the Piedmont Master Gardener Help Desk at: albemarlevcehelpdesk@gmail.com.



Melissa King's vegetable garden

How to Prepare

- If you're starting a new plot, review the helpful recommendations in "Planning a Vegetable Garden" from Virginia Cooperative Extension.
- For an established garden, do some housekeeping in advance by removing and disposing of spent crops, weeds, and any diseased plant material from your existing plot. This is the perfect time for a fresh start.
- You'll also need to replenish the soil because your spring and summer crops have consumed essential nutrients. Add a layer of compost or aged manure, using a spade to work this into the top four inches of garden soil. You may want to add a complete fertilizer (e.g., 10-10-10), applying one to two pounds per 100 square feet, but avoid deep tilling, which destroys soil structure and can lead to moisture loss.
- If soil is dry, water the garden the day before you plant new crops.
- Plant new seeds in shallow trenches, cover them with soil and then add a light layer of organic mulch, such as straw. Keep seeds well-watered until seedlings appear. During hot, dry August weather, it's particularly important to shade the soil, as some seeds will not germinate when soil temperature is above 85° F. If it's too hot, you can pre-sprout seeds indoors and transplant them into the garden after they germinate.

Garden Maintenance

- After planting, monitor rainfall and keep your garden plot sufficiently watered (about one inch per week is recommended).
- As always, be vigilant and observant of developments in the fall garden and take action as needed.
    - Insect pests such as squash bugs and cucumber beetles are likely to appear, and cabbage worms and loopers can be a serious problem. Floating row covers can protect young seedlings, but these need to be removed from crops that are pollinated by insects. For detailed advice on row covers, check out Row Covers: A Gardening Season-Extender With Benefits, The Garden Shed/Nov.2019.
    - Powdery and downy mildew may infect fall vegetable plants, especially when nights get cooler and dew retains moisture on garden crops. Keep an eye out for this, and remove any affected plant parts immediately. Application of a fungicide may reduce the spread of these diseases.
- During October, follow daily weather reports and note the arrival of cooler nights. Be sure to harvest fresh produce from any remaining "tender crops" that cannot survive a frost, such as squash, cucumbers, and beans.
- Some fall crops will continue producing, even when nights are chilly. You can extend the fall garden yield by protecting "semi-hardy" vegetables with cardboard boxes, blankets, canvas bags, or floating row covers overnight. Be sure to uncover them the next day when the air warms up to 32° F.

Cold Weather Care

- In November, as the air temperature begins to drop, cool-season crops may become more flavorful. "Hardy crops" (listed above) can withstand a frost, and some might survive all winter if covered with a thick layer of straw mulch. For example, you can enjoy delicious root crops throughout the winter months by digging them up from underneath the straw.
- For those who want to maintain a garden right on through the winter, consider using a cold frame, sun box, or hot bed to protect your vegetables. You can make your own or purchase ready-to-go equipment. There's nothing better than garden fresh veggies picked for a New Year's celebration!

Spinach salad with beets and pears. Photo: Courtesy of Pixabay

- As you begin to wind down your gardening efforts during colder weather, remember the importance of careful clean-up. Remove stray weeds, dead stalks, and other plant material that

may harbor diseases. Pull up unnecessary stakes and trellises, hose them down, and tie them in bundles for storage until next spring. Add a layer of rich compost in empty garden areas, so that microorganisms can go to work improving your soil and don't forget to shred fallen leaves to put in the garden, too. For more helpful suggestions, check out "Tasks and Tips" in fall and winter issues of *The Garden Shed*.

For those who may be on "staycations" in the coming months, growing vegetables can be a delightful pursuit in your own backyard. Hopefully, this article will whet your appetite for fall gardening.

Basket of tasty vegetables. Photo: Courtesy of Pixabay

Resources

Fall Vegetable Gardening/Univ.of Vt.Extension

The Fall Vegetable Garden/Purdue Univ.Extension

Fall Vegetable Gardening Starts Now/Fairfax Master Gardeners/fairfaxgardening.org

Floating Row Cover/Univ.Md.Ext.

Season Extenders, www.ext.vt.edu. Pub. 426-381

Planning the Vegetable Garden, www.ext.vt.edu/Pub.426-312

Basics of Fall Vegetable Gardening/Ala.Coop.Ext.

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https://pmgarchives.com/plant-a-virus-victory-garden/

The Cole Crop Family/National Gardening Association/garden.org

What’s Killing our Oak Trees?

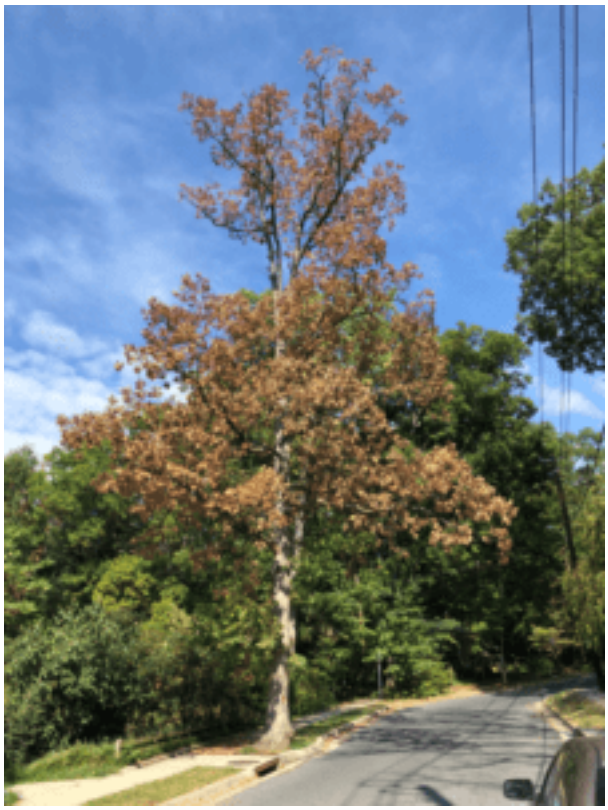
By Ralph Morini | August 2020-Vol.6 No.8

The mighty oak is an iconic tree family that populates forests and landscapes from coast to coast. Beyond their aesthetic beauty and related benefits to humans, oak trees offer important food and shelter for many organisms from below-ground mycorrhizal fungi to insect larvae that feed on leaves, to birds and mammals that depend on acorns for winter food. But there is something wrong. Oaks are dying at a high rate from a variety of causes that can be tricky to diagnose. This article reviews some common problems, offers help in identifying cause, and advises actions to minimize harm to damaged trees and neighboring survivors.

Red oak (A) White oak (B) Photo: Used with permission of Ohio State Univ. Extension

What type of oak tree is it?

There are about 90 different types of oak trees growing across the United States. Most are classified as either red or white oaks. Because susceptibility to many diseases varies by family, it is helpful to know whether your tree is a red or white oak variety. Leaf size and shape offer a quick indication. While leaf length is similar, red oak leaves are wider. Also, red oaks have more angular, pointed lobes. White oak leaf lobes are rounded.



Oak decline: Photo: David L. Clement, Univ. of Md. Extension

A Description of Common Problems

Oak Decline

Oak decline is a widespread issue for mature oaks, of both red and white oak families. It is characterized by progressive dieback of crowns, starting from outer limbs and moving inward as the decline progresses, potentially over several years. It is typically caused by a combination of biotic and abiotic factors. Abiotic contributors include maturity, site factors, weather extremes including storm damage, extreme wet periods, and droughts. In residential settings, construction activity may cause root damage that weakens trees, causing them to become susceptible to a variety of biotic factors. For example, defoliation from gypsy moths or tent caterpillars can accelerate decline of weakened trees. Borers such as the two-lined chestnut borer and fungal diseases like hypoxalon canker are two common contributors to oak decline.

Two-lined chestnut borer galleries. Photo: Phil Pellitteri, University of Wisconsin Insect Diagnostic Lab.

The **two-lined chestnut borer** is a damaging insect that is attracted to weakened or diseased trees of many varieties. The adult is a thin, black beetle that is active from May to July. The adult lay eggs in bark crevices that hatch in one to two weeks. The larvae create winding tunnels called galleries as they feed on cambial tissues, cutting off nutrient transport. They overwinter as larvae or pupae and emerge as adults through D-shaped holes in the spring.

Damage symptoms include branch dieback with leaf wilt and sudden browning. Leaves typically remain attached to branches. Borers cause death of a tree when galleries girdle the trunk, cutting off nutrient passage to branches above the feeding level. Time to death can be from one to five years.

Best prevention practices are the usual good care techniques. Keep trees healthy by providing water during droughts, avoid soil compaction and root damage from construction activity, protect bark integrity by

avoiding injury by lawncare machinery, and manage defoliating insect infestations. If recognized early, professionally applied imidacloprid injections can be effective.

Hypoxalon canker is an opportunistic fungus that may attack any type of oak tree that is stressed or weakened from disease, environmental or other factors. It spreads by spores from diseased to healthy trees. Infection causes dead lesions on limbs, branches, or trunks as it develops under bark. It causes sapwood decay, damaging the structural integrity of the tree, and causing a potential safety hazard.

Hypoxylon canker on oak tree. Photo: Missouri Botanical Garden.

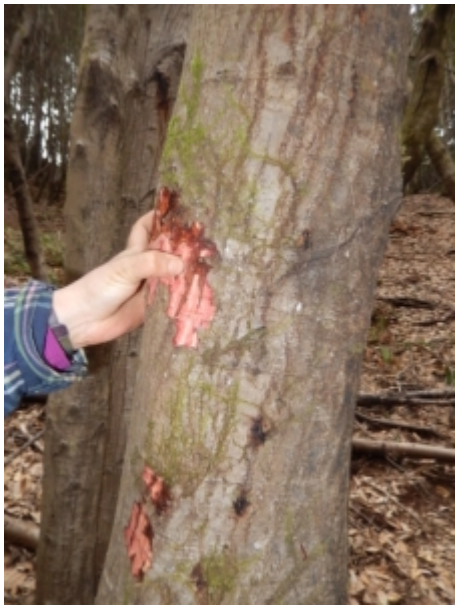
Hypoxylon canker on oak tree. Photo: Missouri Botanical Garden.

Symptoms include those typical of other oak tree health issues: yellow or browning leaves, small leaves and reduced twig growth, thinning canopy, dead limbs and water sprouts on trunks and large branches. In later stages, bark falls off the tree exposing the fungus and white, stringy sapwood.

Avoid the canker by maintaining good tree health, allowing the tree's natural defenses to ward off infection. A costly but useful technique to try to save valued trees is vertical mulching. This involves drilling a grid of holes throughout the root zone, extending beyond the drip line. Holes should be a few inches in diameter and 18-24 inches deep. Fill them with a porous mixture of pea gravel or coarse sand and compost or other organic matter. This improves drainage during wet periods and conversely, infiltration and moisture retention during droughts, while maintaining aeration.

If less than 15% of the canopy is affected, remedial pruning can help. Remove dead branches 8-12 inches below the infection, sanitizing the tool between each cut with a 10% bleach solution. If more than 15% of the canopy is infected, the tree should be removed due to its likely structural damage. Because the fungus is already present in the area, destroying the wood is not likely a benefit. However stored wood should be located remotely from any remaining trees.

Sudden Oak Death



Sudden Oak Death. Photo: Richard Sniezko, USDA Forest Service.

Sudden Oak Death is caused by a fungal pathogen, actually a water mold, *Phytophthora ramorum*. It was transported into the Mid-Atlantic area on nursery stock from the West Coast, where the disease has caused widespread oak dieback in California and Oregon. It thrives in cool, moist environments, often infecting understory shrubbery, including rhododendron, laurel, azalea, and camellia. On the shrubs, leaves drop but the plant usually survives. Spores on shrub leaves are wind-blown or rain splashed onto the oak trunk. The fungus infects the living bark layer. The infection then spreads around the tree circumference, cutting off nutrients passing from leaves to roots, killing the roots. The upper tree dies from lack of water. Red oaks are more susceptible than white oak varieties.

Leaf spotting and twig dieback are visible. Characteristic symptoms of sudden oak death are cankers and calluses on bark and wood, often seeping a black or reddish ooze. Tree death occurs in two years or less, depending on general tree health when infected. There is currently no cure, although research at Virginia Tech has identified the pathogen's genome and holds promise for developing a cure. Until then, it is best to remove both shrubs and trees that are infected.

Oak Wilt Disease

Oak wilt. Photo by Joseph O'Brien, USDA Forest Service, Bugwood.org, CC BY 3.0

Oak wilt is another fungal disease that plugs water-conducting tissues with its mycelia and spores. Trees respond defensively to the invasion by plugging their own vessels and worsening the impact.

Oak wilt affects all oaks with differing rates of decline. The red oak family including black, black jack, pin, red, scarlet, shingle and shumard oaks can die in weeks. The white oak group, including bur, chinquapin, swamp white and white oaks may survive for several years, showing decline symptoms.

The disease is transmitted in two ways. Above ground, sap feeding beetles pick up the fungus by feeding on an infected tree where there is a fresh wound from pruning, storm damage or bark openings, and transport it to other newly wounded trees. Below ground, where root grafting between oak trees is common, the disease is transmitted directly from tree to tree.

Symptoms include withering of the upper canopy and browning of branches and crown portions. Red oaks show a yellowing and then browning of leaf margins or along veins, spreading outward. White oak symptoms are less distinct. Spring infections may cause mid-late summer wilting exacerbated by hot, dry weather and a resulting water deficit.

Red oaks often show dessicating bark cracked open by fungal mats disbursing the pathogen. In addition, sapwood may show brown streaks. However, conclusive diagnoses are difficult without lab work to identify the fungus.

To minimize susceptibility, avoid wounding trees during the growing season when beetles are active. If growing season wounds are unavoidable, seal the wounds with a dressing.

To prevent spread from an infected tree, remove the tree after severing root contact between neighboring trees by trenching around the root perimeter. Dig the trench prior to removing the tree to avoid a water tension imbalance that could suck fungal material into healthy trees. Leave as short a stump as possible to minimize the fungal material left behind. Because there will be fungal material beneath the bark, logs should be removed and properly disposed of. The pathogen doesn’t survive when subject to dessication and it is temperature sensitive. Chips are unlikely to spread the disease, but it is best not to use them near healthy oaks. Professional assistance is strongly advised if oak wilt is suspected. While tree removal is generally recommended for red oaks, trees in the white oak family may be saved through propiconazole injections and pruning dead branches.

Armillaria Root Rot

Clusters of fruiting bodies at base of oak tree with armillaria root rot. Photo: Robert L. Anderson, USDA Forest Service, Bugwood.org, CC BY 3.0

Armillaria root rot, sometimes called oak root rot fungus, can survive for many years in wood debris or dead stumps and root systems. It spreads to new trees of many species through root contact. It causes decay of roots and lower trunk eventually killing the tree and causing a toppling hazard.

Symptoms include poor growth, small yellowed leaves and dead branches in the upper canopy.

A distinctive sign is the growth of honey colored mushrooms at the trunk base in the fall. In addition, flat white fungal sheets grow between trunk and bark, and black fungal strands grow net-like at the trunk base and surrounding soil. Over time, the wood becomes soft and stringy from ground level to about six feet up the trunk. Young and stressed trees succumb quickly. Vigorous 15-20 year old trees are more tolerant. At this time there are no effective known chemical treatment strategies.

Lesser Threats

In addition to the oak killers listed, there are a number of lesser diseases that may cause concern but are not generally lethal to oaks.

Anthracnose on oak. Photo: Joseph O'Brien, USDA Forest Service, CC BY 3.0,

Anthracnose is a fungal disease that causes areas of browning on leaf margins and smaller necrotic spots on the leaf surface. It forms fruiting structures on the underside of leaves in necrotic areas, usually next to veins. It can infect twigs causing dieback prior to bud opening. The fungus likes cool, wet springs and tends to subside during hotter, drier summer weather. While unsightly, anthracnose is not usually seriously harmful to otherwise healthy oaks. Manage it with good hygiene. Remove dropped leaves, but don't prune trees until the dormant season to avoid subjecting the tree to other potentially more serious diseases.

Oak leaf blister on pin oak. Photo: Missouri Botanical Garden

Oak leaf blister is another fungal disease that commonly affects the red oak family during cool wet springs. It causes circular raised brown sections up to about 2 inches in diameter over the leaf surface. It may cause leaves to fall to the ground prematurely. If leaf drop happens early, second leafout may occur. If defoliation occurs late in the season, a single occurrence normally has little health effect on the tree. Consecutive infections can impact tree health.

Treatment includes maintaining good hygiene and watering during drought periods. It is possible to have an arborist apply a fungicide in early spring to protect at-risk trees.

Good Hygiene Minimizes Risk

Reviewing the disease summaries above shows a clear pattern. Good hygiene promotes oak tree health and will help them fight off disease. Key advice includes:

- Provide good drainage to avoid oxygen deprivation during wet periods
- Water during dry spells and droughts
- Mulch under the canopy to promote soil health. Leave a gap around the trunk base.
- Take care not to wound bark with lawn or other equipment.
- Remove damaged limbs and use a wound sealant during the growing season.
- Perform normal pruning during dormancy
- Avoid compaction and take care to prevent root damage during construction projects.
- Remove diseased debris when trees are removed to prevent spread to healthy neighbors.

Whether you are trying to protect valued oaks or are concerned about specimens showing signs of weakness, I hope this information is helpful in keeping your trees healthy.

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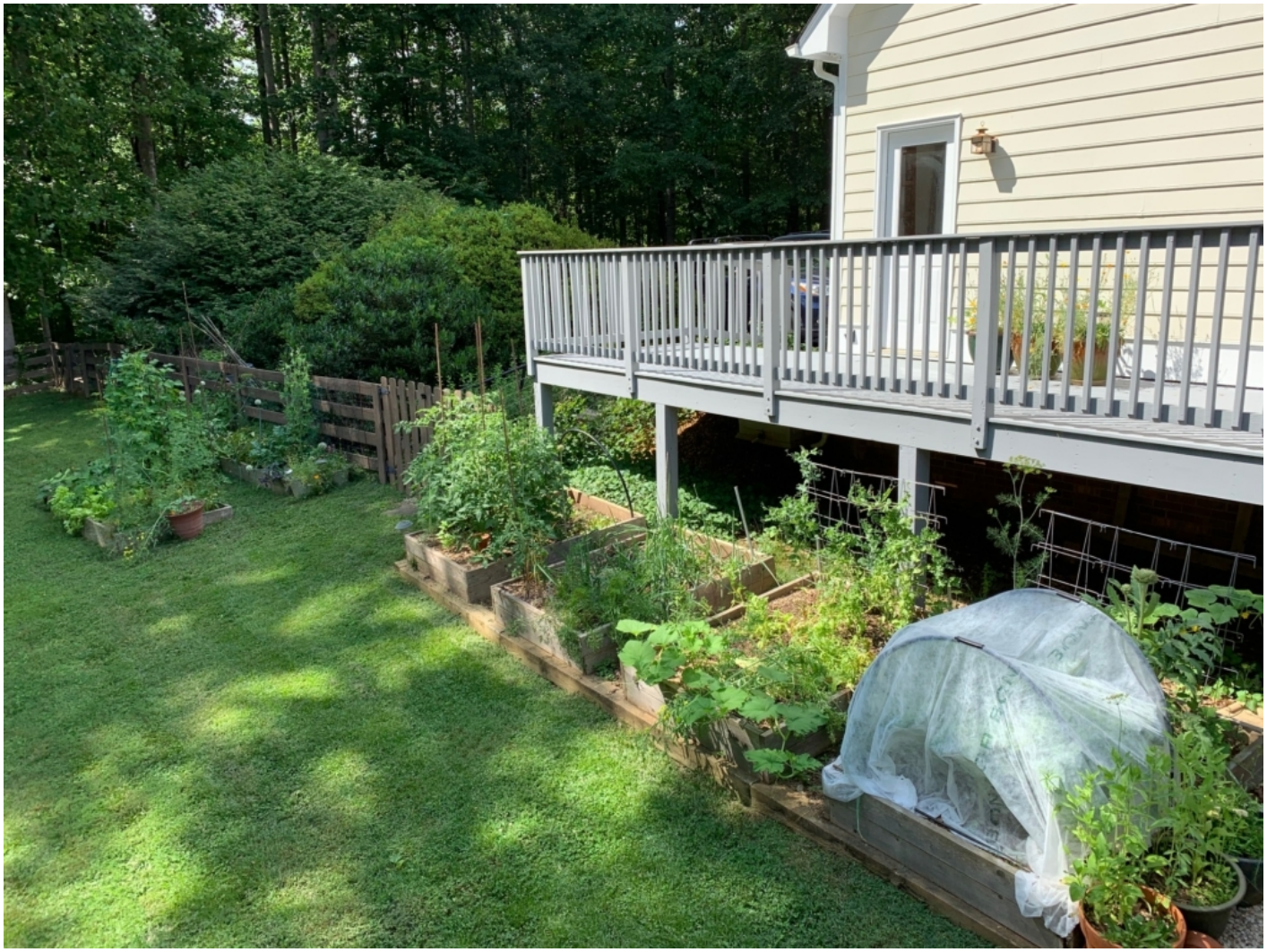
Featured photo: White oak tree by Pat Chadwick

August in the Edible Garden

By Ralph Morini | August 2020-Vol.6 No.8



Virginia weather has provided a continuing array of challenges to gardeners this year. The warm spring seduced us into putting summer vegetables in the ground early, only to face several frosty nights in May. June offered higher than normal rainfall, focusing us on moisture-loving pests and fungal diseases. As I write this in late July, we are on a multi-week run of high heat and little rainfall. In the first half of July we have had .4 inches of rain compared to a historical full month total of 5.3 inches. Each set of conditions suggests different, sometimes conflicting, gardening practices to maintain plant health. Is it best to plant in a dense pattern to crowd out weeds and shade the soil or space plants to encourage good air flow to reduce fungal pathogen risks? I think the answer is to pick the plan that works best in your garden and adapt as needed. In all cases, maintain good hygiene. Prune diseased vegetation and remove it from the garden, remove sick plants to prevent disease spread, pick pests off crop leaves to reduce plant damage and reduce pathogen vectoring. Now that we are into the high summer heat, mulching is a good idea to help maintain soil moisture, recognizing that mulch can provide refuge for certain pests. There is no single formula for success. Being attentive, understanding the issues that arise, and adapting on the fly is a practical approach. Meanwhile, following the best practices of crop rotation, minimum tillage, companion planting, and regularly adding organic matter to your soil all help minimize serious issues. Gardening is nothing if not a lifelong learning experience.

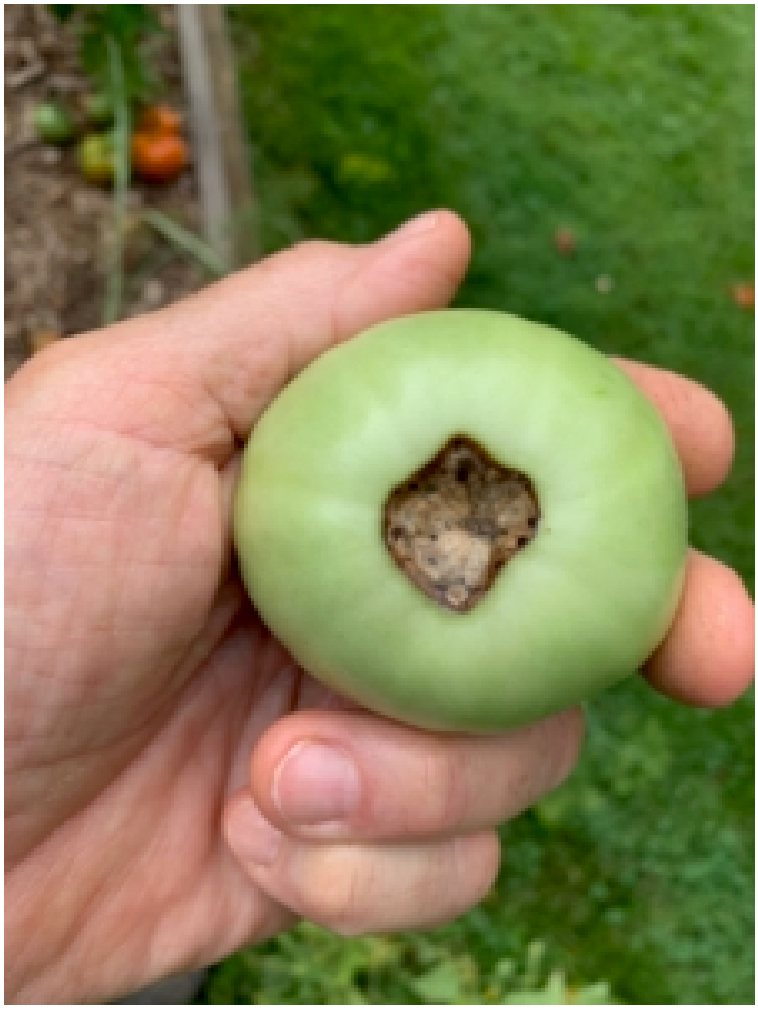
Planting a fall crop

August is the time to plant fall crops. In Hardiness Zone 7a, the first frost is expected in the October 15-25 time period, roughly 70-80 days from August 1. When choosing seeds to plant, be conscious of time-to-harvest noted on the seed packs to be sure the crop has adequate time to mature prior to frost. Cool weather crops, including greens and cole crops, survive frost but growth will slow down as days shorten and temperatures cool. Getting them to a harvestable stage prior to frost is a good idea. In general, choosing varieties with a short time to maturity makes sense.

Per the VA Cooperative Extension publication Virginia's Home Garden Vegetable Planting Guide, August is a good time to plant beets, broccoli, cabbage, carrots, cauliflower, collards, kale, kohlrabi, lettuce, mustard, radish, spinach and turnips. Again, comparing time to harvest with time to expected frost is a good practice.

The fall gardening season can be very productive here in central VA. We can enjoy home-grown produce at least through frost, and many greens and cool weather crops remain harvestable well into winter if established prior to cold weather's arrival.

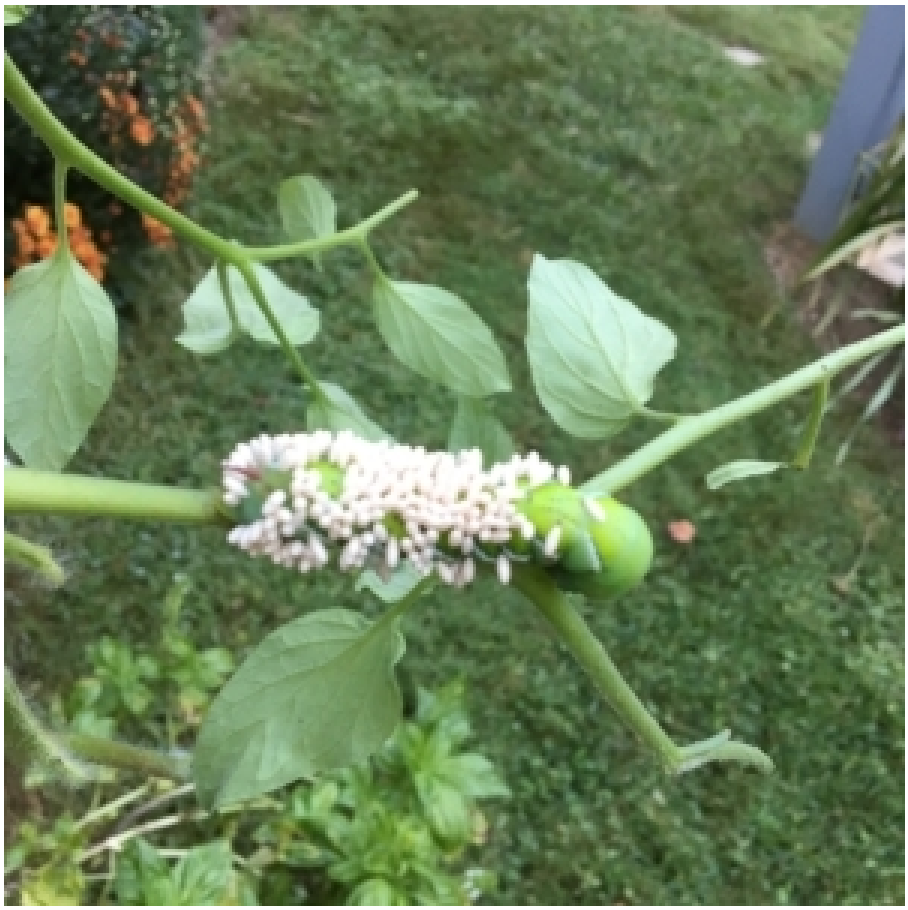
More Gardening Tips and Tasks For August:



Tomato blossom end rot: Photo: R Morini

- Managing tomato diseases becomes critical to maintaining tomato production later in the season. Tomato susceptibility to various blights, wilts, and viruses can be challenging. Regular

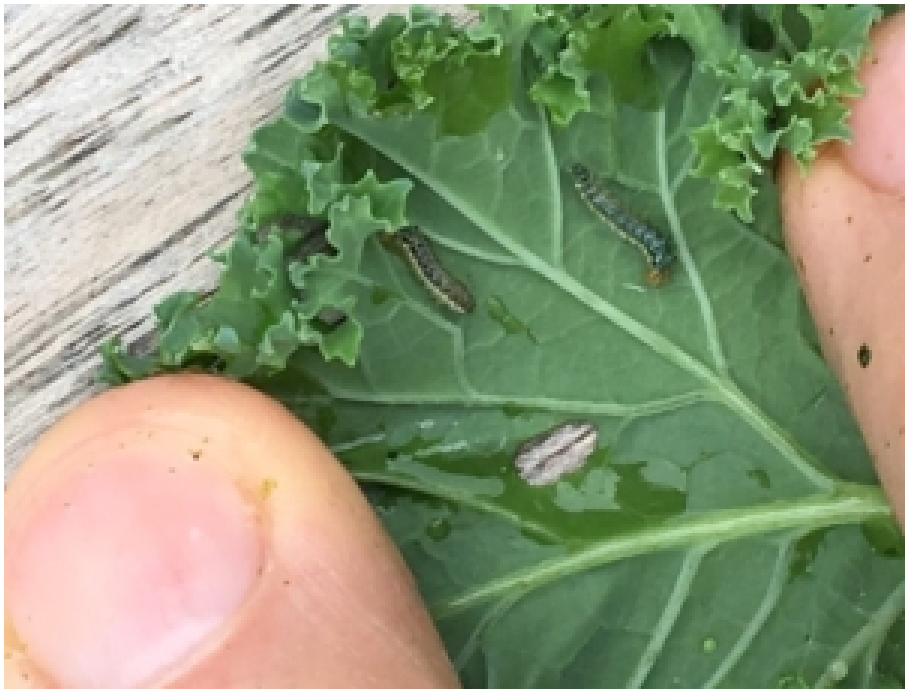
pruning with disinfected tools, removing plants afflicted with certain diseases, and watching for pests, like tomato horn worm, are all important. For help in identifying specific diseases and taking appropriate action, see the *Garden Shed* article Tomato Diseases. As an alternative, consider two articles from the Missouri Botanical Garden. This well-illustrated article is helpful in identifying tomato diseases and this one offers information for disease prevention and control. Also, note specific diseases you confront to guide you toward resistant seed and plant selections next year.



Tomato hornworm hosting parasitic wasp cocoons: Photo: R Morini

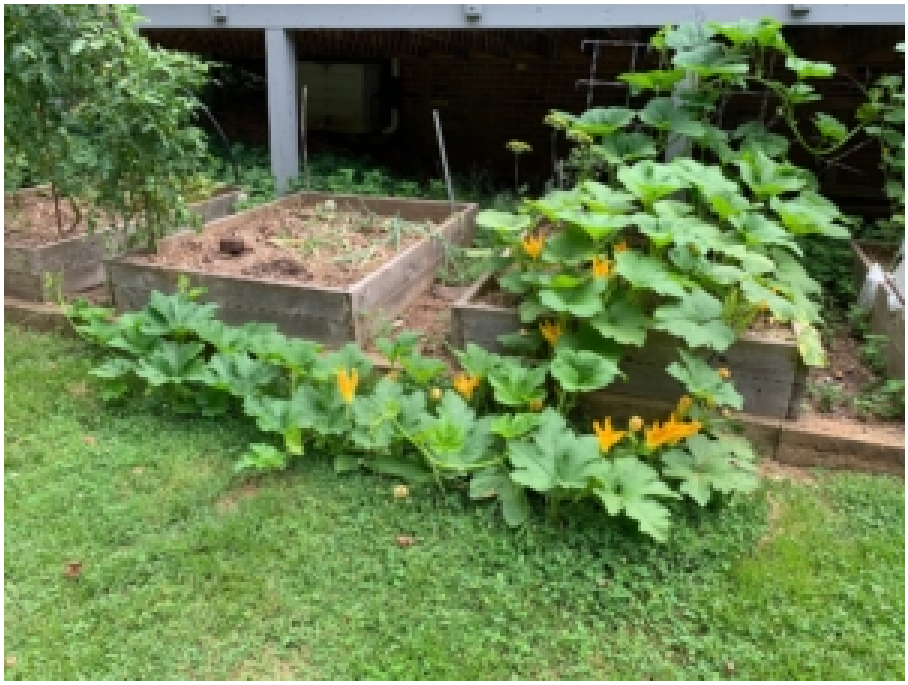
- Speaking of **tomato hornworm**, if you see one that looks like the one in the photo, leave it alone. The white cylinders on its back are beneficial **braconid wasp cocoons**. The adult wasp injects eggs into the hornworm. Larva feed on the worm's innards until ready to pupate when they exit and spin cocoons as shown. Tiny adult wasps emerge a short time later. The hornworm may live through the wasp cycle, but will die before pupating.
- When **choosing vegetables for the fall garden**, select those that are **semi-hardy**, as they will tolerate a light to moderate frost, and look for those with **quick maturity** (fewest days to harvest). This information will be listed on the **seed packet** or **catalog**.
- **Fall plants often have fewer insect problems** because they avoid the peak insect activity period of midsummer. However, some insects, such as cabbage worms and corn earworms, may be worse later in the year than in the summer. Avoid some pests and diseases by planting crops of different families than those grown in that garden section earlier in this growing season.
- When planting fall crops, **prepare the soil by restoring the nutrients removed by spring and summer crops**. A light layer of compost or application of a balanced organic fertilizer will provide the nutrients needed by your fall crops.

- Dry soil can make working the soil difficult and can also inhibit seed germination during the late summer. **Plant fall vegetables when the soil is moist,** either after a rain or after you've watered the area the day before planting. **Plant the seeds slightly deeper** than recommended for spring planting. Once planted, water them thoroughly.
- **Watering properly** is the key to conserving water and maintaining plant health in the heat of the late summer. One inch per week applied all at one time will wet the soil 6 to 8 inches deep and insure good yield from your mature crops. Two inches of organic mulch such as leaves or straw will cool the soil and reduce surface evaporation. Water the garden early in the day so the foliage dries before nightfall. **Wet foliage at night increases susceptibility to fungal diseases.**
- When **mulching around young seedlings**, take care not to cover them. Young seedlings need as much sunlight as possible. Mulch should cover the soil, not the young plants.



Cross striped cabbage worm on kale: Photo: R Morini

- If you have a problem with **cabbage worms** on your cole crops (cabbage, kale, collards, broccoli, cauliflower, Brussels sprouts), consider using floating or hoop-supported row covers, pick worms off the plants when you see evidence of chewing or excrement on the plants, and for extreme infestations, use Bacillus Thuringiensis (Bt), an organic and relatively safe pesticide as per label directions. If you protect your plants until the first frost you can enjoy harvesting many of these vegetables well into winter. For more detailed info on the problem and solutions, refer to the article OMG, What's Eating the Broccoli in the April 2018 issue of *The Garden Shed*.
- **Pick summer squash and zucchini every day or two** to keep the plants producing. If you are going on vacation this month, harvest all your vegetables beforehand and then arrange for someone to pick fast-maturing crops such as squash and okra while you're away. Otherwise, your vegetables will become over-mature and stop producing.



Runaway pumpkin vine. Photo: R Morini.

- If **vining crops** like squash and pumpkins are taking up too much of your garden space, it's ok to pinch off the growing tips. This will cause the plant to put more energy into fruit maturity, less into vegetative growth.
- **Potatoes continue to grow as long as the tops are green**. Dig only as many as you need for immediate use. The tubers will keep better in the ground than in a warm, dry area.
- Garden vegetables that become over-ripe are easy targets for some pests. **Remove ripe vegetables as soon as possible.**
- When harvesting, **don't let your produce sit in the hot sun** for any length of time. Cover, or even better, keep them cool, to prevent loss of succulence, wilting, and conversion of natural sugars to starch.

A Second Chance…

August is kind of a good news-bad news time for home gardeners. The spring plants are expiring, we're fighting bugs and diseases, and we're hot and tired. The good news is that removing the old plant material, reviving the soil with fresh compost or organic fertilizers, and planting new seeds or transplants gives us a second chance to enjoy the growing and harvesting periods that make edible gardening so satisfying.

Thanks for visiting us in *The Garden Shed*. We look forward to sharing experiences again next month.

Sources:

Monthly Gardening Tips – August, Gardening Resources, PMG

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Featured photo: R Morini

Asters — Color and Life in the Fall Garden

By Susan Martin | August 2020-Vol.6 No.8

There are approximately 250 types of asters growing around the world. In 1994, Dr. Guy Nesom, a research botanist, attempted to reclassify the genus into a number of smaller units based on morphology (form and structure) and chromosomes. He concluded that **none of the American so-called "asters" were closely related to Eurasian asters. The genus *Aster* is now restricted to plants from Eurasia.** This revision makes it easier for us to identify native asters. If the botanical latin **name of a plant includes the genera *Aster*, it is not native to the U.S.**

The species native to North America that were formerly classified as being in the genus *Aster* have been divided into separate genera. Eastern North American genera include: *Symphyotrichum, Eurybia, Ionactis*, *Seriocarpus*, *Doellingeria*, *Ampelaster* and *Oclemena*. **The majority of the former aster species belong to two genera, *Symphyotrichum* and *Eurybia*.** The common name for all the above genera is still aster, and will be the common term used in this article, which focuses on **North American native asters.**

ASTER CHARACTERISTICS

Virtually all of the native aster species are perennials with alternate leaves and often, prominent basal leaves. Most species have fibrous root systems; some species have rhizomes (underground storage stems), or stolons (above ground root stems), and can be aggressive spreaders. Some also spread by self-seeding. Plants range from less than 1' to 7' tall. While most species prefer full sun and dry-to-medium moisture,

some species tolerate shade and wetter conditions. Habit tends to be leggy; cutting stems back by half by early summer will help promote bushiness, although flowering might be a little delayed. Many asters are browsed by deer and rabbits.

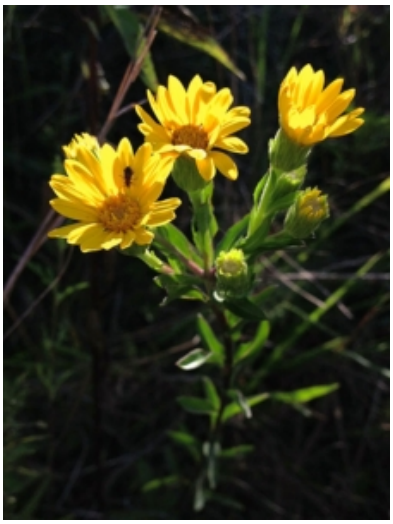
Flower heads are made up of 1) **petal-like ray flowers** that can vary in color from white to pink to blue to purple and 2) **tubular disk flowers** that are usually yellow. In some species, as many as 300 disk florets can be tightly packed into the circular flower head. The disk flowers are perfect (bisexual with male and female structures) and are fertile. In some species, the ray flowers are pistillate (female) flowers that can be pollinated and produce fruits, while in other species the ray flowers may be sterile.

LOCAL NATIVE ASTERS

As native plant enthusiasts, we can choose asters that are native to the U.S, or to the eastern part of the U.S., or to the mid-Atlantic region, or we can hone our selections even further. **Choosing plants that are local to our specific area** means that the plants should thrive in the soil, elevation, hydrology, and climate in which they've evolved. (Of course, the soil in many of our home landscapes has been disturbed.) Just as an illustration, I've selected asters through the Virginia Department of Conservation and Recreation Native Plant Finder. Once you get to the link, type in aster under "common name" and then look for the asters that are in the P (Piedmont) region.

Asters specific to the Piedmont region:

Chrysopsis mariana, **Maryland golden aster**, grows 1-2.5' tall on stout, silky-woolly stems from a low rosette of basal leaves. It prefers partial or full sun, and low-to-medium moisture, although it tolerates some drought once established. It has an upright habit with fibrous roots and short stolons. The plant is crowned from August to October with clusters of yellow daisy-like flowers. Each flower has bright yellow rays surrounding a center disk of tiny yellow florets.



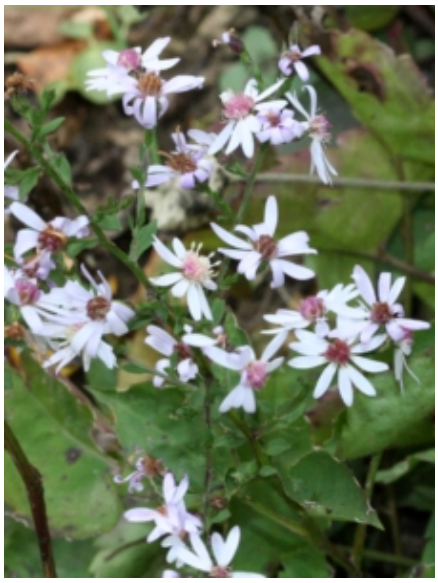
Maryland golden aster (Chrysopsis mariana) Photo: Fritzflohrreynolds CC BY-SA 3.0

Doellingeria umbellata, **flat-topped white aster**, grows to 7' tall. It prefers partial or full sun, and medium-to-high moisture. The upper leaf surface is medium to dark green, while the lower surface is pale green or whitish green. Flowers have white rays and yellow disk centers. Flat-topped aster is the primary host plant of the butterfly, Harris' Checkerspot (*Chlosyne harrisii*). American tree sparrows feed on the seeds, while the ruffed grouse feeds on both the leaves and seeds; deer browse on the foliage as well.

White wood aster (Eurybia divaricata) Missouri Botanical Garden, Plant Finder

Eurybia divaricata, **white wood aster,** grows to 3’ tall, **prefers partial or full shade,** and low-to-medium moisture. Distinctive leaves are heart-shaped, stalked, and coarsely toothed. Small but abundant flowers have white rays (infrequently pink or blue) and yellow-to-red center disks that are borne on dark burgundy, wiry stems. The flowers appear in flat-topped, terminal clusters in late summer to early fall. The plant has no serious insect or disease problems, although it is susceptible to powdery mildew. Aster wilt can also be an occasional problem, particularly if plants are grown in poorly-drained, clay soils. Good air circulation and some morning sun help reduce the incidence of foliar diseases. Propagate by division in spring.

Symphyotrichum concolor, **eastern silvery aster,** grows 2-3’ tall, and prefers full sun and low moisture. The oval leaves are downy-white or silvery, giving rise to the plant’s common name. Both the small leaves and the violet-blue flowers cling tightly to the long slender stems, giving a wand-like appearance. The plant blooms from September to October. It is browsed by deer.



Heart-leaved aster (Symphyotrichum cordifoleum) Photo: R.A. Nonenmacher, CC BY-SA 4.0

Symphyotrichum cordifolium, **blue wood or heart-leaved aster,** grows 3-5’ tall and 2-3’ wide. It is easily grown in average, dry-to-moist, well-drained soils in **full sun to part shade.** It also tolerates clay and drought, but can be sensitive to poorly-drained soil and poor air circulation. Leaves are sharply-toothed, with the lower ones being heart-shaped, hence the common name. Bloom color is blue-violet to lavender, with yellow centers that mature to purple-red. There are no serious pests or diseases; it is sometimes browsed by deer.

Hairy or Frost Aster (Symphyotrichum pilosum), Missouri Botanical Garden, Plant Finder

Symphyotrichum pilosum, **frost aster or hairy aster,** has hairy stems that appear to be covered with thick frost. Leaves are also hairy. The plant is easily grown in moist, well-drained soils in full sun to part shade (more shade in southern climates), and **can tolerate periodic flooding.** It grows 2-4' tall and wide. Flowers bloom from August to October. Each flower features white rays surrounded by a pale yellow center disk. Disk flowers turn reddish-purple with age. Stems may be pinched back in late spring to early summer to promote bushiness. Plants can spread aggressively by self-seeding. This plant is considered weedy in some areas of the U.S.

NATIVE INSECTS

Asters are pollinated by long-tongued bees, short-tongued bees, butterflies, and moths. Asters provide nectar for many different butterflies and moths, and are important late-season nectar sources for monarch butterflies migrating from the north. According to the National Wildlife Federation Native Plant Finder (by zip code), asters in the zip code area 22901 are caterpillar hosts to **106 species** of butterflies and moths. Check the link for your zip code. As Doug Tallamy teaches, using native plants in our suburban gardens creates a simplified vestige of the richly diverse ecosystem that once existed. Most insect herbivores can only eat plants with which they share an evolutionary history.

DISEASES

Foliar rust and powdery mildew are limiting factors to growing asters successfully. Both diseases are debilitating to plant health and disfiguring to leaves and plant habits. Rust diseases produce reddish, orange, or brown pustules on the undersides of leaves and along stems of the entire plant. Rust fungi rarely kill infected plants because the fungi need living plants to survive; however, rust infections diminish the ornamental display by reducing flower production and weakening the plants. Recommendations for reducing or eliminating foliar diseases include: choosing disease-resistant plants, improving air circulation by providing good spacing between plants, thinning out one-third of the stems, and minimizing overhead irrigation.

GARDEN TRIALS (EVALUATION STUDIES)

In 2003-2009, Richard Hawke, Plant Evaluation Manager of the Chicago Botanic Garden, conducted a comparative trial on 119 different asters including species, cultivars, and hybrids of native and nonnative asters. While the typical evaluation period for perennials is four years, the average evaluation period for the asters in this trial was six years. Performance ratings are based on flower production, plant health, habit quality (such as uprightness, compactness, "legginess"), and winter hardiness. Although this study is now about 10 years old, and the setting was not representative of Virginia growing conditions, the clear winners among fall bloomers were several American native species. Hawke's best overall performer was **aromatic aster** (*Symphyotrichum oblongifolium)*. This aster is native to parts of eastern and central U.S., including Virginia. With sky-blue flowers on stiff 1-3′ stems, it flowers prolifically into October, or even into November. The cultivar 'Raydon's Favorite' was a top performer. Its billowy habit is well-suited to mass plantings and naturalizing.

Aromatic aster outperformed the familiar, often-recommended species, **New England** aster (*Symphotrichum novae-angliae*). The **New England aster was more susceptible to powdery mildew** than was aromatic aster, and its habit was leggier. The popular dwarf New England aster cultivar 'Purple Dome' often had browned-out leaves and bare lower stalks. The great virtue of New England aster and its cultivars is the greater range of colors, from purple through pink to white, while aromatic aster blooms only sky blue.

Heath aster *(Symphyotrichum ericoides)* is a bushy, somewhat compact plant with many-branched stems, typically growing 1-3′ tall. In late September or early October, this low plant is covered in with a fluffy carpet of flowers that can cloak the ground or cascade over a wall. Hawke's favorite cultivar from the trial was **'Snow Flurry', which grows only 4-6" tall but up to 4' wide,** with a blanket of small white flowers. The cultivar is disease-free and **tolerant of dry conditions.**

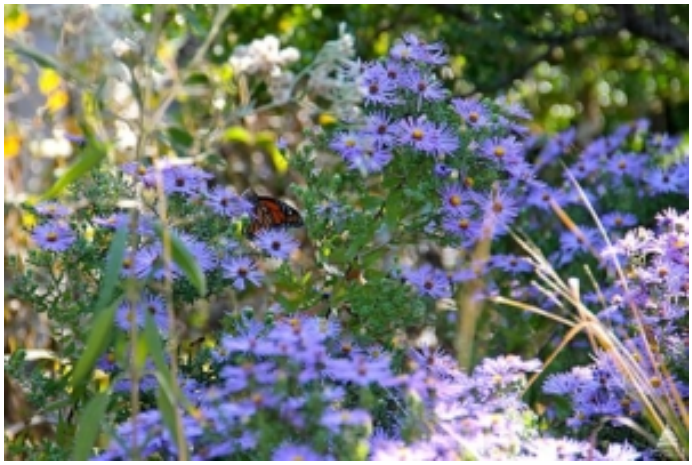
Though most asters need full sun, one standout species in the trial did particularly well in **dappled shade. White wood aster** (*Eurybia divaricata*), an aster native to the Piedmont, is described above.

This article highlights just a few top performers from the trial. Refer to this link for a full description of the study details and the results published by the Chicago Botanic Garden in 2013.

MT. CUBA RESEARCH CENTER TRIALS

Aster trials were held from 2003-2006 at the Mt. Cuba Research Center in Hockessin, Delaware, about 30 minutes from the University of Delaware. In this study, 56 taxa of asters were considered. The results are similar to those at Chicago, with aromatic aster, *S. oblongifolium* 'October Skies' performing fourth best. The top performer was a smooth aster, *S. laeve* 'Bluebird', followed by a prairie aster, *S. turbinellum*, and a calico aster, *S. lateriflorum* 'Lovely'. Two asters native to the Piedmont performed well: flat-topped white aster, *Doellingera umbellata,* and white wood aster, *Eurybia divaricata* 'Raiche'. For a study description and full list of results, see this link.

AROMATIC ASTER



Aromatic Aster (Symphyotrichum oblongifolium) US Capitol, Flickr2Commons

I am going to discuss aromatic aster (*Symphyotrichum oblongifolium*) in more detail because it is native to parts of Virginia, was the top-performing aster in the Chicago Botanic Garden trials, performed well in the Mount Cuba trials, and is relatively unpalatable to deer, whereas many other asters are frequently browsed. Growing 1-3' tall and wide, its rigid stems are much-branched from the base. Its oblong, toothless, blue-green leaves are fragrant when crushed. Both leaves and stems are sparsely covered with short hairs.

Aromatic purple to lavender-blue flowers with yellow centers create dazzling purple mounds in the fall. The blooms make good cut flowers, and are attractive to butterflies. The plant is easily grown in average, dry-to-medium, well-drained soil in full sun, but it also does well in sandy or clay soils, and can withstand drought. It slowly colonizes by stolons, and regular thinning can help control its spread. The plant may open up if it gets too top heavy so it is a good idea to prune it back by no more than half by mid-June. Some support may be needed for taller plants since stems may tend to splay apart in autumn from the weight of the bloom. After it goes dormant, wait to cut back to the basal rosette in late fall, early winter.

SWAMP ASTER

Swamp aster (Symphyotrichum puniceum) Photo: Ryan Hodnett, CC BY-SA 4.0

Although many asters like drier conditions, **swamp aster or purple-stemmed aster** (*Symphyotrichum puniceum*) is a candidate for **wet areas or for rain gardens,** which is the reason it's being highlighted in this article. Native to the eastern U.S., including Virginia, it is easily grown in average, moist-to-wet soil in full sun. The typical form has bristly, purplish stems and toothed, glossy, lance-shaped leaves. Bloom time is August-November with many light-violet or violet-blue rays surrounding yellow centers. The flowers are attractive to butterflies. This aster is a stout plant growing 4-8′ tall. It resembles a large and lighter-colored New England aster (*S. novae-angleae*). It easily self-seeds.

STRAIGHT SPECIES VS. CULTIVARS AS POLLINATOR PLANTS

In her studies on pollinator attractiveness at the University of Vermont, **Dr. Annie White** compared the New England aster, *S. novae-angliae* 'Andenken an Alma Pötschke' with the species.

> *The New England asters that I studied showed one of the largest differences that I saw between the native and the cultivar 'Alma Potschke'—like 20 times more pollinators on the natives (straight species) than on the cultivars. That was one that really surprised me because the flowers are very similar morphologically, the same size, and they were blooming at exactly the same time. They just had a color difference. (The 'Alma Potschke' is a bright rose pink with yellow center disks.)*

In a similar trial by Penn State, the straight species New England aster (*S. novae-angliae*) had three times more pollinator visits than the New England aster cultivar 'Purple Dome.'

SUMMARY

Many different species of native asters add color to the fall garden, and prolong the availability of pollen and nectar late into the season. Although many asters prefer dry-to-medium moisture conditions in full sun, there are options for dry, shady spots, or for wet areas of the landscape as well. There are also plenty of choices in height, habit, and color. Rust and powdery mildew can mar an aster's beauty, so be sure to look for asters that are more resistant to these diseases. Add this low-maintenance native plant to your garden, and fall will be even more beautiful. Your late season garden will also be buzzing and whirring with life!

SOURCES

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"Symphyotrichum cordifolium (Blue Wood or Heart-leaved Aster)," Master Gardeners of Northern Virginia, https://mgnv.org/plants/perennials/symphiotrichum-cordifolium-blue-wood-or-heart-leaved-aster/

Feature Photo: Aromatic aster (*Symphyotrichum oblongifolium)*, Dr. Thomas G. Barnes, U.S. Fish and Wildlife Service, Public Domain

Upcoming Events

By Susan Martin | August 2020-Vol.6 No.8

Heartflame Garden Open Day
Friday, August 7
6:00-8:30 pm

Heartflame Garden is a private garden located at 650 Sandy Bottom Road near Elkton, Virginia, adjacent to Shenandoah National Park. It is a lovely three-season display garden with about two acres of cultivated gardens and another four acres of rolling hills and streams to explore. The garden is open by appointment, and also offers "open" days when an appointment is not required. Check this link for more information, including contact information.

FREE FRIDAY TALKS NORTHERN VIRGINIA MASTER GARDENERS
Live Zoom Presentations in August, 10:00-11:30 AM

August 7, Fall and Winter Vegetable Gardening
August 14, Managing Wildlife in the Urban Home Landscape
August 21, Native Grasses, Sedges, and Rushes for the Home Landscape
August 28, Fall Lawn Care

For **Upcoming Live Webinars on Zoom**, see this link: https://mgnv.org/events/

For **Recorded Past Webinars**, see this link:
https://mgnv.org/reading-room/master-gardener-virtual-classroom/.

These recordings are from the Master Gardener Virtual Classroom series and include a great variety of topics under three different headings: Best Management Practices, Sustainable Landscaping, and Urban Agriculture.

New Directions in American Landscaping (NDAL) Webinars
Cosponsored by the Lady Bird Johnson Wildflower Center and
Wild Ones – Native Plants, Natural Landscapes

See this link for more information and to **REGISTER**.

Wednesday, August 5, 1:00- 4:30 PM EST, Cost $74
Cross Pollination – 3 Parts

Part 1: Doug's Place: Plants and Animals in Concert (1:00 – 2:15 PM EST)
Douglas Tallamy, Ph.D.

Part 2: Living in a Garden Ecology Lab (2:30 – 3:45 PM EST)
Larry Weaner, FAPLD

Part 3: Panel (4:00 – 4:30 PM EST)
Doug Tallamy and Larry Weaner

Thursday, August 6, 1:00 – 2:30 PM EST, Cost $48

A Grassland Restoration Tale of Weeds, Wildlife & Renewal
Jenna Webster

Tuesday, August 11, 1:00 – 2:30 PM EST, Cost $48
Native Annuals: An Underutilized Landscape Resource
Ethan Dropkin, MLA

Wednesday, August 12, 1:00 – 2:30 PM EST, Cost $48
Genetic Variation and Plant Design: Not All Coral Bells Are Created Equal
Ian Caton

Thursday, August 13, 1:00 – 4:30 PM EST, Cost $74
Seed to Landscape- 3 Parts

Part I: Prairies (1:00 – 2:15 PM EST)
Marc Pastorek

Part 2: Woodlands (2:30 – 3:45 PM EST)
Ian Caton

Part 3: Panel (4:00 – 4:30 PM EST)
Marc Pastorek and Ian Caton

Tuesday, August 18, 1:00 – 2:30 PM EST, Cost $48
Organic Planting and Management: Glenstone Museum
Mark Partain

The Nature Foundation at Wintergreen (TNFW)

A native plant list can be found on The Nature Foundation at Wintergreen website and orders placed via email to director@twnf.org. The greenhouse continues to operate on Thursdays and Fridays for plant pick-up.

Blue Ridge PRISM
Partnership for Invasive Species Management

FALL WORKSHOPS VIA ZOOM
(Cost is $10 per person)

Tuesday, September 29 (1:00 – 4:00pm) – REGISTER HERE
Wednesday, October 7 (1:00 – 4:00pm) – REGISTER HERE
Thursday, October 22 (1:00 – 4:00pm) – REGISTER HERE

Virginia Cooperative Extension Video Library

VCE offers a **variety of videos** on topics geared to both beginner and more advanced gardeners. Examples of topics include:

Cut Flowers in the Home Garden
Container Gardening with Vegetables
Cedar Apple Rust
Common Diseases in the Home Garden

Good Bugs, Bad Bugs
Late Blight on Tomatoes

For these and many more videos that address specific topics or those of more general interest, see this link.

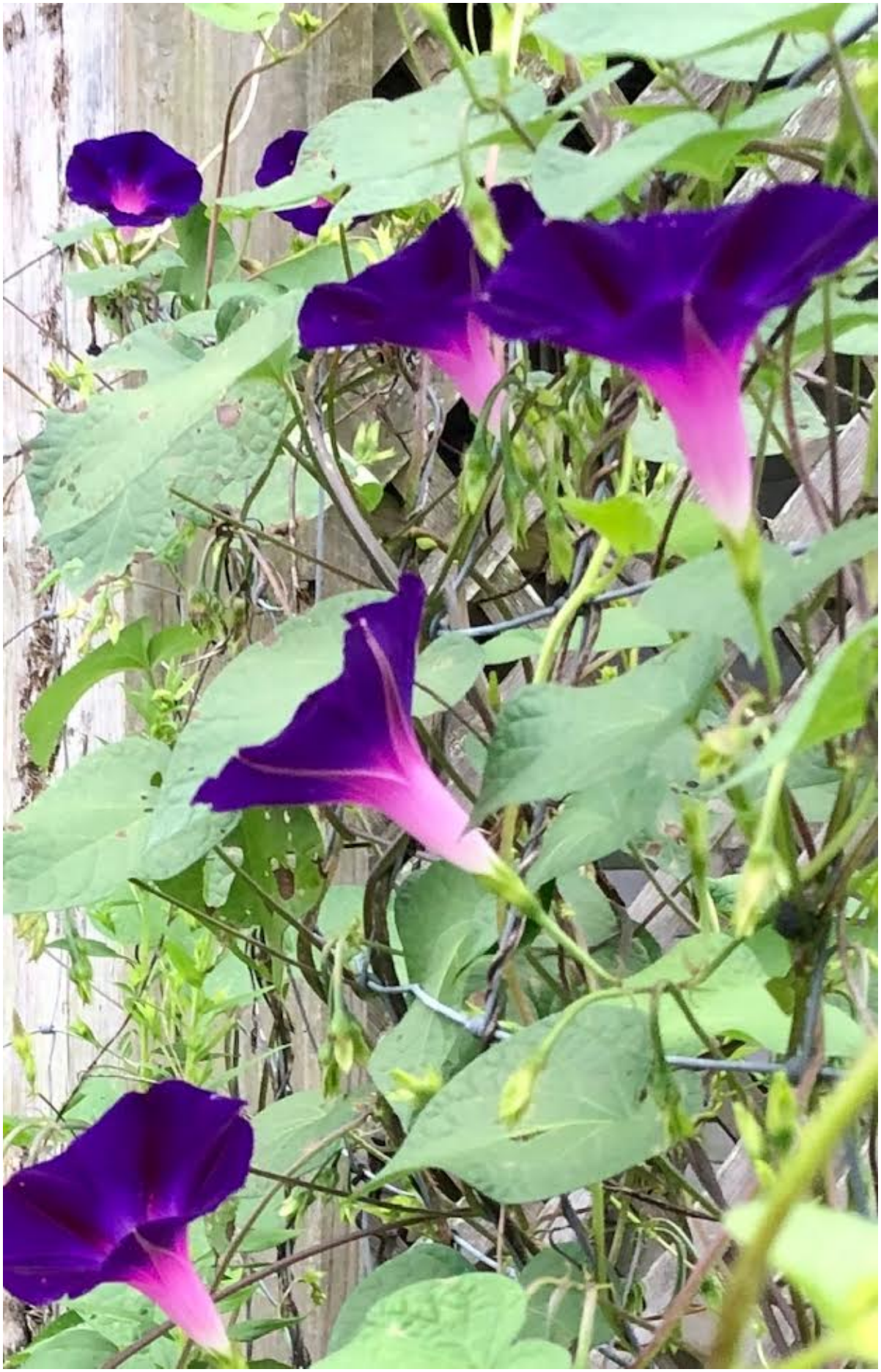
Generation Next: Legacy Planning Webinar Series
Virginia Forest Landowner Education Program
Virginia Cooperative Extension and the Virginia Department of Forestry
September 16, 17, 23, and 24
3:00-4:30 PM

If you own a woodland, you have a legacy worth passing on. Learn how to keep your woodland: Intact, In forest, In family. Speakers include legal and financial experts experienced in estate planning as well as natural resource professionals and landowners. This is a **live Zoom webinar;** see the link for more information and to **Register.** Registration will close the first week of September. Cost $40 per family.

CANCELLED: Charlottesville Area Tree Stewards Fall Tree Sale 2020
Saturday October 10, 2020
See this link.

August in the Ornamental Garden

By Cathy Caldwell | August 2020-Vol.6 No.8



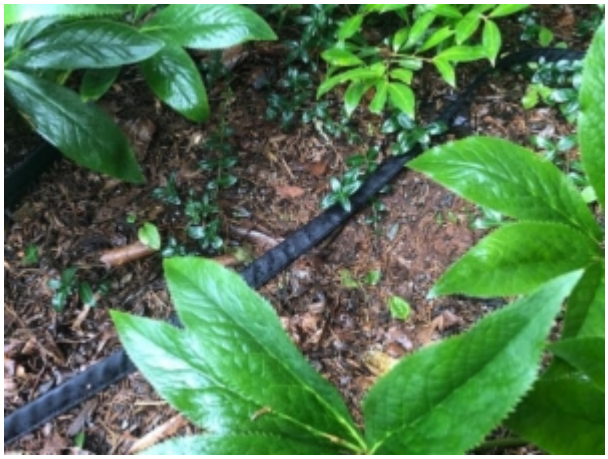
The record-breaking heat of July, coupled with minimal rain, has about done in my garden, not to mention its gardener. My ornamentals are either sunburned, freckled with holes from chewing insects, or appear to be in some sort of permanent swoon. Will August offer some relief? Historically, the first half of August has been much like July. Unfortunately, weather extremes have become the new norm, so we'd best prepare for any and all of them.

Are my plants really sunburned? Well, extreme heat can cause plenty of damage. To read more about this and to look at photos of a variety of plants impacted by heat stress and drought, go to "Scorch, Sunburn and Heat Stress," Mo.Botanical Garden. What might appear to be a disease or pest could actually be the result of extreme heat and drought.

As you plan your August tasks, be sure to start with Monthly Gardening Tips – August, Gardening Resources, PMG.

Watering has probably been your primary activity lately, and August may be no different. Rationing water among my plants is a daily dilemma, as it is for many of us whose water is supplied by a well. My question of the morning is — which plants look worst? Actually, newly-planted shrubs and trees must come first, of course, but how do I decide between the beds near my front door, the borders in the back, and my cutting garden? Or between my edibles and my ornamentals? Setting a schedule may help; try to focus on one area per day. But containers are another matter; they need water every day. If the hot, dry weather continues into August, you may need to water established plants. If so, soak shrubs with enough water to moisten the soil to a depth of 8-10 inches, if possible.

In past summers, watering was rarely necesssary, and mostly only for the recently-planted investments, like shrubs and trees. But now I have a new investment — **soaker hoses**. They not only use less water, they put it right where it's needed. However, trying to arrange them effectively in my curvy ornamental beds has been a learning experience. And I've discovered that you can't just cover the hoses with mulch and forget them. Periodically, the output of soaker hoses needs to be checked to make sure they haven't gotten plugged up by calcium deposits, small grains of sand, or other debris. Plus, some well water contains a bacteria that feeds on the iron in the water. This bacterial iron can, over time, create a slime that severely restricts the flow of soaker hoses. Even if you have installed a water softener, it's probably only processing your indoor water. Read more about this problem in "Silence of the Soaker Hoses," Mich.St.Extension.



Arranging the soaker hose. Photo: Cathy Caldwell

Here's the rest of the **To-Do List**:

- **Stay on top of routine maintenance chores** such as weeding and watering. Did I mention watering?
- **Add more mulch,** especially around plants that look stressed.
- **Monitor plants for diseases and pests.**

- Be on the lookout for **lace bugs** on rhododendrons and azaleas, which can also be bothered by **spider mites**. I've been trying to figure out if it was one of these insects that just recently attacked the newest leaves on my rhododendrons. However, lace bugs and mites cause similar damage — tiny spots or "stippling" — so it's difficult to be certain which pest you're dealing with. For guidance on how to distinguish between the damage caused by these two, check here: Lace Bugs/Va.Coop.Ext.. For more detail about common pests of rhododendrons, see NC State Ext. Pests of Rhododendron.

Spider Mite damage on holly (left); normal holly on right. Clemson University – USDA Cooperative Extension Slide Series , Bugwood.org. CC BY 3.0

- I recently learned that the population of **two-spotted spider mites** — a very common type which attacks a wide range of plants — increases as temperatures rise, so keep an eye out for these tiny mites if our hot weather continues. Here's how to scout for two-spotted spider mites in your garden: "Scout for Two-Spotted Spider Mites," N.C.State Entomology. But do **NOT use pesticides** when you find spider mites because the use of foliar insecticides in hot, dry weather can actually *cause* or *increase* spider mite outbreaks by killing the beneficial insects that feed on the mites. Be aware that fungicides can eliminate another natural enemy — a fungus that attacks spider mites following short periods of cool, damp weather. Your best defense is heavy rain (yes, please) or a strong spray from a hose, which can knock spider mites off a plant. Try the water spray method for several days in a row. Read more here: "Mites Found on Flowers and

Adult two-spotted spider mites. Photo: Frank Peairs, Colo.St.Univ. Bugwood.org, CC BY 3.0

Foliage," NC State Ext., Spider Mites in Home Gardens/Univ.of Minn.Ext. and "Twospotted Spider Mites on Landscape Plants," NC State Ext.

Azalea Lace Bugs. Photo: Jim Baker, North Carolina State Univ., Bugwood.org, CC BY NC 3.0

Another pest to watch for is the **azalea lace bug**; its population can get quite high in August and September. If only a few lace bugs and little or no damage is observed, use the same "strong stream of water" technique that's recommended for spider mites. Repeated applications of insecticidal soaps or horticultural oils are also effective against large infestations, but early spring is the best

time to control lace bugs, so make a note to monitor any infested plants next spring.

- **Deadhead annuals and perennials**. Deadheading not only improves the appearance of plants but also encourages some species such as coneflower, garden phlox, and salvia to continue blooming. Keep in mind that some dried flower heads on plants such as tall sedum, globe thistle, astilbe, and coneflower can look attractive throughout fall and winter, so you might want to leave them in place.
- **Tidy up daylilies** by removing yellowed or dried flower stalks all the way to the ground and all browned or yellowed foliage. Cutting the spent flower stalks back also triggers reblooming daylilies to produce more blossoms.
- **Trim away yellowed or tattered leaves** as well as any that have been heavily damaged by insects.
- **Cut back leggy or spent annuals** and give them some fertilizer to revitalize them. Within about two weeks, the annuals should produce fresh, new foliage and another round of blooms.

Fall Webworms. I've been seeing a lot of webworm nests lately. The webs are unsightly, but generally **do NOT pose a serious threat** to the health of the affected tree or shrub due to their timing — late in the season. Apparently if webworms spun their webs earlier in the season or were able to consume a larger portion of a tree's leaves, they would indeed be a threat. But the leaves consumed at this time of year have already made their contribution and will be dropping off soon anyway. Plus, webworms do not eat the buds of future leaves, so the growth on affected branches will look perfectly normal next spring.

Fall webworm nest. Photo: Cathy Caldwell

It's usually NOT necessary to do anything about webworms. But if you decide to prune off the webs, dispose of them in a way that will prevent the webworms from reproducing — such as garbage bags or burning. **Pesticides are not recommended**; the webs are more or less impervious and sprays are repelled off. It would be necessary to tear a hole in the webbing to access the inside. If you are close enough for this, pruning is a much better option. If you want to be educated and entertained at the same time, you'll want to read an article published by Michigan State Extension, wherein the author, Gretchen Voyle, explains the "**10-year-old boy" method** for dealing with webworms:

> "If fall webworms are on a small tree and you choose to remove it, the easiest way could be called "10-year- old boy biological control." Push a stick into the webbing and pull everything and everybody out of the tree and into a bucket of soapy water to soak for the day. Or the webby mass can be burned or buried.
>
> –The rise and fall of the fall webworm," Mich.St.Extension

To learn even more about webworms, check out this article Mo.Botanical Garden/fall webworm.

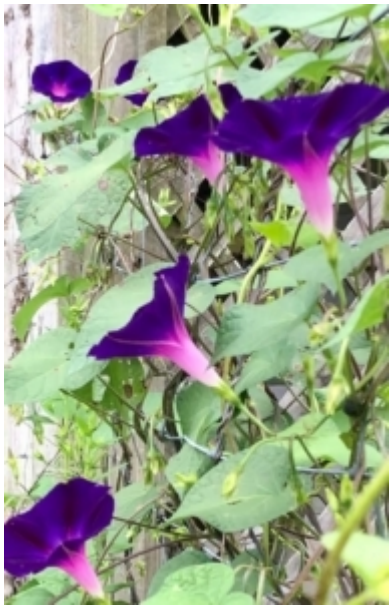
Blue mist flower (Conoclinium coelestinum), a native that usually starts blooming in August. Photo: Chris Evans, Univ. of Illinois, Bugwood.org, CC BY-NC 3.0

Take a break now and then to enjoy your garden. Some plants seem to persevere through extreme conditions, so focus on them. What's doing well in your garden? Do you need to replace some plants with more drought-tolerant ones? As summer wanes, take notes about which perennials will need dividing later (though iris can be divided now). And think ahead to the pleasures of the autumn garden.

SOURCES:

Spider Mites on Ornamentals/Purdue Extension

Control of Lace Bugs on Ornamental Plants, Univ. Ga.Ext



Morning Glory 'Kniola's Purple Black'
Photo: Cathy Caldwell

Featured photo: Kniola's Purple-Black Morning Glory, an heirloom discovered by Mr. Kniola at an abandoned farm in Indiana. I obtained seed from J.L. Hudson, Seedsman many years ago, but apparently he passed it on to Roberta Bailey, a seed saver. I have been able to find only one online source for this seed, Hudson Valley Seed/Kniola's Purple Morning Glory, which at present lists it as out-of-stock.