In Season

the quarterly of the Master Gardeners Prince William

Summer 2020

male monarch photo by Jason Alexander

Summer

PRESIDENT'S MESSAGE

I can say that I am very tired of being house bound and looking forward to getting back to normal. The problem is that that time may not even be this year. I continue to lose friends that I know to the pandemic in NYC and several have gotten sick and stayed sick so please be careful, wear a mask and social distance. Maybe this is not the year to go to DC for the fireworks.

I have been enjoying the online presentations that Virginia Cooperative Extension has coordinated in recent months. I have viewed several of the online sessions and really enjoyed them all. I highly recommend that you check them out if you get the chance. The one about meadows is my favorite. We live on a very large piece of land and we put in a meadow on 2 acres around 3 sides of our house. This picture was taken June 2nd and now in early July the field is in blues and yellows.

I have no idea when we will be getting back to person to person sessions and direct outreach – best guess is maybe the fall..... maybe not until next year.

Thank you to everybody who has been involved in the online sessions and being there for the horticulture help desk. Please read Nancy's status emails. It has been very interesting to see the numbers of folks that are signing up for the online sessions – in the hundreds. This is far more folks than our live presentations bring and open a door to a new permanent way of presenting information to folks that I expect to continue on after we are back to "regular ways" of doing things.

All take care and stay safe!!!
-David Robison, President, MGPW, President@MGPW.org

EDITORS' NOTE: *TURNIP NEWS*, RETIRED

After many years of providing valuable and fun information, Master Gardeners Prince William has retired the *Turnip News*. First started in 2007, the *Turnip News* kept Master Gardener Volunteers up-to-date on events, classes, and topics of interest. Editors over the years included Team Turnip, Julie Cochran, Cathy Barosky, Andrea Kinder, Marion Ashley, Rebecca Arvin-Colón, Maria Stewart, and Jan Doble who assembled Master Gardener contributions on a wide variety of horticultural topics.

As the original printed Master Gardener newsletter, *A Little Bit of Dirt*, gave way to the *Turnip News* (see *Turnip News* December 2008), the time has come to refresh and launch the next iteration of the Master Gardeners Prince William newsletter, *In Season*. *In Season* will be a quarterly newsletter that aims to be of interest not only to Master Gardeners, but also to others in our wider Prince William community.

The Editors,
Jason Alexander & Maria Stewart, Master Gardener Volunteers
-Send feedback, questions, or comments to ***MGPWnewsletter@gmail.com.***

VIRGINIA COOPERATIVE EXTENSION MASTER GARDENERS

INSIDE THIS ISSUE

TOPICS OF INTEREST

- Turf
- Prized Plants
- Garden to Table
- Out and About
- Book Nook
- Insights
- In Case You Missed It
- Conservation at Home
- Critter Neighbors
- Free Online Classes

LAWN CARE FOR PWC

Virginia is part of a transition zone between areas where cool and warm season grasses thrive. This can make lawn care in our area challenging. If you're a first time homeowner, new to Prince William County or just looking to better manage your lawn, Virginia Cooperative Extension can help.

We offer help with interpreting soil test results, information on cultural practices, pest identification and pest control recommendations.

For more assistance with lawn care, contact the Virginia Cooperative Extension Environmental Educator at 703-792-4037 or BESTlawns@pwcgov.org.

The BEST Lawn Program can sample and measure your lawn for you and provide you with a fertilizer schedule that will help promote a healthy lawn.

Near East Crape Myrtle
The University of Arkansas System Division of Agriculture

LAWN: BEST MANAGEMENT PRACTICES

turf grass at the Teaching Garden photo by Jason Alexander

excerpted from Lawn Best Management Practices Checklist, Virginia Cooperative Extension

Know Your Grass It is important to identify what kind of grass you have. The proper timing of lawn maintenance, amount of fertilizer and mowing height vary by grass species. Cool season grasses (bluegrass, fescue, ryegrass) are green for most of the year in our area but will brown and go dormant in the summer. Warm season grasses (Bermuda and zoysia) are green in summer but go dormant in cooler weather.

* Test your soil to determine existing pH and nutrients.
* Apply ¼ inch of compost to the lawn annually to improve soil structure.
* Mow routinely during the growing season, and often enough to avoid removing more than 1/3 of the grass blade at each mowing.
* Sharpen mower blades. Dull mower blades tear and damage the grass leaf blades, making them more susceptible to disease and insect attack.
* Recycle grass clippings. Grass clippings are 85% water and provide free fertilizer.

BEST LAWNS PROGRAM has resumed as of June 1, 2020. If you are interested in having a BEST Lawns evaluation for your lawn and/or have questions, please contact Natali Walker at NWalker@pwcgov.org.

PRIZED PLANTS: CRAPE MYRTLE

by Maria Stewart, Master Gardener Volunteer

Crape Myrtles (*Lagerstroemia indica*) are popular landscape plants, often chosen for their varied and long-lasting summer blooms, as well as their interesting structure on display in the winter. Proper selection and care will enhance your enjoyment of this appealing landscape plant.

Right plant, right place. Cultivars (cultivated varieties) range in size from dwarfs that can be grown in containers or as ground covers, to 15 foot shrubs or trees 25-30 feet tall. Choose the size that best suits your landscape. Also, choose a site where your Crape Myrtle will be happy. Crape Myrtles typically do well with partial shade (3-6 hours of direct sunlight) to full sun (6-10 hours of direct sunlight), moist to dry sandy, loam or clay soil, and with a pH range from 4.5-7.3.

To learn more, including proper pruning and how to avoid unsightly "crape murder," see Virginia Cooperative Extension publications: *Pruning Crapemyrtles* (publication 430-451); *Crapemyrtle (Lagerstroemia indica) (publication 2901-1040NP).*

a view of Jimmie Jones's garden with beds built from salvaged boards
photo by Jimmie Jones

GARDEN TO TABLE: TOMATOES – MY WAY

by Jimmie Jones, Master Gardener Volunteer

I really like tomatoes! I like eating, canning, growing, cooking with them, giving them away, and giving garden tours to show them off. I start planning my garden in January and like to use the Garden Planner offered through Vermont Bean Seed Company. The Planner allows you to enter the size of your garden and develops a floor plan – allows you to "drag and drop" vegetables (or flowers, herbs, etc.). You can do planting layouts and spacing is automatic based on seed company recommendations. Unfortunately, spacing is not selectable (I plant more intensely than suggested). Companion planting suggestions are also available.

I have framed beds so I drag and drop for reference only – then I start looking for which plant varieties to select. **TOMATOES FIRST**! Try Nature Fresh Farms, The Tomato Lover's Guide to Every Type of Tomato. This year I selected the following as seeds to start: Red Cherry (2), Burpee Jubilee (4), Tri-L-crop (5), Super Sauce (6), Super Beefsteak (6), Big Daddy (4), San Marzano (6), Brandywine Red (4), Black Vernissage (3), Solar Flair (3) for a total of 43 starts. The framed beds I am using this year are 4' x 12' (outside measurements) and my plan is to set 30 plants – 2.5 beds – the extra plants I donate or give away **WHEN I'M READY TO PLANT**.

I use cages. I make the cages of concrete reinforcing wire – called Grip Wire , 5' x 150' with 5" welded wire squares. I wanted 24" diameter cages so I cut a 6' length – cut out the verticals on one side leaving a spike and rolled around into a cylinder. Then I bent the tip of each spike around the vertical at its corresponding square. AND – I know it's πd for circumference and 6' will not give you a true 24" diameter – but – close enough – **it's a garden**! Also 12 of these fit perfectly in my 4' x 12' bed. At $150 we got 25 cages or $6.00 each and not much work. Mine have already lasted about 12 years. I also cut away the bottom horizontal pieces leaving 5" vertical spikes – perfect for sticking into the ground to stabilize the plants. I also add a T-post at each end of my bed and weave a wire down thru the cages from one to the other. Now wind proof!

I set the cages into position – mark the centers – remove the cages – plant (putting a big handful of egg shells in each hole[1]), mulch, water – reset and secure the cages. I remove the lower leaves (pathogens splash up from the dirt plus leaves are lost in mulch) and set each plant 1" – 1 ½" deeper than it was potted. I wrap a 1 ½" strip of tinfoil around the base to ward off cut worms. I mulch heavily with old or soiled hay. Yes – **seeds**! I know but I have unlimited hay – I mulch heavily – and really have very few weeds and a few coins remain in my pocket. I mulch double heavy in the aisles and if I need a little extra in a bed I pull from the aisle and there are always a few worms under each handful of mulch – tells me my garden likes the mulch!

After the tomatoes have settled in about 2 weeks, I like to spray once. I got a recommendation from VSU and will mix Permethrin, Chlorothalonil, and Copper Octanoate (be sure to get your own recommendation for your specific garden). The permethrin controls fruit worms, hornworms, stink bugs and leaf-footed bugs; the other two products are for disease control. There's not much point in spraying for insects without spraying for diseases as well. I watch closely and at any sign of pest or disease I spray again. Although there is no per-harvest interval, I like to have a few days between spray and pick. Next year I'll use a different spray formula.

Now the hardest part – waiting and watching 45 or 50 days till first tomato! During this time, I remove most sprouts or suckers – the little growth between the leaf and the stem. No tools needed just bend side to side and they'll break right off. I keep tucking the plant back into the cage and the leaves and few remaining suckers hold the plant in the cage. I typically get lots of nice large tomatoes. ◇◇◇

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[1] Egg shells can provide additional calcium over time, and help prevent blossom end rot, which is also caused by insufficient water.

RECIPE: FRESH TOMATO SALSA

Ingredients:

2-3 medium-sized fresh tomatoes (1lb to 1 1/2lbs), stems removed, finely diced

1/2 red onion, finely diced

1 jalapeno pepper (stems, ribs, and seeds removed), finely diced

1 serrano pepper (stems, ribs, and seeds removed), finely diced

Juice of one lime

1/2 cup chopped cilantro

Salt and pepper to taste

Optional: oregano and/or cumin to taste and bell peppers for color

Preparation:

1. Start with chopping up 2 medium-sized fresh tomatoes. Prepare the peppers. *Use caution while handling hot peppers and avoid touching your eyes*. Set aside some seeds from the peppers. If the salsa isn't hot enough, you can add a few more for heat.

2. Combine all of the ingredients in a medium-sized bowl. Taste. If the peppers make the salsa too hot, add some more chopped tomatoes. If not hot enough, carefully add a few more seeds from the peppers, or add some cumin.

Let sit for at least one hour to allow the flavors to combine.

Makes approximately 3-4 cups.

source:
Virginia Cooperative Extension

OUT AND ABOUT:

BUNNY MELLON'S GARDEN

by Jamie Nick, Master Gardener Volunteer

Even though Historic Garden Week in Virginia was canceled, the hard-working gardeners of Oak Spring Garden Foundation created a virtual garden tour and invite you to attend.

Oak Spring Garden Foundation "is an operating foundation dedicated to sharing the gifts and ideas of Rachel 'Bunny' Mellon. Its mission is to support and inspire fresh thinking and bold action on the history and future of plants, including the art and culture of plants, gardens and landscapes."

Take a walk through their formal garden's terraces and beds. Not only will you be treated to beautiful blooms, you'll learn about the design philosophy of Bunny Mellon, the garden's creator. *click below:*

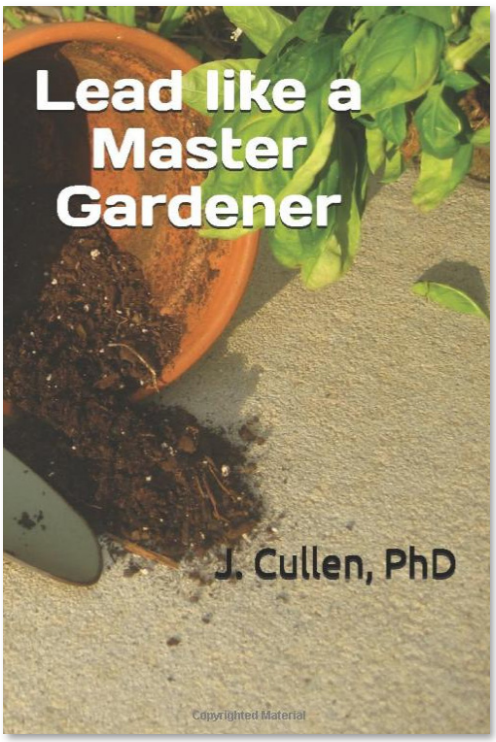
Virtual Garden Tour

"Both the gardener and the leader need to be flexible and adaptive while continuously monitoring current conditions."

BOOK NOOK:

LEAD LIKE A MASTER GARDENER

Janene Cullen, one of our Master Gardener Volunteers, published her first book, *Lead Like a Master Gardener*.



The book highlights the similarities between being an accomplished leader and being a successful gardener. Similarities such as planning, perseverance, and patience. An accomplished gardener has learned from seasons of trial and error regarding what allows a specific plant to flourish, and what will lead to a plant's demise. An effective leader has accumulated a wealth of lessons learned along the journey towards mission success. Both the gardener and the leader need to be flexible and adaptive while continuously monitoring current conditions.

This book highlights a few specific interesting parallels between leadership and gardening. It offers advice on how to create a successful garden and how to inspire an unstoppable team. *Lead Like a Master Gardener* can be found on Amazon.com.

MASTER GARDENERS PRINCE WILLIAM TEACHING GARDEN

The Teaching Garden is a project of the Master Gardener Volunteers. It began as a garden to grow fresh produce for the Plant a Row for the Hungry project and a place where Master Gardeners could teach homeowners how to grow vegetables. The Teaching Garden displays low maintenance gardening techniques that homeowners can implement in their own gardens. It also features plant material that grows well locally.

View the Teaching Garden Brochure which contains a map of the teaching garden bed layout. View the upcoming events at the Garden here as well as other horticulture classes offered by the Master Gardeners

photo by Lynne Lanier Maser Gardener Volunteer

bushkiller showing its arrangement of leaflets
The Maryland Invasive Species Council. Photo: Robert J. Richardson, NCSU Bugwood.org

INSIGHTS:

BUSHKILLER, *CAYRATIA JAPONICA*

by Abbie & Vincent Panettiere, Master Gardener Volunteers

Invasive plants are often the result of natural processes outside the mischief of human beings. Finding a "place in the sun" (or shade) is a very competitive process, as Charles Darwin famously explained. But people are also very much involved, most often with the best of intentions.

In this case, the bushkiller vine (Cayratia japonica), long used in Chinese medicine, was brought to the United States, it is generally agreed, as an ornamental sometime before 1964 when it was first described in Louisiana. It has been found in Texas from that time, and is now also found in Alabama, Mississippi, North Carolina, Maryland, and Virginia. Because of its rather recent arrival and resemblance to Virginia Creeper, it has largely gone unnoticed. And there is a measure of uncertainty concerning how extensive its reach is and even that it is actually here among us.

It does seem to be here, though. The University of Tennessee Institute of Agriculture Extension mentions bushkiller in its publication, Invasive Weeds of the Appalachian Region. The Maryland Invasive Species Council (MISC) mentioned in 2014 that it has been seen doing its destructive work in our state. The MISC was so impressed by the vine that it was selected as September Invader of the Month for 2014, and that was six years ago; it's sure to have spread since then.

Cayratia japonica is a member of the grape family, Vitaceae. Besides the name bushkiller, it has also been called sorrel vine. It is an invader. Its native range is southeast Asia, India, across Japan into Malaysia and into northeastern Australia. It climbs over vegetation, covering everything in its path with a thick matted blanket of leaves and vines and ultimately kills the shrubs, trees and plants underneath by depriving them of the sunlight needed for photosynthesis. The weight of the great mat of vines may also crush the vegetation being covered, providing another means of destruction. In hearing of the

WHY WOULD WE NEED DUES?

A Message from MGPW Treasurer Christina Hastings

I am in a unique position. Not only am I the Administrative Assistant for Virginia Cooperative Extension Environment and Natural Resources (VCE ENR), but for the last two years or so, I've been the Treasurer for Master Gardeners of Prince William (MGPW). As the Admin, I have gotten a firsthand look at your interests and some thoughts submitted on your Recertification forms. You may recall there was a question at the end of the form that asked your opinion on paying a small amount in annual dues. Reading the responses to this question made me realize that MGPW volunteers may not be aware of what it takes (financially) to run our organization, what programs we support, etc. I thought it would be a good idea to provide transparency and summarize the MGPW Budget. The below charts summarize the 2019 full year budget and where we are at today with the partial year 2020. I also would like to address what I will call "myths" that I have heard and provide you with what are actually the "facts."

2019 BUDGET (as of Jan 1, 2019, Beginning Balance $8,769.72)	
Income	Expenses
Teaching Garden Sales: $6,961.00	Teaching Garden: $2,683.61
Donations: $700.00	Liability Insurance: $197.00
Fund Raising: $1,095.85	Donations: $350
Social Events: $400.00 (Mason Bee House)	Grants: $958.20
	Memorial: $21.95
	Scholarships: $50
	Social Events: $608.43
	Education: $100
	Administrative: $350.15*
TOTAL INCOME: $ 9,156.85	TOTAL EXPENSES: $6,731.89

continued p. 7

damage it does, you might be reminded of kudzu, a member of the pea family. Kudzu is another very destructive plant, and also brought into this country with the best of intentions. It was intended as an ornamental vine for southeast homes to provide shade, but achieves much the same result as bushkiller. The leaves and vines cover any vegetation they climb over, gradually depriving plants, bushes and trees the means to survive.

In tropical countries bushkiller does produce flowers and seeds and reproduces by seed, but in some southern areas in this country, the climate is such that cayratia doesn't produce viable seed and spreads by rhizomes. I was unable to find any mention of its hardiness zone online but one site did mention that if you had bushkiller in a Zone 7b climate, it spreads vegetatively; the plant would be likely to die back to the ground during winter and return the following spring from the roots. At least it was not likely to be spread by birds and it suggests that it's northern hardiness border is somewhat warmer than our Zone 7b provides.

Several sites, particularly in North Carolina, went into great detail describing the damage that bushkiller did to residences in the city and suburban areas. It apparently is happy to grow in forests, thickets and fields. It is a further danger as "ladder fuel." Ladder fuel is described by the Cooperative Extension System as "fuel that can carry a fire burning in low-growing vegetation to taller vegetation."

Several sites mentioned bushkiller in relation to both porcelain berry (*Ampelopsis glandulosa* var. *brevipedunculata*) and Virginia creeper (*Parthenocissus quinquefolia*), both also perennial members of the Vitaceae family. A scientific study conducted by BioOne measured the differences among the three vines for certain qualities. In their abstract, they mention: "to better understand the competitive abilities of these aggressive weeds, greenhouse competition experiments were conducted on cuttings of por-celain berry, bushkiller, and Virginia creeper, a member of the Vitaceae family native to Virginia. Plants grown singly or in combination were monitored for stem growth and biomass production. In this research, porcelain berry and Virginia creeper exhibited similar rates of stem growth, whereas bushkiller grew taller and faster than either of the other species."

The results of their tests led them to conclude: "... that bushkiller is likely the strongest competitor of the three species studied. In these experiments, porcelain berry was less aggressive and vigorous than bushkiller but was similar to Virginia creeper." In their studies, they found that porcelain berry and Virginia creeper were similarly vigorous and aggressive but that bushkiller was a great deal more aggressive and destructive.

As seems to be the case with most things of this earth, nothing is either entirely worthwhile or entirely worthless. *Cayratia japonica* has been long used for medicinal purposes in China. The roots and the whole plant are used. The Chinese name for cayratia is Wulianmei. Canes are cut in summer and autumn and roots are dug up. Impurities are removed, the material is washed and cut into segments, then sun-dried and used fresh.

The medicinal use comes from the plant's volatile oil having thirty components, and it also contains potassium nitrate. It is said to be anti-viral, antibacterial and heat-dispelling, anti-inflammatory and effective on clotting and immune functions.

It is used to treat erysipelas (erysipelas is a superficial form of cellulitis, a potentially serious bacterial infection affecting the skin), sore throat, snake and insect bites, burns caused by hot liquids or fires, rheumatic arthralgia, jaundice, dysentery, and several other ailments.

Everything I have found suggests that bushkiller is very difficult to eradicate once it is established. If the plants are dug up, which is suggested, every bit of the plant must be removed because anything left in the soil will have the ability to regrow. According to one source, "... a fragment as small as 1 cm long produced shoots," and bits of root more than one foot deep were still able to produce another plant. Several sites mentioned that it had been very difficult to find herbicides that were effective in getting rid of bushkiller.

Invading plants often seem to be recognized as problematic only after they've reached the point where it's impossible to ignore them. A few examples include the well known Kudzu, invasive water chestnut, and autumn olive. They and many other plants that were brought in either by accident, or on purpose with the best of intentions, can quickly get out of hand. If left too long, they require much greater efforts to remove than if they had been discovered early on. All this means that we should be watchful for the appearance here in our area of bushkiller especially because of its close resemblance to the less problematic Virginia creeper, (*Parthenocissus quinquefolia*), in that both plants have five leaflets, but the middle leaflet on Virginia creeper does not contain its own stem.

Looking out for bushkiller also gives us a good reason to look closely at the land around us, and no one can fault us for enjoying the view if we don't happen to find any sign of that particular invader.
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Insights: Bushkiller

Sources & For More Information

Maryland Invasive Species Council
Invader of the Month
Bushkiller–*Cayratia japonica*,
Kerrie Kyde, Maryland DNR Natural Heritage Program,
9/9/2014

LSU School of Renewable Natural Resources
bushkiller, *Cayratia japonica*

Bugwood Wiki
Cayratia japonica
Mandy Tu, Global Invasive Species Team, The Nature Conservancy

The Advocate: Baton Rouge, LA
'Bushkiller vine' springs back in recent hot and rainy weather,
7/28/2017

The University of Tennessee
Agriculture Extension
Bushkiller (*Cayratia japonica)*
Becky Koepke-Hill, Extension Assistant, Plant Sciences Greg Armel, Assistant Professor, Extension Weed Specialist for Invasive Weeds, Plant Sciences

BioOne Complete
Porcelain Berry (*Ampelopsis brevipedunculata*), Bushkiller (*Cayratia japonica*), and Virginia-Creeper (*Parthenocissus quinquefolia*) in Interspecific Competition
Sherrie E. Emerine, Robert J. Richardson, Consuelo Arellano,
3/1/2013

Virginia Native Plant Society
Unwanted and Unloved: Porcelain-berry! 8/12/2014

BioOne Complete
Bushkiller (*Cayratia japonica*) Response to Selected Herbicides
Amanda M. West, Robert J. Richardson, Andrew P. Gardner, Steve T. Hoyle, 1/1/2011

University of Tennessee Extension
Institute of Agriculture
Invasive Weeds of the Appalachian Region

Texas Invasive Species Institute
Bushkiller *Cayratia japonica*

Cooperative Extension
Surviving Wildfires
Ladder Fuel, 8/27/2019

Brooklyn Botanic Gardens
Weed of the Month: Porcelain Berry
Saara Nafici, 10/26/2017

Virginia Cooperative Extension: Soil Information Program

IN CASE YOU MISSED IT: READING SOIL TEST RESULTS

by Jeff Schneider, Master Gardener Volunteer

On May 26, I attended (virtually, of course) the lecture *Hands-On Soil Test Clinic* presented by Future Harvest, which is a program of the Chesapeake Alliance for Sustainable Agriculture (CASA). Coincidently this month, I also received the soil test results for my lawn and my neighbor's, so I thought getting into a little more depth than checking the pH value might be a good topic for this first *In Case You Missed It* column.

Virginia Tech presents its lab results in two tables. The top table is the nutrient analysis and is easy to interpret. The values for Phosphorus, Potassium, Calcium, and Magnesium are presented as letter grades L, M, H, and VH for low, medium, high, and very high with a plus or minus sometimes added. Low means plants definitely will respond to adding the nutrient, M means they probably will, and H and VH means adding the nutrient is a waste of money and may even cause problems.

For lawns, it is important to check the phosphorus (P) value and recommendations. Usually in our area, lawns have sufficient P and the Extension strongly discourages adding additional P when it is not needed because of the pollution risk from run-off to our waterways. Sometimes, however, a lawn can benefit from additional P—for example mine this year and my neighbor's (see table below). The application rate will be reflected in the Fertilizer Recommendations note in the bottom of the test report. In my case the lab recommended a 2-1-1 ratio, so if I apply the recommended 0.7 lbs/Kft2 of nitrogen, I'll also be applying 0.35 lbs/Kft2 of phosphorus (and potassium, too). Because my neighbor's lawn is so deficient in P, the lab recommended a ratio of 1-2-2 for him.

The trace nutrients—zinc (Zn), manganese (Mn), copper (Cu), iron (Fe), and boron (B) come next and usually receive a grade of "SUFF" for sufficient. If there is a deficiency the nutrient will receive a grade of "DEF" and recommendations will be listed in the Remarks section.

The top table finishes off with a block for Soluble Salts, which farmers who use fertilizers in salt form can use to judge the salt build up in their fields; home gardeners rarely, if ever, need this measurement.

The second table gives us a fuller picture of our soil chemistry, in particular, the balance between acidic ions (such as hydrogen and aluminum) and basic ions (such as calcium,

CONTINUED WHY WOULD WE NEED DUES?

2020 Budget (as of 1 June 2020 Beginning Balance $13,698.04)	
Income	Expenses
Donations: $13.41	Teaching Garden: 86.94
	Education: $500
	Insurance: $200
	Administrative: $98.10*

**Administrative includes but is not limited to software licenses, annual fees for VA Corporation Commission, postage, MGPW travel reimbursements, etc.*

Myth: MGPW is funded by Virginia Tech.

Fact: While there is a small amount of funding provided by VT, it is for specific items such as grants and certain items that are in support of the community (tents for the Farmer's Markets), fees associated with Recertification. Funds in support of the VCE-Prince William Master Gardener program are different than funds that support the 501(c)(3) MGPW, Inc.

Myth: We get money from soil samples and the BEST Lawn program.

Fact: Funds from BEST Lawns are collected to allow cost recovery for staff time, the costs of soil test and shipping, materials and tools. Funds collected for soil tests go to the Lab to cover their costs. All purchases made in support of BEST Lawns come from either the revenue generated for BEST Lawns or from the soil test rebate we receive annually. BEST Lawns revenue/ expenditures are run through the VCE state local agency fund

Myth: We make a lot of money from fund raising (shouldn't need dues).

Fact: While MGPW does hold a few fund raisers (Brent & Becky's, Carruth, Amazon Smile) we receive a minimal amount of funding from each of these. Carruth has given us the most, we keep 40% of the sales. However, the last couple of Carruth fund raisers have

CONTINUED WHY WOULD WE NEED DUES?

had less than 10 people participate (we have about 200 active Master Gardeners). In 2019 we received $25 from Brent and Becky's and $13.00 from Amazon smile. VCE is not able to hold fundraisers.

Myth: We make enough funding from the plant sales (shouldn't need dues).

Fact: While the plant sales do make a good amount of money, the majority (if not all) of that funding is earmarked specifically to support the Teaching Garden expenses. Those expenses include plant purchases, mowing service, upkeep of equipment and gardens, etc. Funds raised from plant sales are handled through MGPW accounts currently.

Myth: Volunteers should not have to pay to volunteer.

Fact: Research indicates that most volunteer organizations do charge dues in addition to holding fund raising events and plant sales. In fact, several other Master Gardener Organizations throughout the Commonwealth charge dues as does Virginia Master Gardener Association (VMGA).

So why would MGPW need dues? Paying dues would allow the Education Committee to seek (and pay) speakers such as Doug Tallamy or other horticultural and environmental experts for continued education. Many of these individuals have speaking fees and travel expenses. The Social Committee would be able to plan visits to botanical gardens, participate in the Virginia's Historic Garden Week tours and other horticultural events. Many of these events have an associated fee; monies collected from dues could reduce or even eliminate the fee. While we don't like to think about losing our friends, funds raised by MGPW are also used to purchase memorial bricks for those who have left us. Sadly, this year we will be purchasing four of those bricks to remember our MG friends.

While the MGPW Board of Directors has discussed the pros and cons of dues, no decision has been made on dues. A reasonable amount would need to be determined, guidance on when to collect dues and what they can be used for, etc. would need to be written and then brought to a vote before all active

magnesium, and potassium), which determines the nutrient availability in the soil. The first block is a Master Gardener favorite—the pH. The pH measures the number of hydrogen ions (H+) floating in the solution between the soil particles. The pH scale is a negative logarithmic scale, meaning that as the scale number rises the number of H+ present falls. The hydrogen ions in this form make the soil more acidic and they are not a plant nutrient so we'd like to get rid of them and replace them with something nutritious for our plants. The desirable range for most of the things we want to grow is 6.0 to 6.5. Most native plants (including weeds) prefer a lower pH.

So, the pH tells us how saturated the soil solution is with H+ ions, but there are other ions in the soil as well, which brings us to the next two blocks--the Buffer Index and the Est-CEC. The Buffer Index measures the ability of the soil to replace any H+ removed from the soil solution with the H+ stored by the clay and humus particles in the soil and therefore how easy it will be to change the pH. The index ranges from 1 (very resistant to change) to 6.6 (easy to change). Two lawns with the same pH will need different amounts of lime to reach the same target pH if they have different Buffer Indexes. The lawn with the lower Buffer Index will need more lime to reach the target.

The ability of the soil to store H+ and other ions is measured by the Cation Exchange Capacity (CEC) and brings us to the next block—Est-CEC. CEC measures the number of ion storage sites in the soil. Ion storage sites hold onto ions and prevent them from venting to the atmosphere or leaching out.

Physically, these ion storage sites are electrically charged spots on the surface of clay and humus particles. These spots attract the ions out of the soil solution and hold onto them. Think of hooks on a hat rack or magnets on a refrigerator door. The more hooks, the more hats on the rack; the more magnets, the more kindergarten artwork and other stuff on the door.

Pure sand and silt particles have a CEC of 0 (no hooks or magnets) and so have no ability to retain nutrients in the soil. Clay particles vary widely but their CEC usually is below 35. These storage sites are always negatively charged, so clay can hold onto H+ and also plant nutrients such as calcium (Ca++), magnesium (Mg++), and potassium (K+).

Humus, which is the final product of organic decomposition, has a CEC of 100 or higher and has both negatively and positively charged sites, so humus can hold onto negatively charged plant nutrient ions such as nitrate (NO_3-) in addition to all the ions that clay can hold. The ability of humus to raise the CEC of a soil is a key reason to add organic matter to the soil. The CEC of most natural soils in Virginia, which are around 20-percent clay with low levels of organic material, ranges from 1 to 12. By comparison, the clayey loams of Indiana range from 15 to 30.

The next two blocks lay out the percentage of CEC sites occupied by acids (Acidity) and bases (Base Sat) and will add up to 100 percent. The next three blocks then break out the composition of the base sites and will add up to the Base Saturation percentage. Calcium tends to open up soils, while magnesium tends to tighten it up. With our clayey soils in Prince William County the ideal numbers for these blocks would be about 65 for calcium and about 10 for magnesium.

Finally, we come to the Organic Matter (OM) block, which is not included in the basic test. According to Virginia Tech, the OM for most agricultural fields in Virginia ranges from 0.5 to 2.5. For an extra $8 ($4 for each test) I had the lab determine the OM last month when I tested my soil (organic lawn care for 30 years) and my neighbor's (pretty much no care other than mowing for 30 years). His OM was 2.5 and mine was 3.9. While not jaw-dropping, it does represent a 62.5 percent increase in OM (see table below) and probably accounts for the difference in Est-CEC between our lawns--his is 3.7, while mine is 6.0.

Now that we've gone through the soil test, we might want to know what happens when we lime. Basically the lime ($CaCO_3$) hits the ground and breaks up into Ca++, CO_2, and O--. The calcium ion kicks two hydrogen ions off of a soil particle and into the soil solution. The oxygen ion picks up two hydrogen ions from the solution to become water and usually leaves the soil as water vapor or eventually leaches out, and the CO_2 vents to the

atmosphere. So the lime has reduced the number of H+ in the soil solution (raising the pH) and reduced the amount of H+ stored by the soil particles. The calcium is also available to the plant by processes too lengthy to describe here. So liming will raise the pH, lower the acidity, and raise the base saturation. It will also make more calcium, magnesium, and potassium available to the plant.

Here are two tables with my 2017 and 2020 results and my neighbor's results:

Year	pH	P	K	Ca	Mg	Zn	Mn	Cu	Fe	B
2017	6.7	31	82	1795	277	1.0	2.7	0.1	6.3	0.3
2020	5.7	14	118	1534	255	1.1	3.0	0.2	9.3	0.3
2020M	5.4	3	39	686	155	1.2	1.4	3.1	26.3	0.1
Year	pH	BI	CEC	Acid	B Sat	Ca	Mg	K	OM	
2017	6.7	6.46	5.8	0.7	99.3	77.7	19.8	1.8		
2020	5.7	6.23	6.0	16.7	83.3	63.4	17.4	2.5	3.9	
2020M	5.4	6.18	3.7	35.2	64.8	46.2	17.2	1.4	2.4	

As you can see in the first table, I need to get some lime down this year—60lbs/Kft2 and my neighbor will need 80lbs. You can see the improved nutrient content of my soil when compared to my neighbor (red represents a score of "L," green is "M" or "SUFF," blue is "H," and violet is "VH").

The second table shows how radically a liming program can alter soil chemistry and nutrient availability especially when comparing my 2017 to my neighbor's 2020. The CEC is substantially higher, meaning I have more storage capacity in my soil and almost all of the ions stored were bases and not acids, while acids take up over a third of my neighbor's CEC. Also, note the improved Ca:Mg ratio and the higher Organic Matter content, which we've already discussed.

For a fuller treatment of interpreting soil test results, see Virginia Cooperative Extension publication 452-701. ◇◇◇

CONTINUED WHY WOULD WE NEED DUES?

Master Gardeners.

As you can see from my chart above, it shows we currently have a good balance in our account, but keep in mind it is primarily because of COVID 19. About half of this amount is earmarked for the Teaching Garden reimbursements. Since work at the Teaching Garden has been extremely limited, I have paid out very little in reimbursements. If there is any major repair or purchase that needs to be done that amount could be reduced quickly. ◇◇◇

CONSERVATION AT HOME: SAVE TIME, SAVE MONEY, SAVE NATIVE PLANTS

by Jason Alexander & Maria Stewart, Master Gardener Volunteers

"Have you seen the giant moss patch?" My husband's eyes gleamed when he asked, knowing moss is one of my favorite plants. Yes! I had seen the moss on the wooded parcel we bought three years ago. I had also seen an unfortunate abundance of common landscape go-tos — liriope, azalea, Rose of Sharon, and Japanese barberry, to name a few. The liriope was running amok in an ever expanding bed. The azalea turned out actually to be four shrubs sheared together to form one unsightly ball with a dead interior. And the Rose of Sharon and Japanese barberry clearly had designs on invading the beech, oak, and tulip poplar-filled woods.

After many years thinking about living in a wooded landscape, learning with the Master Gardener program, and having a general interest in our local ecology, we wanted to do something with our new home that benefitted both us and our native fauna. We also didn't want to spend a lot of time and money maintaining a lawn. Where do we start? The task seemed overwhelming.

common blue violet
(Viola sororia)

photo by Jason Alexander

We also didn't want to spend a lot of time and money maintaining a lawn. Where do we start?

First, we set up a site visit with Leslie Paulson, Audubon at Home Wildlife Sanctuary Program Coordinator for Prince William County. Leslie helped us identify native plants to keep and non native invasive plants that needed to go. Leslie also offered expert advice on the benefits and value of native plants — they're easier to grow since they're acclimated to our environment, and they are essential to a healthy food web.

Next, we started to garden by elimination. That is, we took note of what was already growing in our landscape for free, and cut back the less desirable plants around them. For example, we noticed common blue violets, host plant for fritillary butterflies. So we cut back the chickweed, lespedeza, and other invasive plants choking it out. Soon enough, the violets were no longer shrinking, but thriving which, in turn, allowed our butterfly population to explode. We also started noticing other native plants popping up such as common cinquefoil (Potentilla simplex), pussytoes (Antennaria neglecta), and broomsedge (Andropogon Virginicus) to name only a few.

Since we started providing more space for our native plants, and eliminating pesticides and herbicides (another cost savings), we have not only seen a dramatic increase in the number of butterflies, birds, and other faunal neighbors, we have a lot more time to enjoy our landscape. The number one time-saver has been less mowing. Each year, we mow less as our native groundcovers reclaim their spot in the food web. The process is a journey for us, and we are excited each season to welcome more native plants, and the critters that need them for survival. ◇◇◇

common cinquefoil
(Potentilla simplex) filling in a bare spot

photo by Jason Alexander

CRITTER NEIGHBORS:

FIERY SEARCHER CATERPILLAR HUNTER (*CALOSOMA SCRUTATOR*)

by Jason Alexander, Master Gardener Volunteer

As its name suggests, this beetle has an appetite for caterpillars that might doom a variety of fruits and vegetables. Any gardener should be happy to find this visually stunning pest controlling beetle roaming the garden. They can also be found searching for prey on tree limbs. Females lay their fertilized eggs in soil. Larvae pupate underground and emerge in the spring as adults ready to hunt with their strong jaws. Although they're not venomous they could give you a painful pinch. Adults can live up to three years.

Fiery Searcher
Caterpillar Hunter
photos by Jason Alexander

Source:

InsectIdentification.org

Master Gardeners Prince William

Master Gardeners of Prince William (MGPW) is the supportive organization for active Master Gardener Volunteers in Prince William County, Manassas City and Manassas Park. There are approximately 200 active volunteer environmental educators serving in various capacities.

Volunteers and volunteerism are central to the MGPW mission as we strive to make our community a more sustainable, healthy and beautiful place to live and to educate residents about the many benefits of gardening, including the opportunity to grow nutritious, healthy food, environmentally friendly landscapes, all with the ultimate goal of protecting water quality in local waterways and the Chesapeake Bay.

FREE ONLINE CLASSES

Virginia Cooperative Extension (VCE) is hosting classes via zoom every Wednesday, 11:00 a.m. to Noon. For a schedule of classes, click here: Prince William County Cooperative Extension Horticulture Classes.

Please register for classes by contacting the Horticulture Help Desk at mastergardener@pwcgov.org.

All classes as well as Teaching Garden tour videos can be found on our YouTube channel.

Although Prince William County Buildings are closed to the public, VCE staff and Master Gardener Volunteers are working remotely to answer your lawn and garden questions. Please contact us by emailing mastergardener@pwcgov.org or call 703-792-7747.

Master Gardeners Prince William

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