

COMMUNITY ECOLOGY  
INSTITUTE

# GARDEN CARE GUIDE



How To Start And Care For A Food Garden

GROW FOOD. CULTIVATE COMMUNITY. PROTECT THE PLANET



# ABOUT

## Nourishing Gardens



The Community Ecology Institute (CEI) was founded in 2016 to create communities where people and nature thrive together. We work at the intersections of civic ecology, community health, making connections with nature, and climate action. We operate two 6-acre environmental education and demonstration centers Freetown Farm, located in Columbia, MD and Green Farmacy Garden, located in Fulton, MD. These properties are home to our flagship programs, a Community of Families in Nature (CFIN), Roots and Wings, Green SEEDS internships, and Nourishing Gardens while also offering experiential learning workshops to community members.

CEI launched the Nourishing Gardens program in 2021 to ensure all community members had access to the knowledge and skills necessary to transform their lawns into gardens that nourish themselves, their community, and the environment.

### The Problems We're Addressing

- According to Feeding America, nearly 25,000 Howard County residents experience periods of food insecurity. Nourishing Gardens teaches people how to turn seeds into a season of harvest.
- It's estimated that the average meal in the U.S. travels up to 1,500 miles before it reaches a family's table. Nourishing Gardens aims to install gardens throughout the community, supplying the community with healthy local food options.
- Lawns consume trillions of gallons of water each year, and produce little in the way of nourishment for the families who tend them. Nourishing Gardens gives a portion of those yards a new purpose.
- Millions of gallons of gas are consumed during yard maintenance each year. Gardens require no gas-powered tools to maintain.
- Millions of pounds of herbicides and pesticides are applied to lawns and ultimately contribute to the pollution of streams and rivers. Healthy fruits and vegetables can be grown with little to no herbicides or pesticides used.
- Lawns offer little in the way of habitat for pollinators and wildlife that are necessary for a healthy local ecosystem. Gardens benefit wildlife by providing nectar for pollinators, fruits and seeds to share with birds, and rich soil to support insects and reptiles.

### CONTACT US

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# Table of Contents

Tools and equipment.....Pages 1, 2

Shopping List.....Page 3

Planting Checklist.....Page 4

Plant Tracker.....Page 5

Good Gardening Habits.....Page 9

Notes.....Page 10

Guide To Plant Care.....Page 11

Guide to Watering.....Page 12

Guide to Weeding.....Page 13

Guide to Fertilizing.....Pages 14, 15

Guide to Plant Maintenance.....Page 16

Maintenance Tracker.....Page 17

Troubleshooting.....Pages 18, 19

Harvesting.....Pages 20-23

Resources.....Page 24

# HERE ARE THE THINGS YOU NEED FOR GARDENING



## *Soil/ fertilizer*

All edible plants remove some nutrients from the soil, and can exhaust the soil if not provided a regular (every 3-4 weeks) fertilizer.



## *Gloves*

For food gardening, a simple pair of water-resistant gardening gloves will do the trick. You'll want a well fitted glove that is not too bulky, especially for working with seeds.



## *hose/ watering can*

It is important that your garden hose can reach every area. Alternately, you can use a watering can, but will need to consider a nearby water source, either a spicket or a rain barrel.



## *hand trowel/ garden knife*

This is an essential tool for planting potted plants and for removing unwanted weeds.



## *Seed/ plants*

It can be helpful to have seeds on hand, in preparation of the next planting season, for replanting plants that do not survive, and planting a cover crop in the off season.

# HERE ARE THE THINGS YOU NEED FOR GARDENING



*Continued...*



## *Pruning shears*

Helpful for gently snipping off ripe fruit without damaging the plant. Shears can also be used for pruning back dead or unhappy plant parts.



## *wheelbarrow*

Use this for moving plants, soil, and tools in and out of the garden.



## *Shovel*

Useful for turning soil when mixing in new fertilizer, digging holes for larger plants, moving soil, adding in additional mulch.



## *Rake*

A garden rake can be useful when raking out annuals, mixing in new fertilizer, or spreading mulch.

## *Tool storage*

store tools in a clean, dry place to extend their life and prevent loss



Tip: make sure tools are cleaned (soap and water), disinfected (isopropyl alcohol), dried, and sharpened.



# Shopping

## LIST

It doesn't take a huge investment to manage your vegetable garden, but having some basic tools on hand will make tending to your garden easier and more enjoyable.

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# Wake Up Your Garden Planting Checklist



Note: consult [www.almanac.com/gardening/frostdates](http://www.almanac.com/gardening/frostdates) to get the estimated last frost date for your area.

## Winter - A Time to Plan

- Participate in workshops related to planning
- Map out any open areas needing planting
- Determine sun/ shade of plant sites
- Make a list of seed or plants to purchase
- Order any seeds desired
- Inventory tools and supplies
- Order any supplies needed for the season

## February - March

- Put together supplies needed for seed starting
- Organize seeds by planting dates and re-read seed labels
- Start seeds that need to be started indoors based on their specific requirements

## April - May

- Prepare the site by amending the soil/ fertilizing
- Plan a planting date in consultation with seed specific recommendations and weather.
- Ensure water accessibility
- Purchase desired plants
- Plant plants, transfer seedlings, and direct sow seeds as recommended
- Water new plantings well / daily

## June - July

- Plant warm season plants as recommended
- Pay special attention to cool season crops: watering, harvesting, and adding afternoon shade as needed.
- Consider adding fertilizer to heavy feeders every 3-4 weeks

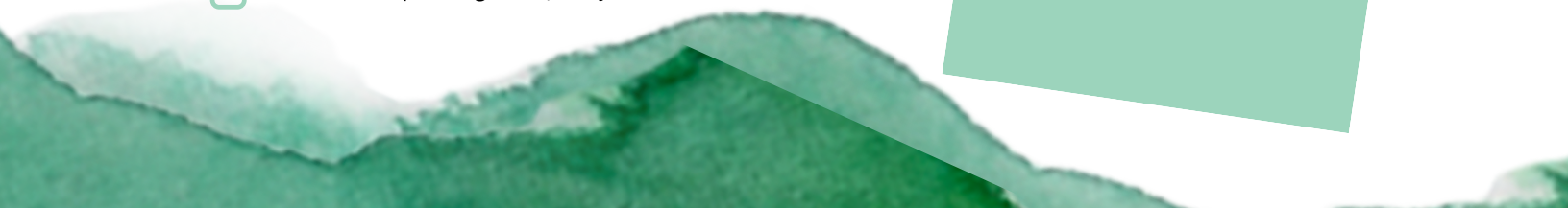
## August - September

- Plant cool season plants as recommended
- Pay special attention to warm season crops: watering, harvesting, and pruning as needed.
- Consider adding fertilizer to heavy feeders every 3-4 weeks

## October - November

- Plant winter crops (garlic, root and brassicas)
- Harvest cool season crops
- Add mulch or live mulch (cover crop) to your beds

NOTES:



# Plant Tracker



Use this page to track when you planted each plant or seed and your expected harvest.

Plant Name	January	February	March	April	May	June	July	August	Sept.	October	Nov.	Dec.

Key: P = Planted, S = Seeded, H = Harvest Expected



# Good Habits

Chinese proverb, “The best fertilizer is the gardener's shadow.”

The more attention you devote to your garden, the more bountiful your harvest will be.



- **Walk around.** Visit your garden every day. Observe what has changed since your last visit. Pull a weed or two and check the moisture level of the soil in several places. Notice the insects you see. Turn the leaves of your plant over and check for eggs or larvae of pests.
- **Take pictures.** You'll learn a lot from the progression throughout the season and have a basis to plan for the next year.
- **Keep a journal.** If you're tech-savvy you can download an app for your phone or create a tracking spreadsheet. If you're more comfortable with paper, buy or create a notebook dedicated to your garden to capture your observations and musings about what's happening your garden.
- Some things you may want to record in your journal:
  - A list of plants in your garden, date planted, and time to maturity (expected harvest)
  - Plant profiles: plant name, about, growing needs, and harvest use
  - A log of any pests or diseases noted with observation dates
  - Documentation of the care given such as the days the garden was watered, fertilized, or weeded
  - The date, types, and quantity of food harvested from your garden. Celebrate the fruits of your labor!
  - Notes of your own observations throughout the season, which might include what plants are in bloom, what's producing, or what kinds of beneficial insects or wildlife it's attracting.
  - Resource list: Nurseries visited, dates, and plants purchased
  - Reflections on any joys (or aspects you are not enjoying) about your garden







# Your Guide To *Plant Care*

Tip: get into the habit of checking on your garden each morning.

## Water.

While seedlings require daily moisture, established plants tend to benefit from 1-2 inches of water or rainfall per week. You can plan to water your garden every other day if no rainfall occurs. A rain gauge can help you know if you are on track. Plants should be watered at the base to avoid wetting the foliage.



## Fertilize.

As plants grow, they take up nutrients from the soil. Nutrients should be replaced with either a liquid or granular formula in order to support plant growth and healthy produce.



## Weed.

As you go through your garden, you should pull any weeds from the soil. Weeds compete with your plants for available nutrients in the soil.



## Prune.

As you walk through your garden, you should have a pair of pruning shears handy. Check for indications of insect damage or plant disease and remove any unhealthy branches or leaves. Also handy for safely harvesting your produce.





# Your Guide To *Watering*



Your plants need sufficient water to produce bountiful, succulent vegetables. Most vegetables require at least an inch of water per week (that's 65 gallons/100 square feet). Check your soil every 3 - 4 days by using your trowel to dig a small hole in the soil. If the soil is dry 3 - 4 inches below the surface, it's time to water. Loose, sandy soils will need more frequent watering than denser clay soil.

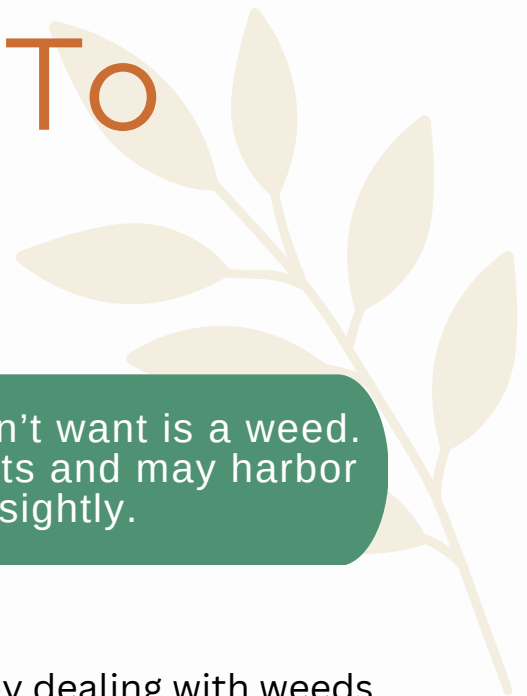
Here are some key things to remember:

- **Keep things moist in the beginning.** Try not to allow your plants to dry out during the first two weeks they're in the ground.
- **Water thoroughly.** Make sure you water each plant for several minutes to allow the water to penetrate below the surface. Frequent, shallow watering encourages roots to develop near the surface, preventing them from accessing nutrients deeper in the earth.
- **Allow the soil to dry out between waterings.** If the soil is too soggy, roots won't get sufficient oxygen and the plants may be damaged.
- **Wet the roots not the leaves.** Avoid overhead watering; when hand watering, use an extension hose to get the water directly on the soil.
- **Water early in the day.** Water collecting on the leaves of plants overnight can cause disease or rot.
- **Mulch.** Having the soil covered will help the garden retain moisture and also help control weeds. You can have a live mulch with low growing ground cover or use a pine or straw mulch between plantings.





# Your Guide To Weeding



Any plant growing in your garden that you don't want is a weed. Weeds will compete with your vegetable plants and may harbor pests and disease, and can be unsightly.

## Prevention

Weed prevention strategies can save a lot of time by dealing with weeds before they appear.

- Pay attention to plant spacing and interplanting to avoid open areas of exposed soil where weed seeds could take root.
- Organic mulch is very helpful in minimizing weed growth. A 2 - 6 inch layer of compost, newspaper covered with straw or shredded leaves, or even bagged pine bark mulch can smother weeds and will break down over time, adding additional nutrients to the soil.

## Control

When weeds appear, some suggestions for getting rid of them:

- **Think small.** Weeds are much easier to control when they're small. If you pull a few weeds every time you visit your garden the process won't be so daunting.
- **Slice weeds at ground level.** Avoid deep tilling which can disturb the living organisms and structure of the soil
- **Avoid herbicides.** Most herbicides are damaging to vegetable plants; some even cause damage in subsequent years. Any lawn surrounding your vegetable garden should be mowed regularly to minimize weeds. Don't use herbicides near the vegetable garden because wind drift could transport spray to your vegetables.



**Tip:** keeping a map of your plantings and plant profiles that detail each plants appearance at every stage of development will help you more easily determine if a sprout is a planted seed or unwanted visitor.

# Your Guide To *Fertilizing*



For many plants, the addition of organic matter creates sufficient nutrients for the growing season. However, some plants will need additional fertilizer. These plants are known as "heavy feeders." The chart below provides a brief summary.

For best production, apply a compost or organic granular fertilizer as recommended below.

Bean family (Beans, Southern peas, and green peas)	Light-medium feeders; side-dress beans, if necessary, when pod set is heavy. Excess Nitrogen delays flowering. Plants produce some Nitrogen for their own use but peas produce less than beans.
Beet family (Beet, Swiss chard, spinach, callaloo)	Heavy feeders
Cabbage family: Brussels sprouts, broccoli, cauliflower	Heavy feeders; side-dress 3 weeks after transplanting (side-dress broccoli a second time after central head is harvested to encourage small heads on side shoots).
Cabbage family: Cabbage, kale, turnip, collards	Medium feeders; side-dress 3 weeks after transplanting
Carrot	Light-medium feeder.
Lettuce	Medium-heavy feeder; romaine and crisphead types may require side-dressing.



# Your Guide To *Fertilizing*



Okra	Heavy feeder; side-dress after first fruits form.
Onion family: Onion and garlic:	Heavy feeders; side-dress onion once as bulbs enlarge and side-dress garlic twice- mid-April and mid-May.
Onion family: Leek	Light-medium feeder; side-dress in May or June.
Radish	Light feeder; avoid excess Nitrogen.
Squash family: Cucumber, squash, melon, pumpkins	Medium feeders; side-dress when fruits start to form.
Sweet corn	Heavy feeder; side-dress when plants are 12-18 inches tall and when plants start tasseling.
Sweet potato	Medium feeder.
Tomato family: Tomato, tomatillo, pepper, eggplant, potato:	Heavy feeders; side-dress when fruits or tubers first form.

\*Information from the Maryland HGIC





# Your Guide To *Plant Maintenance*

## Pruning

It's important to not allow your vegetable plants to get overgrown so that air can't circulate among the leaves and stems of the plant. Pruning some plants can even increase your harvest and reduce fungal and pest problems.

## Preventing Bolting

Some plants such as lettuce and basil will "bolt" when the weather warms up. This means that the plant quickly grows taller than its maturity and flower heads appear. You can sometimes prevent this by offering some shade protection during the hottest parts of the day.

Occasionally, if you catch a plant in the very early stages of bolting, you can temporarily reverse the process of bolting by snipping off the flowers and flower buds.



## Support

Some plants are healthier and more productive when supported by stakes, trellises, cages or other methods. These include:

- Pole beans
- Peas
- Tomatoes
- Gourds
- Cucumbers







# Troubleshooting



Healthy plants have fewer problems than unhealthy ones, but no matter how well you care for your garden, there are sure to be some problems that will affect your plants and threaten your harvest.

## Managing Problems Using Integrated Pest Management (IPM)

IPM is a research-based holistic approach to pest and disease management utilized by farmers, the USDA Extension service, and the landscape/gardening industry for decades. Many principles work well on a smaller scale for home properties and gardens.

IPM emphasizes biological (e.g., attracting beneficial insects), cultural (e.g., knowing the proper care of your plant), and physical (e.g., hand removal of insect pests and weeds) approaches to prevent problems and control pests and diseases at acceptable levels.

IPM also emphasizes monitoring and regularly inspecting your plants, which will allow you to catch most problems before they get out of hand.

## Beneficial Insects

Many of the insects you'll see in your garden are helpful. Just because you see a bug on your tomatoes it doesn't mean that's the one that's eating your plants.

Bees, butterflies, and some wasps pollinate the flowers to produce the vegetables you'll harvest later. Ladybugs and parasitoid wasps patrol the garden and feed on other insects that would harm your plants.

The Maryland HGIC provides good information regarding common vegetable garden pests [here](#).

\*The vast majority of plant issues are not caused by diseases or insects, but rather issues caused by weather, soil conditions, the environment, or care.



As human beings we know that staying well is a better experience than recovering from illness and injury. However, even the best garden maintenance techniques can't fully guarantee the health of your garden.



# Troubleshooting



## Unwanted visitors

In Central Maryland, deer, rabbits, groundhogs and other woodland creatures are common and often hungry garden visitors. Nothing is foolproof, but applying some strategies to protect your garden from unwanted visitors can help maximize your harvest.

- A fence may help keep creatures from your garden.
  - Keep in mind that deer are able to jump any fence less than 8 feet high, but even a shorter fence can discourage deer.
  - Having a well designed garden with less open space discourages deer by leaving less room for them to land safely inside the garden.
  - Bunnies and groundhogs will look to tunnel under the fence, so setting the fence into the ground or creating a trench of rock beneath can help to deter small creatures.
  - Be sure to check the integrity of your fence frequently and repair any areas where you see chewing or digging.
- Surround your garden with a wide band of stones or rocks since deer don't like to walk over stones.
- Consider using row covers to protect vulnerable plants in raised beds.
- Include plants that deter deer and other animals from your garden. Some examples of deer deterrent plants are marigolds, mountain mint, astilbe, daffodils, and snapdragons.

While repellent spray might encourage foraging animals to avoid your garden and eat other stuff, it's really not recommended for edible plants.



# Your Guide To *Harvesting*



Eating perfectly ripe produce directly from your own garden should be a joyful experience!

Timing is everything when it comes to picking your vegetables. Pick too soon or too late and the flavor, texture and nutritional value will be compromised.

## Harvesting Tips for Specific Vegetables

Beans	<ul style="list-style-type: none"><li>• Snap - Pods should be tender and break easily with a snap. Seeds should not cause pods to bulge.</li><li>• Lima - Seeds will be full size, and pods will be bright green.</li><li>• Dry - Pods should stay on the plant until dry and brown. Pick mature beans.</li></ul>
Beets	Dig out when roots are 1 – 3 inches in diameter
Broccoli	Cut 1 main head before flowers open, then cut small side heads (bud clusters) as they develop. Harvest with 6 – 8 inches of stalk.
Brussels Sprouts	Harvest after frosty weather for best flavor when sprouts are hard. Compact, deep green, and about 1 – 1 ½ inches in diameter. Twist or snap off the stalk, starting with the lowest sprouts which mature first.
Cabbage	Size varies with variety, soil fertility, and spacing. Harvest when firm. If unable to harvest at maturity, bend the plant at the crown to reduce incidence of head splitting.

# Your Guide To *Harvesting*



## Harvesting Tips for Specific Vegetables

Carrots	Pull when roots reach the desired size. Pull largest plants first to allow smaller ones to grow.
Cauliflower	Cut before flower sections begin to separate. It should be compact, firm and fairly smooth. Cauliflower will keep better if you include a ruff of leaves around the head. Fall crops are generally more productive than earlier ones.
Chard, Swiss	Cut leaves when they are mature, leaving the crown to re-grow.
Cucumber	Turn cukes parallel to the vine and give a quick snap. Avoid working the vines when wet to prevent spreading of disease.
Eggplant	Cut stems with sharp knife before fruit is not fully mature – about 2/3 of the maximum size. Fruit is ripe when the side is pressed slightly with a thumbnail and an indentation remains. Discard over-ripe fruit with dull color with brown seeds and remove mature fruit from the plants to maintain productivity.
Garlic	Lift plants with a garden fork when leaves collapse in late June or early July. Don't knock the tops over prematurely. Allow to dry in a well-ventilated location out of direct sun. After a few days of drying, cut off the tops and lay the bulbs on a window screen in a ventilated area to finish drying.
Sweet Potatoes	Use the edible foliage in a green salad or sauté with other vegetables. Harvest roots after they reach eating size (80 – 85 days from planting) and before a frost. Dig vines hit by frost immediately. Temperatures below 55 degrees F can cause injury.

# Your Guide To *Harvesting*



## Harvesting Tips for Specific Vegetables

Leeks	With their large root systems, it may be easier to dig than pull. Harvest at any size up until a killing frost. If covered with mulch, they can be dug throughout the winter.
Kale, Collard, Mustard and Turnip Greens	Harvest outer leaves, young leaves or entire plants.
Lettuce	One way to harvest lettuce is the cut-and-come-again method. Shear plants at the soil with scissors when they are 6 – 10 inches tall. Fertilize and keep watered; they should be ready to re-cut in 2 – 3 weeks.
Melons	All melons will rot if left on the ground too long. Harvest muskmelons when the stem separates easily at the point of attachment to the plant. Cut honeydew and Crenshaw off the vine after they turn completely yellow. Indicators that watermelon is ready for harvest are a yellow underside where it meets the ground, and a dead tendril or curl near the point where the melon attaches to the vine.
Okra	Wear gloves to protect your hands from these spiny plants, and cut 3- to 4- inch long pods before they get woody (about 1 – 3 days after flowering). Be sure to remove any over-mature pods so the plant will continue to bloom.
Onion	Harvest green onions when the tops are 6 inches tall. For bulb onions, pull when about 2/3 of the dried tops have fallen over. Handle carefully to avoid bruising which can cause rot. Keep the pulled onions in the garden for several days to dry, then cure in a well-ventilated attic or porch out of direct sun for 1 – 2 weeks.

# Your Guide To *Harvesting*



## Harvesting Tips for Specific Vegetables

Peas	<ul style="list-style-type: none"><li>• Garden peas: harvest and shell when pods are plump and well-filled but before they become starchy.</li><li>• Snow peas: harvest - pods are large and flat but before seed begins to enlarge.</li><li>• Snap peas with edible pods – when pods are succulent and seeds are small.</li></ul>
Peppers	Harvest with a knife when they reach full size. Many varieties can be left until they turn red, yellow or another color which also increases Vitamin A and C. Entire plants may be pulled just before a killing frost and hung upside down in a warmer area or garage to ripen.
Potatoes	Dig early potatoes when large enough to eat. For storage, harvest two weeks after the vines die down or just after the first light frost. Leave on the ground for a few hours before bringing inside and do not wash prior to storage.
Radishes	Pull when about one inch in diameter before they become cracked or pithy.
Spinach	Use thinnings when small. Cut full-sized leaves and new leaves will grow from the crown.
Summer Squash	Varieties include straight-neck, crooked-neck, patty pan, zucchini. Harvest when immature, 6 – 8 inches long or 1 ½ inches in diameter. If the rind is too hard to be marked by the thumbnail, it's over-mature. Remove old fruit to allow new fruit to develop. Check plants daily once they begin to set fruit.
Tomatoes	Harvest as soon as fruit color begins to change. This prevents many fruit problems (cracking, splitting, insect feeding, diseases) and increases the yield of edible fruit. Tomatoes will finish ripening on your kitchen counter. You will not be able to tell the difference between fruits ripened indoors compared to fruits that ripen on the plant. Light is not necessary for ripening mature tomatoes.

# Resources

**The Community Ecology Institute** offers numerous workshops and trainings throughout the year that cover various gardening topics.

## Some of those workshops include:

- Nourishing Gardens 5-Week Introduction to Gardening Class that includes weekly classes, videos and reading content, and hands-on learning opportunities.
- Nourishing Gardens 5-Week Intermediate Gardening Class that includes weekly classes, video and reading content, and hands-on learning opportunities.
- Introduction to seed starting
- Edible Landscaping
- Gardening for pollinators



NOURISHING GARDENS

## Intermediate Gardening



Monday, May 8 - Saturday, June 10

Topics include:

- Permaculture design techniques
- Weeds, Pests, and Disease
- Edible landscapes, natives, and pollinators
- Soil health and seed starting
- Using your harvest

Monday night classes, course materials, and hands-on training included

**The University of Maryland Extension Service (UME)** is a statewide, non-formal education system within the College of Agriculture and Natural Resources and the University of Maryland. They provide a wide range of research-based information and resources to new and experienced gardeners alike.

- The Master Gardener Handbook is provided to all incoming Master Gardener trainees and is available to borrow from most libraries. Some of the information in this guide was adapted from this handbook.
- The Maryland Home and Garden Information Center is a user-friendly website operated by the Maryland Extension Service that provides practical, research-based advice to gardeners.