January 2022-Vol.8, No.1

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Winter Squash and Greens

By Erin Hall | January 2022-Vol.8, No.1

A few years ago my parents' garden produced a bumper crop of butternut squash, and my mother and I explored lots of new ways to prepare it. This recipe combines butternut squash with turnip greens and leeks that were also available in the late fall from the same garden and became a new favorite dinner. The presentation is great – the bottom half of the squash creates a perfect little bowl.

Stuffed Butternut Squash Bottoms

Adapted slightly from Deep Run Roots by Vivian Howard

Serves: 4

Notes: You will end up with a bit of extra squash that you can use for something else. Depending on how you plan to use it, it may make sense to go ahead and roast it *when you roast the parts you will use.* The original recipe called for sprinkling a bit of brown sugar in the squash bottoms and adding 2 teaspoons to the filling; if you like things sweeter, you may want to do so.

Photo courtesy of Michael Shveima & Erin Hall

Ingredients

- 2 butternut squash
- Salt
- Pepper
- 2 tablespoons olive oil, divided
- ½ pound sausage
- 1 cup leeks, sliced into ¼ inch half moons
- 2 cloves of garlic, minced
- 5 cups turnip greens, chopped
- ¼ teaspoon chili flakes
- ¼ cup apple cider
- ½ cup grated Fontina
- ¼ cup grated Parmigiano-Reggiano
- 2 tablespoons bread crumbs

Steps

1. Preheat your oven to 375° F and line a baking dish with foil.
2. Cut the necks off the squash and then split each piece down the middle, creating four “bowls” and then four neck pieces. Scoop the seeds out of the bottoms.
3. Place the four bottoms and *one* of the neck pieces on the baking sheet and rub each with a pinch of salt and a grind of pepper. Drizzle 1 tablespoon of olive oil on the pieces.
4. Roast squash for 50 minutes. The squash should develop some color but not be mushy.
5. Remove from oven and scoop the flesh out of the neck. Chop it up and set it aside. Increase the oven to 400° F.
6. In a large skillet, heat 1 teaspoon of olive oil over medium heat and add the sausage, working it into small pieces. Remove the sausage from the pan and set it aside.
7. Lower the heat and cook the leeks with a large pinch of salt until they begin to soften. Add the garlic and stir to combine.
8. Stir in the greens, another large pinch of salt and the chili flakes and cook until the greens have all started to wilt.
9. Add the apple cider and cook until the pan is dry.
10. Remove from the heat and stir in the reserved butternut flesh and Fontina. Taste the mixture and add salt and pepper to taste.
11. In a small bowl, stir together the Parm, bread crumbs, and remaining 2 teaspoons of olive oil.
12. Place the squash bottoms in a baking dish. Stuff with the sausage and greens, filling into the bottoms, and then top with the bread crumb mixture.
13. Bake for 15-20 minutes and serve warm.

Herbs That Taste and Smell Like Lemon

By Patsy Chadwick | January 2022-Vol.8, No.1

Most people share a deep appreciation for the bright, tangy taste and scent of lemons. Fortunately, many other plants have the same chemical compounds that give lemons their distinctive citrusy taste and aroma. The combinations and ratios of those compounds result in a range of unique floral notes and intensity of lemon flavor. Lemony-tasting herbs, such as the ones listed below, are considered important ingredients in a variety of cuisines as well as an excellent source of vitamins and minerals in the diet. Fortunately, they are easy to grow in the home garden from seeds, transplants, or cuttings.

Lemon Balm (*Melissa officinalis*) – This hardy perennial herb is a member of the mint family, but it is better behaved and doesn't spread as rampantly as true mint. The rounded leaves, which have a slightly crinkly surface and scalloped edges, have a delicate lemon flavor with a hint of mint. The aroma is subtle and not as strong as that of lemon verbena or lemon grass. The leaves may be used either fresh or dried. The leaves are commonly used to make tea or iced drinks and should be bruised or crushed to release their delicate flavor before steeping them in hot water. Freshly chopped leaves of this versatile herb may be added to fruit salads, vegetable dishes, and chicken, lamb, or pork dishes. They may also be incorporated into a compound butter and spread over fish.

Lemon balm. Photo: Pixabay

Lemon balm is very easy to grow in average, well-drained soil in full sun to part shade. Plant seeds or transplants in late spring after the last frost (late April to early May usually). Space about 2' apart. Cut the plant back after it finishes blooming to encourage new growth. The best flavor is in the tender new leaves. Older leaves may have a musty taste.

Lemon Basil (*Ocimum basilicum*) – This tender annual herb combines the essence of lemon with that of sweet basil. It can be used interchangeably in many recipes that call for regular sweet basil. If in doubt about substituting one for the other, ask yourself if the lemony flavor profile will add or detract from the dish you're making. When using fresh lemon basil leaves, crush or rub them to release the lemon scent. They provide a delicate tang when added to salads, sprinkled over cooked vegetables and pasta dishes, rubbed onto fish or chicken, or added to marinades, sauces, and salad dressings. Like any other basil, lemon basil does not stand up well to being cooked for a long time. It imparts flavor best if added at or near the end of the cooking time.

Plant this warm-season herb in part to full sun in spring after all danger of frost has passed. It requires fertile, well-drained soil that has warmed to at least 50° F. Several varieties of lemon basil are available, but the one reputed to have the best flavor is 'Mrs. Burns'.

Lemon Bee Balm (*Monarda citriodora*) – This annual or short-lived perennial, which is more likely to be found in the ornamental garden than in the herb garden, has unusual tuft-like whorled flower heads with purple bracts and attracts lots of bees and butterflies. This plant is also called horsemint, purple horsemint, and lemon horsemint, among other things, which can be confusing. Some references also refer to this plant as lemon mint, but do not confuse it with *Mentha piperita*, which is also called lemon mint and is a member of the peppermint family. When the leaves of lemon bee balm are rubbed or crushed, they emit a distinctive citrusy or lemony aroma and work well when minced and added to salads and fruit jellies. The leaves also make a flavorful citrusy tea and may be used either fresh or dried.

Lemon bee balm. Photo: Missouri Botanical Garden PlantFinder

To grow lemon bee balm, rake the seeds into loose soil either in early spring or fall in part to full sun. Provide supplemental water in spring if the rains are sparse. Once

established, this plant will reseed itself and can create a large colony if conditions are favorable.

Lemongrass (*Cymbopogon citratus*) – This herb is a tropical grass that forms large clumps of fibrous, sharp-edged leaves. It has a fresh, tart, light lemon flavor with peppery notes and is used in soups, curries, stir fries, teas, braising liquids, vinaigrettes, and marinades. It pairs well with ginger and coconut milk and is commonly used in Vietnamese and Thai cuisine. Much of the plant's flavor is concentrated in the bottom 3 or 4 inches of the stalk. To process lemongrass for a recipe, remove the tough outer layers of the stalk and bruise, crush, or chop the remaining stalk to release the flavorful citrusy oils. The flavor of lemongrass intensifies the longer it is cooked. If you prefer a lighter, fresher flavor, add lemongrass near the end of the cooking time.

Plant lemongrass from seed or from stalk cuttings after the last frost in spring. It prefers full sun, high humidity, and moist but well-drained soil that is high in organic content worked down to about 4" to 6" deep. The plant can develop into a large ornamental grass measuring 5' tall and 4' wide in USDA zones 8 to 12. Since it is not hardy in our Zone 7, it must be planted from seed or cuttings in spring after all danger of frost has passed. It may also be potted and stored indoors over winter.

Lemon Mint (*Mentha x piperita* 'Citrata') – A member of the peppermint family, lemon mint has a delicate lemon flavor. Use the aromatic leaves to make tea or a marinade for chicken or fish. They may also be used to flavor baked foods and jams. The leaves have scalloped edges similar to those of lemon balm, so don't confuse the two plants.

Lemon mint. Photo: Missouri Botanical Garden PlantFinder

Plant lemon mint seeds in spring after the threat of frost has passed. Sow the seeds in moist but well-drained soil in part to full sun. This plant grows about 16" tall and is hardy to our area of Virginia (USDA Zone 7). Harvest the leaves up until the plant blooms. At that point, cut the plant back to stimulate new growth. Like any other mint, this one can spread rapidly by underground runners. So, keep an eye on it to prevent it from taking over your garden. Better yet, consider growing it in a container.

Lemon Thyme *(Thymus x citriodorus)* – An evergreen perennial herb, lemon thyme is a low-growing (6 to 10" tall), drought-tolerant subshrub. The small, pointed leaves of some lemon thyme cultivars are variegated and edged in gold or silver. Like regular thyme, lemon thyme leaves contribute a resinous flavor to dishes but add a pronounced lemon flavor as well when bruised. Substitute lemon thyme in most recipes that call for regular thyme, lemon juice, or lemon zest. It is particularly tasty as a flavoring for grilled fish.

Lemon thyme (variegated variety). Photo: Pat Chadwick

Plant lemon thyme in full sun in average, well-drained soil. In spring, prune it back after the first flush of new growth. When the plant blooms in summer, cut the stems back to encourage fresh new growth. Lemon thyme can be grown in containers very effectively.

Lemon Verbena (*Aloysia triphylla*) – Of all the lemony-scented herbs, lemon verbena is one of the most fragrant. The narrow, rough-textured leaves release an intense, fresh lemon aroma when gently rubbed but lack the tartness associated with lemons. The leaves are generally used in desserts, but they may also be used to flavor drinks and herbal tea or chopped very fine and used in marinades for fish and poultry. Steeped in warmed cream, lemon verbena makes a heavenly custard base for ice cream.

Lemon verbena. Photo: Missouri Botanical Garden PlantFinder

Plant this woody perennial in full sun and moist soil after the last frost in spring. It grows about 2' to 4' tall. Pinch or cut back the tips of the young shoots to stimulate a bushier habit and more foliage. Fertilize during the growing season with fish emulsion. Because it is not hardy in Zone 7, strip the leaves from the plant before frost and dry or freeze them for use later. Dried leaves will hold their aroma for up to a year.

Sorrel (*Rumex* species) – Depending on which source you use, this tart, slightly sour-tasting perennial plant is variously described as an herb, a salad green, or a perennial vegetable. Many varieties of sorrel exist, but the variety typically grown is **common sorrel** (*Rumex acetosa*), which has long, arrow-shaped leaves. It is also called lemon sorrel or garden sorrel. Another commonly grown variety, **French sorrel** (*Rumex scutatus*), has small arrow-shaped leaves and a lower oxalic acid content than common sorrel and therefore a milder acidic flavor. Sorrel is at its most flavorful from early spring to mid-summer when it is least bitter. When used raw, it has a distinctly sharp, tangy lemon flavor and a little goes a long way. When cooked, the heat reduces the tartness, so a lot of it can be used in recipes. Sorrel soup and sorrel sauce, which works well with rich-tasting fish such as salmon, are two classic uses for this plant.

Common sorrel leaves. Photo: Pat Chadwick

In early spring, plant sorrel seeds in full sun and in soil with good drainage. Space the plants a foot or more apart. Once the plants are established, harvest the young leaves and either use them whole or chopped. Unlike the other plants described above, sorrel leaves do not need to be bruised or crushed to release their flavor. To keep the plant producing, remove all seed stalks as they emerge.

In conclusion, herbs that have a lemony taste add a vibrant, tangy grace note to many of our foods. Use the herbs at their peak of flavor, which is generally just before the plant blooms. Harvest the leaves in the mornings once the dew dries on the plant. That's when their oils are strongest and most flavorful. Depending on the herb and how you plan to use it, bruise or crush the leaves as necessary to release the aromatic oils.

Featured photo: Trio of lemony-tasting herbs. Photo: Pat Chadwick

SOURCES

Homegrown Herbs (Hartung, Tammi, 2011)

Herbs and Spices (Norman, Jill, 2002)

The Cook's Herb Garden (Cox, Jeff and Moine, Marie-Pierre, 2010)

Growing Sorrel in Home Gardens, University of Minnesota Extension, Vincent Fritz (Extension Horticulturist) and Cindy Tong (Post-Harvest Horticulturist)

Lemon Balm: An Herb Society of America Guide

Lemongrass, *Cymbopogon* Spp., University of Wisconsin-Madison Extension, Susan Mahr

Lemon-Scented Plants, University of Wisconsin-Madison Extension, Susan Mahr

Lemon Verbena Fact Sheet, Purdue University

January in the Ornamental Garden

By Cathy Caldwell | January 2022-Vol.8, No.1

Is there really anything to do in the ornamental garden in January? Well, there ARE a few things. Start by reviewing the Monthly Gardening Tips that you'll find under Gardening Resources.

Keep an eye on your trees and shrubs. This is a good time to cut down injured or dying trees, but only if you were able to observe the injury or death BEFORE winter began. Watch for winter and snow damage so you're ready to prune when spring growth begins. Many plants have protective mechanisms that may appear to be damage, but are not. See more about this and other hazards of winter in this article, "Managing Winter Injury to Trees and Shrubs," Va.Coop.Ext.Pub.No.426-500.

Evergreen shrubs and trees are susceptible to damage from heavy snow and ice. Despite our changing climate, snow and ice are still a possibility. If winter precipitation is in the weather forecast, you may want to provide some protection, especially for the evergreens most prone to damage, including arborvitae, boxwood, cedars and junipers, hollies, leyland cypress, and evergreen magnolias. Heavy snow and ice storms cause damage by bending and breaking branches.

A blue spruce is tied to protect against branch breakage by heavy snow and ice. Photo courtesy of Kansas State Research & Extension.

Do some advance preparation if a heavy accumulation of snow is predicted. You can protect smaller upright evergreens like arborvitae and juniper by wrapping or tying together the branches. For details and instructions, see Advance Preparations in December Tips for the Ornamental Garden 2020.

If your evergreens are weighed down with snow, removal is an option, but *read this paragraph first.* "Two causes of damage by snow and ice are **weight** and **careless snow removal."** Relf and Appleton, "Managing Winter Injury to Trees and Shrubs," Va.Coop.Ext.Pub. 426-500. If a large load of snow is collecting on your shrubs, you may want to remove it, **especially if more freezing weather or wind is predicted**. Some experts advise **against** removing snow or ice, but if it seems called for, you should remove it ***gently.*** Shaking is not recommended. Always **sweep upward with a broom** to lift snow off. **When the branches are frozen and brittle, avoid disturbing them**. Wait until a warmer day or until ice naturally melts away.

Survey your perennials for frost-heaving. The freeze-thaw cycle can push the crowns of perennials or other shallow-rooted plants up out of the ground, especially if your beds are not mulched. If a plant has been heaved from the ground, its roots are exposed to wind desiccation. Replant it as soon as the soil thaws. If the root system is small, you may be able to tamp it back into the soil with your fingers. But if that's not possible, you'll need to dig it up, retaining as much of the root system as possible, and replant it. Cover with mulch or evergreen boughs to protect against more of this damaging heaving. Since our temperatures are rocketing between cold and surprisingly warm, frost-heaving will likely be more common than in the past. Take regular tours of your garden to keep an eye out for this.

Don't forget to water your fall transplants. Fall is a great time to plant trees, shrubs and perennials, and that's just what I did. If you did also, don't forget that they may need to be watered during dry spells. If we have an extreme cold spell, evergreen shrubs and trees could be damaged by desiccation. Since we had a relatively dry fall and a very dry December, a round of severe cold weather could cut off the supply of water to the roots, which can lead to desiccation of the leaves or needles. How to prevent this? Here's the advice from the Virginia Cooperative Extension:

Winter injury on a pine. Photo: Joseph O'Brien, USDA Forest Service, Bugwood.org

> ***If autumn rains have been insufficient, give plants a deep soaking that will supply water to the entire root system before the ground freezes. This practice is especially important for evergreens. Watering when there are warm days during January, February, and March is also important.***

—Managing Winter Injury to Trees and Shrubs, Pub.No. 426-500

Clean dust off houseplants regularly; this allows the plant to gather light more efficiently. Some experts advise dipping the foliage of small plants into tepid water to clean them. Plants with thick, shiny leaves — like Croton, Ficus, Peace Lily, and Bromeliads — should be cleaned with a damp sponge. Water should not be used to clean cacti, African violet leaves, and other plants with hairy leaves; instead, remove dust with a clean, small paintbrush.

Now kick back, and think about spring.

SOURCES:

Featured Photo: Cathy Caldwell

"The Effects of Cold Weather and Snow on Landscape Plants," culpeper.ext.vt.edu/successful-gardening-through-extension-newsletters

"Managing Winter Injury to Trees and Shrubs," Va.Coop.Ext. Pub. 426-500

"Growing Indoor Plants with Success," University of Georgia Extension

January in the Edible Garden

By Ralph Morini | January 2022-Vol.8, No.1

The beginning of the new calendar year is also a good time to begin thinking about the new gardening year. While we rest physically from the effort of last season, we can put some thought into how to change and improve on our practices to increase gardening success while hopefully reducing effort. In effect, work smarter, not harder. Here are some ideas that can help move us in that direction.

Plans

- Most gardeners know about the advisability of keeping a journal, but it is often a neglected practice. Keeping an accurate journal is a great new year's resolution. Key elements include:
    - A garden sketch, preferably reproducible.
    - Keep track of where specific crops are grown during the year. Use it to plan crop rotations which have a real benefit in reducing pest and disease risk.
    - Document companion planting ideas to increase output, reduce pest problems, and build soil health.
    - Note the dates when specific diseases and pests arrive and/or depart to let you know when to take action to manage them.

Excellent resource for Integrated Pest Management in the Mid-Atlantic

  - Note the varieties of vegetables and fruits planted and what pests or diseases attack them. Next year look for varieties that resist the problem pests and study appropriate pest control measures to counter them. A good resource for identifying pests and treating them is the Penn State Extension's publication *Vegetable Integrated Pest Management With an Emphasis on Biocontrol.*
  - Put together a timetable for seed starting, transplanting, and converting from one crop to another, starting with cool weather vegetables in spring through cover crop planting in the fall. Find guidance on when to plant and harvest popular vegetable crops in the VCE publication *Virginia's Home Garden Vegetable Planting Guide*.

- The new seed catalogs are out now, both online and hard copy. It is worth reviewing a few different providers to compare selection and prices while deciding what to plant in your precious garden space. Look for seed and plant varieties with good pest resistance. Maybe choose to grow something you've never grown before, which is a good learning experience, if not plain old fun. Check out the latest vegetable, fruit, and flowering perennial varieties at the All American

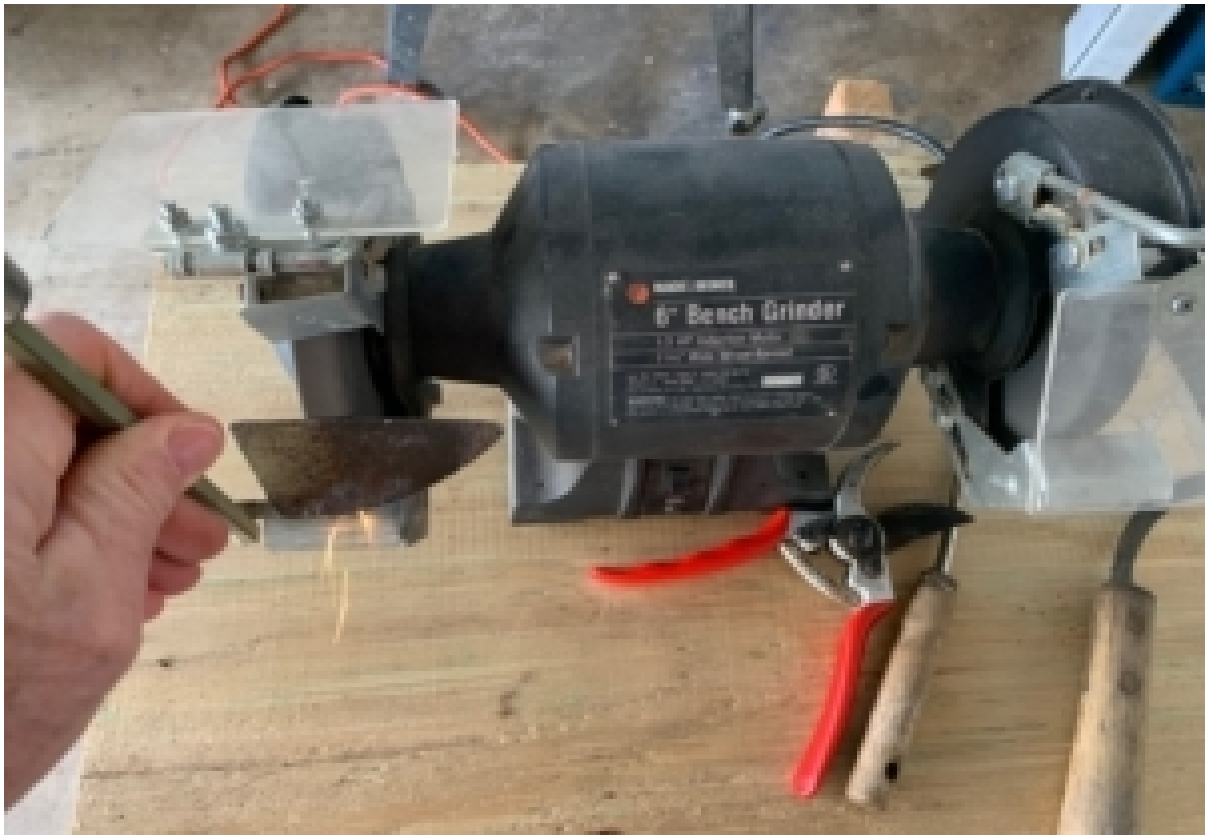
Selections website.

- If you are thinking of adding small fruits to the garden, review the VA Cooperative Extension publication Small Fruit in the Home Garden for helpful advice.
- Do some reading about best gardening practices. Study Integrated Pest Management (IPM) as a way to reduce chemical use. Learn about Regenerative Gardening practices that focus on naturally building healthy soils as the basis for healthy, nutritious crops. Review ways to add pollinator habitat to your landscape to create a healthy insect population and use beneficial insects to help keep pests under control. If you are looking for some reference books to advance your horticultural education, check out the article Books Every Gardener Should Have from the December 2020 issue of The Garden Shed. Learning new skills over the winter and putting them into practice in the coming season is a great way to become a better gardener.

If you are looking for some hands-on tasks...

Leaf filled compost bin: Photo R Morini

- While decomposition slows down as temperatures drop below 50 degrees F, it is a good idea to collect materials over the winter to start new compost batches in the spring. Stock your pile or compost bin with leaves, preferably chopped. If you need more “brown” (carbon-rich) materials for your batch, save newspapers, boxes and household paper not contaminated with cleaning fluids, tear them up, and add them in. Add kitchen fruit and vegetable scraps to the bottom of the pile during the winter, and rotate the pile every once in a while. In the spring, when green materials become more available, add them in to get to a volume of one to two times the amount of browns as greens, moisten everything so it is wet but not dripping, rotate it once or twice a week, and you should have beautiful compost in time for planting summer vegetables in May. For detailed advice on home composting review The Garden Shed’s article Backyard Composting with Practical Tips from the Pros.



Winter is a good time to sharpen gardening tools. Photo: Ralph Morini

- Winter is a good time to clean and sharpen garden and cutting tools. Clean them, rinse them in a 10% bleach solution and wipe dry. Oil cutting tools to protect their edges and maintain free movement. If you have a warm enough place to do it, wash and disinfect pots and planters the same way. It is great to enter spring with tools and pots ready to go.
- If you end up with a stack of plastic pots that you don’t need, recycle them. Some local nurseries will take them for their own or community reuse. Lowes has a chain-wide recycling program. Let’s keep plastic out of landfills!
- If you have older seeds that may have outlived their viability, it makes sense to test their germination rate. *The Garden Shed* article Good Seeds, Bad Seeds explains how to test seeds prior to planting.
- If you really want to grow something, create an indoor herb garden. The Garden Shed article Be Inspired With Indoor Herb Gardening is a good guide.

Other tasks:

Papa bluebird delivering caterpillar from garden to waiting fledgling: Photo Ralph Morini

- A key to minimum chemical gardening is to create the most diverse ecosystem you can in your yard and garden. Feeding the birds in winter is a good way to keep these helpful predators around for when they are needed. Get some tips on good bird feeder practice in the article Creating a Bird Friendly Garden from the February 2019 issue of *The Garden Shed*.
- If you have a natural Christmas tree, please recycle it. Albemarle County has a recycling program with multiple drop off sites. They convert the trees to mulch that is offered free to residents. This year's program details are on the county website.
- If you burn wood in your fireplace, and you compost the ashes or add them to the garden, remember that wood ash is alkaline. It can be used as an amendment but will raise the pH if added in quantity. Not all plants can tolerate alkaline soils. Some ornamentals — including lilac, weigela, pinks, and mock orange — and some vegetables — including spinach, beets, corn and cabbage — are exceptions. For more info, check the article Wood Ashes in the January 2017 issue of *The Garden Shed*.
- Aphids, spider mites, whiteflies, and other pests are winter houseplant nemeses. To minimize pest damage, keep new plants separate from plants moved indoors, remove dead/damaged foliage, and check plants regularly using a magnifier to watch for pests. Washing with soapy water and placing sticky-card fly traps around plants can help too. Detailed advice is found in the University of Minnesota Extension publication Managing Insects on Indoor Plants.

Sources:

"Plants Grown in Containers: Indoor Containers – Houseplants," N.C. State Ext.

New Piedmont Master Gardener Projects

By Ralph Morini | January 2022-Vol.8, No.1

The Piedmont Master Gardeners Association (PMG) is one of 60 Extension Master Gardener programs in Virginia, a part of the Virginia Cooperative Extension, associated with Virginia Tech and Virginia State Universities, our state's land grant universities. Master Gardeners are trained volunteer horticulture educators whose mission is to promote sustainable, research-based horticulture in the Charlottesville-Albemarle community. PMG sponsors a variety of projects and events, funded by the Piedmont Master Gardeners Association 501(c)(3) non-profit, individually and in cooperation with other local organizations.

The Organization's Work

PMG has been building a solid reputation in the community since our founding in 1989. The organization's work has always reflected the issues of the day. In recent years, as the association has grown and as environmental and social concerns have impacted both global and local communities, PMG has broadened its projects to address these topics more directly, within the scope of its horticultural education mission.

PMG 2019 30th Anniversary Program: Photo W Sublette

The effort gained momentum in a September 2019 event called *The Future of our Landscapes in a Changing Environment*, held in Charlottesville's Paramount Theater, to celebrate PMG's 30th anniversary. Strong community turnout for an excellent environmental program provided impetus to assess PMG's direction and consider new initiatives.

In February 2020, a participative program at a monthly member meeting demonstrated member support for increased emphasis on sustainable horticulture and food insecurity issues while working to diversify our audience and membership and reach underserved areas of the community.

A Strategic Planning committee, formed at about the same time, worked through a Covid-impacted 2020, communicating virtually with the membership, laying out goals to address the identified emphasis areas. By early 2021, PMG was able to reach out to the community to explore possible new projects that would meet plan goals. Despite initial uncertainty as to how things would develop, it quickly became apparent that the community, aware of PMG's prior work, welcomed our participation in a range of projects consistent with the new direction.

A few of these projects are summarized below.

Sustainability

Sustainability includes reducing chemical use, adding diversity and native plants to our environment, conserving water while managing runoff, and reducing solid waste generation. While most of the new projects are aimed at multiple goals, those below focus largely on sustainability:

PMG installed native plant sign outside PMG partner retailer

- PMG's **Community Information Rack project** which distributes and displays horticulture-based flyers at local garden centers, **allied with the Virginia Native Plant Society** in 2019 to promote native plants, urging partner retailers to stock more natives and make them more visible to customers. Covid delayed implementation, but this year as a partner in the Plant Virginia Natives campaign, PMG began providing the businesses with a package of promotional materials. It includes a banner that says: "Find Native Plants Here" (see photo), a new brochure for information racks titled "Why Plant Natives" and bright red "Virginia Native" stickers to place on native plants in their stock. By building awareness of the importance of native plants to ecosystems and their reduced maintenance requirements once established, the project aims to encourage both sellers and buyers to increase native plantings in our landscapes.

Habitat family parents with new landscaping

- A **partnership project with Habitat for Humanity of Greater Charlottesville** (Habitat) assists Habitat "Partner Families" with the landscaping of their new homes. The Partner Families are offered support and, if they choose to accept it, PMG volunteers meet with them to jointly work on landscape design and plant selection. Favorable pricing was established with a local garden center that has agreed to maintain an inventory of native shrubs and perennials. In addition, the **Charlottesville Area Tree Stewards** have joined the partnership and will provide a source for native trees and planting guidance. The meetings, involving the families in "planting day" and providing ongoing care and maintenance support provides PMG the chance to educate families on basic horticulture and the benefits of native plant ecology while contributing to the security and advancement of hard working lower income families. It is a satisfying project, bolstered by complementary alignment of Habitat and PMG mission and goals.
- Master Gardener volunteers have been working this year to put together two projects that will roll out in the spring of 2022, complementing our successful **Healthy Virginia Lawns** project**.** They will be called **Healthy Landscapes** and **Healthy Stormwater Management**. All three will provide assistance to homeowners and HOAs in planning sustainable landscapes and are a part of our conservation landscape efforts. They will include an on-site survey by trained volunteers, soil testing as appropriate, and a document to address the issue(s) at hand. While Healthy Virginia Lawns focuses on sustainable lawn management, the new projects will incorporate environmentally sensitive design, low impact development, non-invasive native and beneficial plants, and integrated pest management. The goal of the three projects is to create diverse landscapes that protect clean air and water, support wildlife including birds and pollinators, and provide a healthier, more attractive human environment.
- **PMG is developing a project with the Thomas Jefferson Planning District** to deliver

materials and workshops to promote composting of food and yard wastes. It will include home, community, and contract composting options as a means of reducing the volume of organic waste going to landfills and the resulting negative environmental impacts.

Food Insecurity

With food insecurity affecting 30% of area residents during the Covid crisis, PMG initiated several projects aimed at helping reduce it:

Share Your Harvest – Donation locations & information

Organization	Contact information	Days/Times to donate	Drop-off location	Restrictions
Thomas Jefferson Branch of the Blue Ridge Area Food Bank	Colleen Berger (434) 296-3663	Monday – Friday from 8:00 am – 4:00 pm.	1207 Harris St. Charlottesville, VA 22903	
Crozet United Methodist Grace Grocery Food Pantry	Jill Simpson (434) 823-4420 foodpantry@crozetunitedmethodist.org	Food bank is every other Monday; refer to website for specific Mondays each month. Drop off produce between 2:00 pm – 3:30 pm (before clients arrive). https://crozetunitedmethodist.org/grace-grocery/	1256 Crozet Ave. Crozet, VA 22932	
BF Yancey Community Food Pantry	Belinda Mills (434) 286-2558 bmills14@centurylink.net	Twice a month: 4th Friday of the month from 3:00 pm – 6:30 pm; 2nd Saturday of each month from 10:00 am – 12:30 pm. Call the day ahead of the scheduled food pantry date to make plans for drop off. Serves 70-80 families each month.	At the BF Yancey Community Center 7625 Porters Rd. Esmont, VA 22937	No okra or turnips
Antioch Baptist Church	Jack & Ruth Will (434) 906-0017	The 4th Saturday of every month between 10:30 am – 1:00 pm. Call to make arrangements to drop off food before clients arrive.	4422 Antioch Rd. Scottsville, VA 24590	
Scottsville Bread of Light Ministry (includes St. Anne's Episcopal Parish, Scottsville United Methodist, Scottsville Baptist, Scottsville Presbyterian, and St. George's Catholic Church)	Bill Hyson (434) 286-4062 bhyson@embarqmail.com	Pack and deliver on the 3rd Friday of each month between 1:00 pm – 2:30 pm & Saturday morning at 8:00 am. Contact Bill to make arrangements to drop off produce on Friday morning or even the prior Wednesday or Thursday.	At the Scottsville Community Center 300 Page St. Scottsville, VA 24590	

Share your harvest screen showing a partial list of local food pantries

- Recognizing that many gardeners produce more food than they can eat, the **Share Your Harvest** project encourages donations of extra produce to local food banks and food pantries. A tab on our website: pmgarchives.com, provides access to a list of emergency food providers that accept donations of local produce, including when and where to deliver it and how to prepare it. The site includes an interactive map to help gardeners locate donation sites, lists references dealing with food waste and related topics, and a reporting sheet to keep track of donations. The project went live in July so missed part of this year's growing season, but PMG is encouraging gardeners to plan an extra row next year to help the hungry.

PMG cover crop demonstration at IRC (International Rescue Committee) garden

- The **Community Garden Partners** project was started to support community gardens by providing many kinds of assistance from mentoring to gardening help. **Partnerships** were built with the **Bread and Roses group at Trinity Episcopal Church** (see feature image)**, Cultivate Charlottesville's new garden at CATEC,** several **International Rescue Committee (IRC**) gardens where recent refugees grow food for their own and market uses, and the garden at the **Yancey Community Center in Esmont** where volunteers grow food to support the local food bank.

L-R: Two volunteers and two Master Gardeners working in the Yancey Community Garden

PMG contributions have included arranging expert advice through the Virginia Cooperative Extension, helping improve soil by installing cover crops and sheet mulch plots and hands-on gardening alongside volunteers, basically teaching-by-doing. At an IRC garden, PMG planted native plants to stabilize a stream bank and built a rain capture system to provide a convenient water source for nearby growers. Gardeners love to garden and these projects allow hands-on gardening while staying true to our educational and food insecurity related goals.

Youth Gardening

PMG has been involved with the City Schoolyard Gardens after school programs for several years, but program changes caused us to initiate some new projects:

"How Seeds Work" class at Charllottesville Summer Recreation Program

- This summer **PMG partnered with the Charlottesville Parks and Recreation Department** to provide six weekly gardening programs at Clark, Greenbrier, and Jackson-Via Elementary schools. Activities included programs on how seeds work, plant anatomy, and terrarium design. Each finished up with planting and taking planted items home. There were also programs on soil, water, and preparing food from fresh produce, including home-made salsa which got rave reviews.
- Between the fall of 2021 and spring of 2022, we will **initiate programs at Mary Carr Greer, Stony Point and Crozet elementary schools** in Albemarle county:
    - At **Greer Elementary** PMG volunteers are working with teachers and first and third grade students to meet learning standards through hands-on activities in Greer's *living lab,* which includes a uniquely landscaped patio area with a variety of gardens, including a rain garden, a planned butterfly garden, and raised vegetable beds. The raised beds will be built and fenced as we work jointly with the school, the Building Goodness Foundation, and volunteer landscape architect and construction managers. Plans are drawn and construction cost estimates are in process. Serving the most diverse student population in Albemarle County, this project addresses our sustainability, diversity, education, and accessibility goals.
    - At **Crozet Elementary** School, PMG will help plan and support student involvement in relocating existing gardens due to a building expansion now underway. The work will involve rain, pollinator, and native plant gardens as well as a riparian buffer. It will begin in the spring.
    - **Stony Point Elementary** currently has an after school garden program run by a PTA parent. The school has a greenhouse, raised beds, pollinator, and native plant gardens, plus a courtyard Japanese garden with a waterfall and pond where invasive plants will be removed and replaced with natives. PMG's intention is to

support the program to enable it to involve more students while promoting our sustainability and education objectives.

Accessibility

Another PMG goal is to partner with local organizations serving groups that can benefit from participation in gardening activities:

Installing sheet mulch soil improvement for a pollinator garden at The Center at Belvedere

- The **Center at Belvedere** serves a senior clientele, many of whom have an interest in gardening. In its partnership with The Center, PMG will offer 8 events per year to interested participants. They will range from virtual and in-person presentations to educational events involving design, construction, maintenance, and education sessions in rose and pollinator gardens that Master Gardener volunteers are building. The pollinator garden will feature a 70/30 native/non-native plant population to illustrate how to create an ecologically productive

garden. A “pollinator gardens in pots” display for folks with small deck or patio spaces has been planted.

Master Gardeners (center) with 2 JABA clients planting sensory garden. Photo: JABA

- Our **Therapeutic Horticulture** project is a merger of related projects with several “helping” organizations including **On Our Own, Georgia’s Friends and a new site at the Jefferson Area Board for the Aging (JABA)** into a single umbrella project. The goal is to use horticulture to promote growth, healing, and improve participants’ quality of life while building environmental stewardship with an audience facing a variety of physical and mental challenges. For example, our team at JABA created a sensory garden with aging and disabled adults in a daycare setting. JABA representatives noted that participants were visibly affected as they enjoyed the outdoors, laughed, and reminisced during the meetings. This led to a nomination for a United Way “Caring for Community” award and participation in a JABA-UVA study on whether nature-based activities can improve the emotional, physical, and cognitive health of seniors. We hope to add more sites to this project over time.

A Positive Future

At PMG we think that these projects are both exciting and potentially significant contributors to improving the natural environment and social welfare of our community. Combined with our longer term projects, they provide a broad base of programs that support the love and science-based practice of horticulture throughout the region. We hope that readers agree, that you will be motivated to participate in these and similar activities in your local communities, and that this article has expanded your understanding of what Extension Master Gardener programs are all about. We invite your comments and insights.

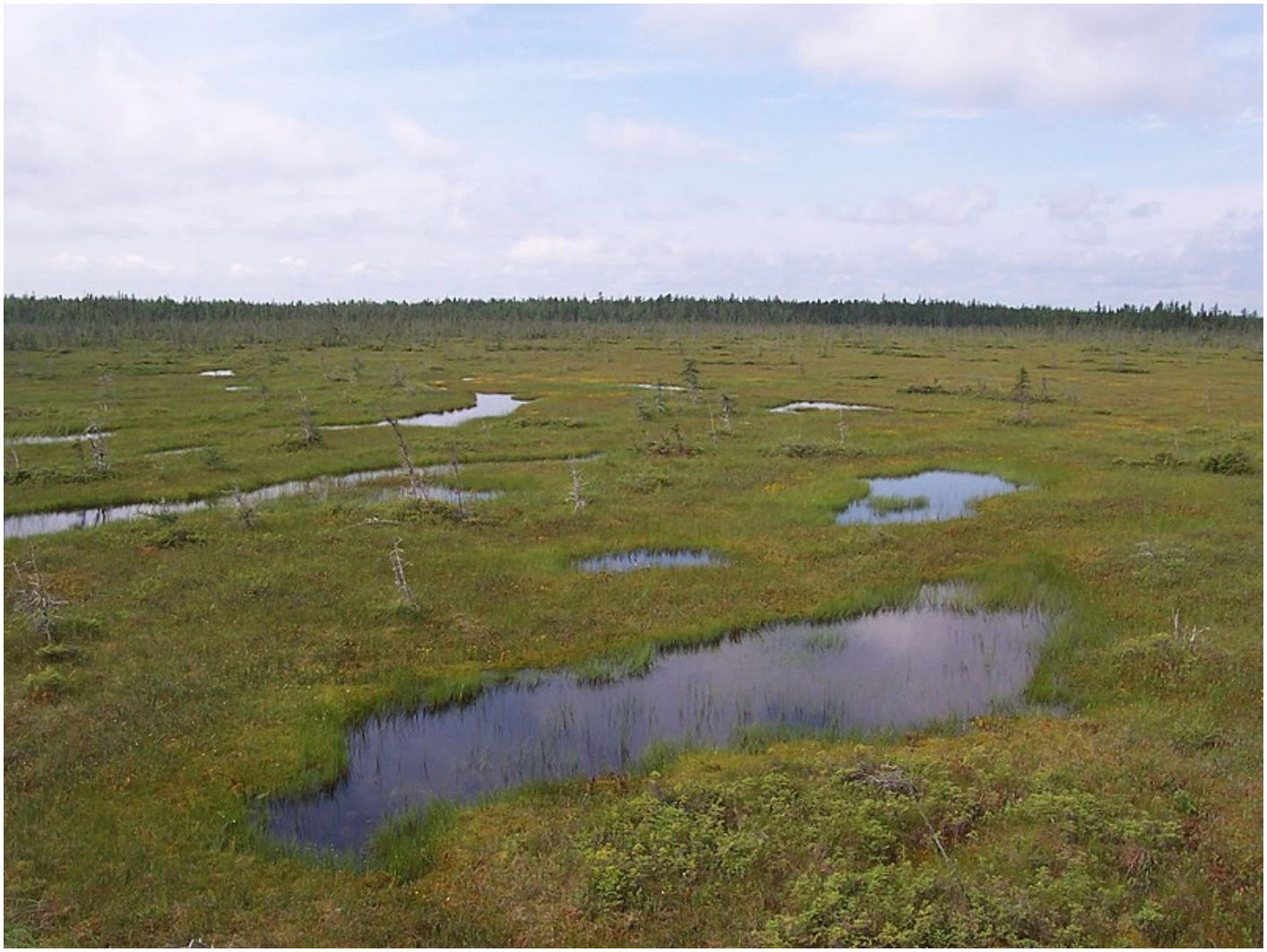
Photo credits: Uncredited photos submitted by various members of the Piedmont Master Gardeners and edited by W Sublette.

Should We Stop Using Peat?

By Cathy Caldwell | January 2022-Vol.8, No.1

A lot of peat is used in horticulture — as a soil amendment, in lawn patching, in seed starting, and in container gardening — but there's a growing controversy about it. I just checked my bag of potting soil, and sure enough, a primary ingredient was peat. It's all-natural and naturally organic, so what's the problem?

It took a bit of digging (no pun intended) to fully understand the issue. First, let's be clear on terms, of which I was woefully ignorant. Peat is the decomposed remains of moss from bogs; strictly speaking, it's not the growing moss itself. Peat is found *underneath* the growing moss, and this peat layer often goes very deep — several meters typically — and is of ancient provenance. Its use in horticulture began in the 1940s and 50s, and its air- and moisture-holding capacity makes it a highly effective growing medium for commercial producers and a very popular component of potting soil for home gardeners.



Sphagnum bog at Frontenac National Park, Quebec, Canada. Photo: Boreal, CC BY-SA 3.0

Where does peat come from? Peat comes from peat bogs, which are often referred to as peatlands. Peatlands are unique ecosystems that are rare on earth, covering only 3% of the Earth's surface. Some peatlands are found in Asia and in northern Europe, but in these regions, much of the peatland has been exploited and degraded due to human activities, including the use of peat for fuel, and more recently, due to fire. Most of the remaining unspoiled peatlands are in Canada, though there are a few in the northern United States. For us American gardeners, a key fact is that **virtually all of the peat moss sold in the United States comes from the vast sphagnum moss bogs of Canada**. Peat producers harvest the peat by first draining the bog and then extracting the peat with vacuuming machines. This extraction process is the heart of the problem. Why? Because peat is very rich in carbon.

Remember that the plant carbon cycle involves both storing and emitting carbon; i.e., plants remove carbon from the atmosphere for photosynthesis, and the carbon is eventually released by decomposition after a plant dies. As plants remove carbon dioxide from the atmosphere, they store it as carbon in leaves, stems, branches and roots. This is why trees are major carbon storage facilities. But there's another major carbon sink — yes, that's it — peat bogs. There's something special about the cold, wet, anaerobic conditions in a peat bog that promotes rapid carbon fixation, with little being released into the atmosphere. **Although peatlands cover only 3% of the Earth's surface, they store an estimated 15%–30% of terrestrial**

carbon. In our current climate crisis, we need to keep that carbon sequestered, but unfortunately, **the extraction of peat for horticulture releases carbon.** In fact, most disturbances in peat bogs — whether in the form of wildfires, permafrost thaw, or human disturbances like drainage and extraction — release carbon to the atmosphere. The possibility of such carbon releases is why the recent discovery of a vast peatland in Africa has set off alarms. See "The Race to Defuse Congo's Carbon Bomb."

It's no surprise then that peat bogs have recently garnered much attention from scientists and environmentalists. Measuring the precise amount of carbon stored in Earth's peatlands is an ongoing project, and scientists are also urgently measuring how much carbon is being emitted when peat is disturbed or warmed by recent heat extremes. We are all relying on Earth's natural carbon sinks to help us mitigate climate change and to meet the greenhouse gas reductions required to achieve net zero by 2050. Reducing emissions from industry, automobiles, and the like will not be sufficient, so maintaining natural carbon sinks like the peatlands becomes very important. It must be noted that the estimated total emissions resulting from peat "harvesting" only contribute a small percentage of the carbon emissions attributed to peat "disturbance." The heavy hitters are road and mine construction. "Natural Climate Solutions for Canada," *Science Advances* (2021).

Slabs of extracted peat in Galway, Ireland. Photo: Keith Ewing, CC BY-NC-2.0

If peat mining is a small percentage of the total emissions, do we really need to worry about it? Avoiding the use of peat in horticulture will definitely help preserve the carbon stores in peatlands, although there are those who disagree. But besides carbon-storing, there are other important benefits to the unique ecology of peatlands; the Canadian peatlands hold a large volume of freshwater that supports many rivers, lakes, and other wetlands. This freshwater is critical for the diverse plant and animal species in peatlands, including some highly specialized plant species that are adapted to wet conditions.

Bog laurel (Kalmia polifolia) in Sault Sainte Marie, Ontario, Canada. Photo: Rob Routledge, Sault College, bugwood.org

Most Canadian peat producers revegetate the bogs, and scientists have studied these efforts. It so far appears that these restoration programs are somewhat helpful, though it takes a long time for the peat bogs to return to normal:

> *"Long-term studies of horticultural peat extraction sites suggest careful restoration can shift these peatlands from C sources back to C sinks within two decades. However, the portion of peat C lost during extraction (typically the top 1 m or greater) and drainage is much greater than the peat C that may be recovered within 20 years of restoration."*
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> *–Frontiers in Ecology and the Environment Reviews: The essential carbon service provided by northern peatlands," Frontiers in Ecology and the Environment, Ecological Society of America Journals/WileyOnline Harris et al, November 2021 https://doi.org/10.1002/fee.2437*

What are the Alternatives to Peat?

If I decide to avoid using peat, I'll need an alternative, especially for potting soil. There are definitely alternatives to peat, but there may be problems with some of them. The possible substitutes, according to one expert, are wide-ranging:

> *"International research on peat alternatives dates back at least 30 years and has identified a plethora of materials whose easy availability, low cost, and sustainability make them attractive substitutes for peat moss. These materials, alone or in combination, ranging from traditional materials such as composted bark, yard and agricultural wastes, and livestock manures to more current waste products including brewing waste, coconut coir, olive mill waste, pulp and paper sludge, municipal solid waste and sewage sludge, and even foam cubes. These materials have been used in the rooting and/or production of many plant materials, including vegetables, annual flowers, houseplants, woody ornamentals, and timber species."*
>
> –Linda Chalker-Scott, Washington State University.

Coconut coir is probably the most popular and likely to succeed as a replacement, though its transportation from Southeast Asia will undoubtedly involve green house gas emissions. Because Britain has been reducing peat use for some time now, its work on peat alternatives is worth a look. The Royal Horticultural Society has helpful advice on its website, Peat-Free Growing Media/RHS. There are peat-free potting soils

on the market, though they are more expensive. You can make your own, using recipes at No-Peat Potting Soil Options/University of Minnesota Extension.

Now that I've looked at this issue, I'll probably never indiscriminately grab a bag of potting soil again. I'll be that person hunched over the bag and reading the label, and that's a good thing. Oh, and one more thing, now that I know how rare they are, I'd really like to visit a peat bog some day.

SOURCES:

Featured Photo: *Sphagnum capillifolium*, Photo by Rob Routledge, Sault College, bugwood.org

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Colorado State University Extension/Choosing a Soil Amendment (the peat harvest rate greatly exceeds the vegetation rate of the Canadian peat bogs, so it is considered only a semi-renewable resource).

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