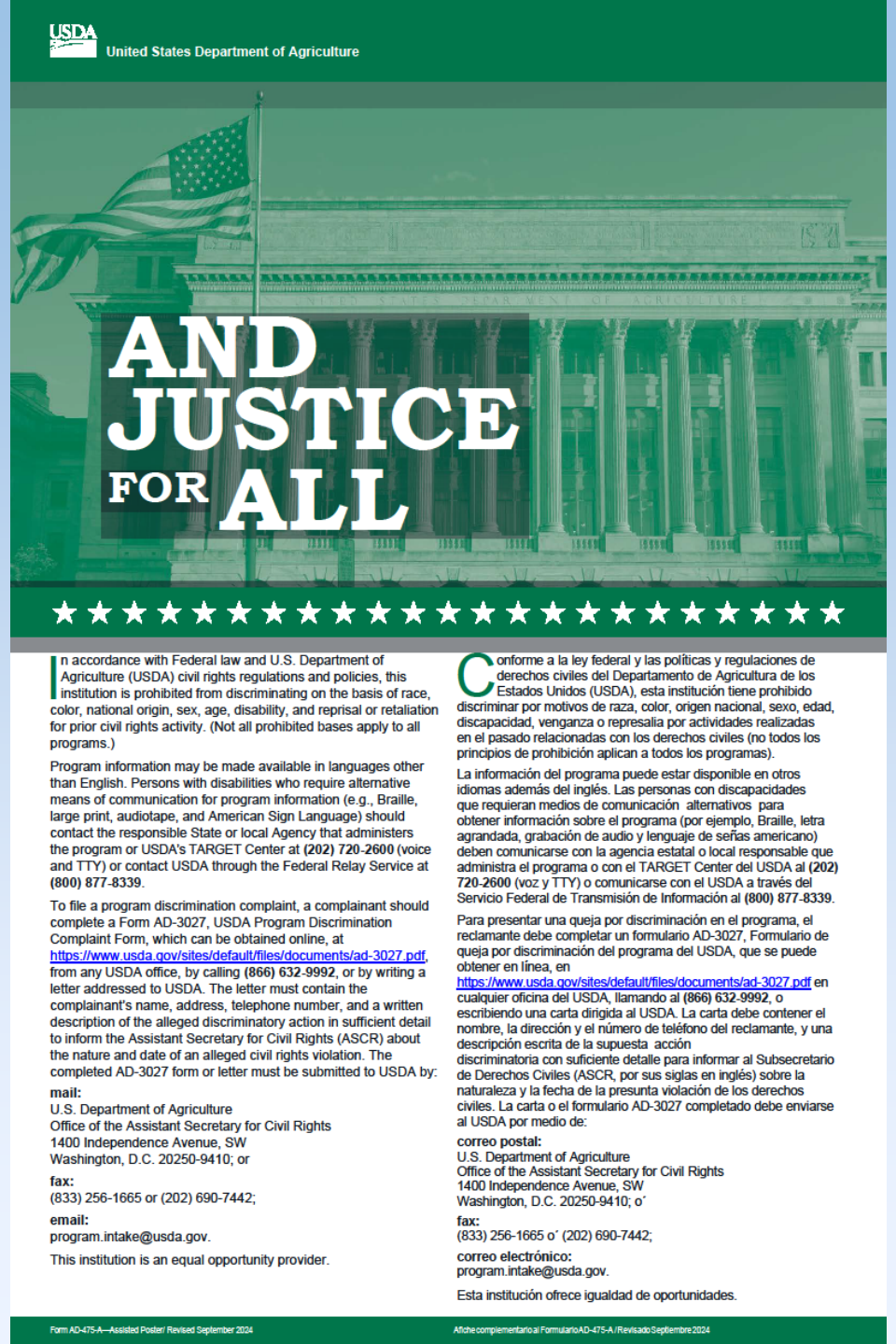
Winterizing the Vegetable Garden and Composting

University of Maryland Extension Master Gardeners of Charles County

UNIVERSITY OF MARYLAND EXTENSION

GROW IT · EAT IT

A MASTER GARDENER PROGRAM



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MASTER GARDENER

Master Gardeners of Charles County
GROW IT EAT IT (GIEI) Education Project Team

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Welcome

The mission of the University of Maryland Extension Master Gardener Grow It Eat It (GIEI) Program is to promote backyard and community food production.

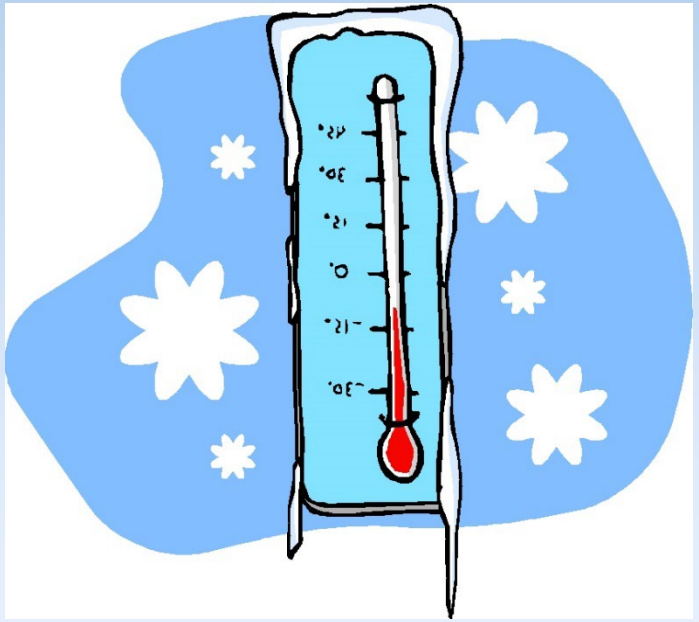
Master Gardeners teach classes and workshops, develop demonstration gardens, and educate Marylanders on how to produce their own affordable and healthy food using sustainable gardening practices in their homes, communities, and school gardens

Tentative Agenda

- Introductions – Maryland's HGIC
- Finishing the Summer garden – Harvesting, storing, saving seeds
- Preserving Herbs - Drying Demo
- Maintain Fall Crops and plant garlic
- Clean up Summer Garden
- Questions and Break
- Prepping the garden bed for spring, Soil Testing
- Cover Crops
- Protecting small fruit plants, berries
- Other winter Garden Tasks
- Composting
- Questions

Winter in the Vegetable Garden – What's Next?

- Finish up the summer garden and attend to any Fall crops
- If you are NOT growing Fall crops in the garden bed, it's best to prepare it for next Spring
- Actions taken now, before winter sets in, can make your Spring Vegetable Gardening easier and more productive.



Finish Summer harvesting

Harvest any remaining warm season vegetables; These include tomatoes, peppers, cucumber, squash, melon

Harvest any tender herbs (e.g. Basil) and use, dry, or freeze them.

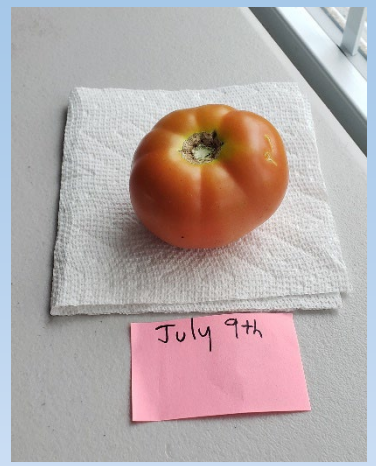
Photo – Canva, SD State University

Full size green tomatoes, can finish ripening indoors. Placing them in a bag with an apple or banana (which release ethylene gas) will speed ripening

NOTE <u>Carrots</u> can be over-wintered in the garden by covering the bed with a deep straw or leaf mulch. Pull carrots through the winter as needed

Ripening the last of the tomato harvest

Picked Husky Red tomato as color began to show July 7th.



After two days
July 9th

After five days
July 12th

After eight days
July 15th – fully ripe

Tomatoes that have reached the Breaker Stage (full sized and just showing color) can be ripened indoors

Placing green tomatoes in a bag with an apple or banana (which release ethylene gas) will speed ripening

Saving seeds from your Summer Garden

- Save seeds from healthy, fully ripe fruit from OPEN POLLINATED Cultivars
- Seeds saved from hybrid (F1 cultivars) between two different varieties and will not "come true" (resemble parent plant) when planted out the following season.
- Seeds saved from non-hybrid (open-pollinated) cultivars of plants that normally cross-pollinate (e.g., cucumbers, melon, squash, corn) MAY produce off-types when planted the following year. If you want to save viable seeds from these plants, you can only grow one variety during any given season.

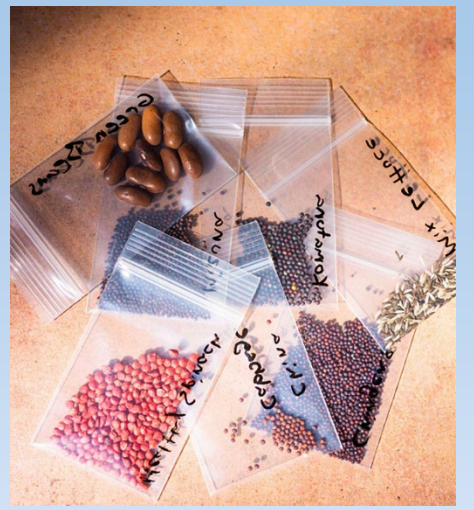


Photo – Canva, SD State University

Information on saving seeds can be found in the resources slide at the end of this presentation

Vegetable Seed Saving

Choosing Seeds to save

Tomatoes, peppers, beans and peas are good choices for seed saving. They have self-pollinating flowers and seeds that require little or no special treatment before storage.

Take seeds from the healthiest-looking plants. You can also select for a particular desirable trait.

Photo – J Gibbons, University of Idaho Extension

Don't store seed in damp or in open containers.
Don't skip drying: moisture = mold
Be sure to label seeds before storing

2025 -Year of the HERBS

This year in the Master Gardener Grow It Eat It program, we are celebrating all things herbs!

Herbs are obtained from the leaves of herbaceous (non-woody) plants. They are used for savory purposes in cooking and some have medicinal value.

Spices are obtained from roots, flowers, fruits, seeds, or bark of woody or herbaceous plants. Spices often are more potent and stronger flavored than herbs

Many herbs, such as Parsley, Chives, and Cilantro, can tolerate cool temperatures especially with protection.
Other herbs, like Dill,have a short Days to Maturity (DTM), and can be planted in late summer and harvested before frost.
Cold hardiness and DTM vary with variety. Check the seed packet for details.

Drying Herbs from the garden

- The best time to harvest herbs for drying is just before the flowers first open
- Gather herbs in the early morning after the dew has evaporated to minimize wilting.
- They should not lie in the sun or unattended after harvesting
- Label the herbs to be dried when you pick them because after they are dried many herbs look alike.
- Rinse the herbs in cool water and gently shake to remove excess moisture. Discard all bruised, soiled or imperfect leaves and stems.

Photo Penn State Extension

Drying Herbs from the garden - Demonstration

Materials Needed:

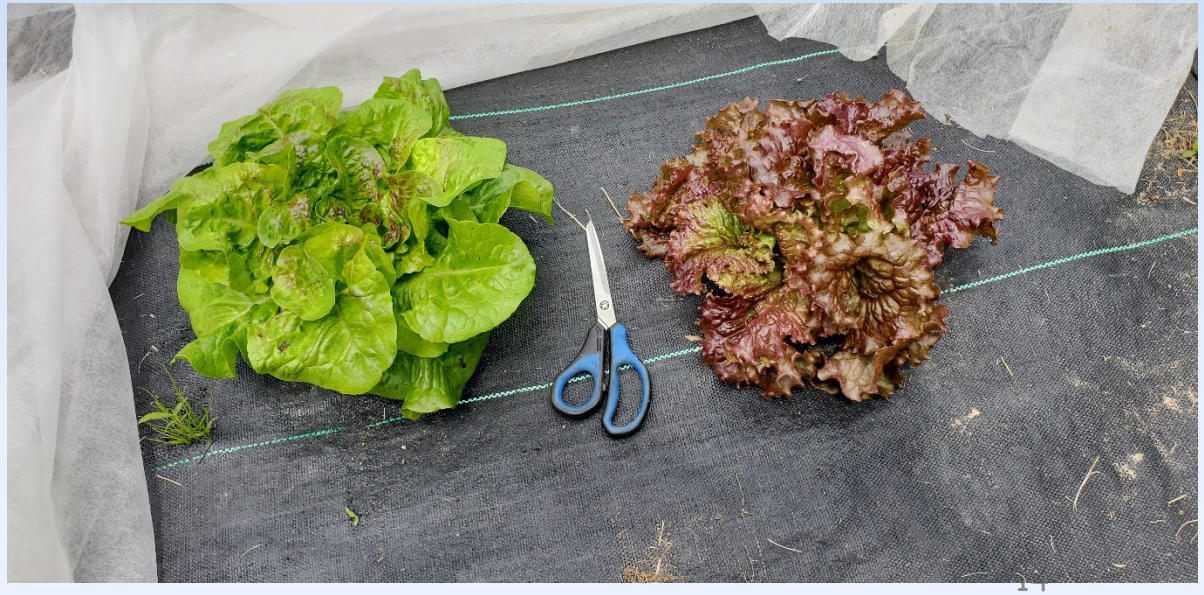
- Brown Paper Bags
- Scissors
- String
- A pen
- Herbs

Photo IA State Univ Extension

If You have Cool Crops in the garden

Harvest cool crop greens frequently to keep a supply growing if the weather is warm enough

Monitor the weather and consider using crop protection if frost is predicted.



Monitor Fall Crops for Pests

Cabbage Looper Larvae

Many cool weather crops can be damaged by Leafminers, flea beetles, and various caterpillar pests like cabbage loopers, diamondback moths, cross-striped cabbage worms, armyworms, and imported cabbage worms.

Management strategies –

- Clean up and dispose of unharvested plants, plant debris, and mulch that can harbor pests
- Use row covers to exclude pests
- Use BT on caterpillar pests if the damage is significant.

Caterpillar damage on cabbage

Pests of Cool Weather Crops
Beet and Spinach Leafminers

https://youtube.com/shorts/vSxXNRSASQg?si=Bgk28kYFmlTHSoqS

Pests of Cool Weather Crops

Imported Cabbage Worm

https://youtube.com/shorts/urjOWildAhg?si=1M8rvjv9YBNgAmIL

A good crop to plant in cold weather: Garlic

Plant individual cloves mid-late October so they have time to grow roots and a few leaves before cold weather sets in

Purchase certified, disease-free garlic bulbs for planting from reputable seed sources. Don't use store bought garlic.

Harvest when plant tops begin to die back in late June to early July.

Planting Garlic

https://youtu.be/MC6VWguUVNM?si=SBAQX5-YUH23KP5c

Remove Summer vegetable debris

Remove **diseased or insect-infested** plant material that may shelter overwintering states of these pests. This will reduce the potential for disease problems in next year's garden.

Early Blight

Squash bug

This debris should be **bagged and put out in the trash** and NOT put in the compost pile. Only really hot compost piles (actively managed) will kill off potential problems.

Can Summer Vegetable debris stay?

Plants that are not diseased or harboring pests can provide valuable organic matter for next year

Pull Plants and run a mower over them so they are chopped into smaller pieces and spread over the ground on the garden. They will decompose over the winter, returning nutrients to the soil.

These plants can also be composted, and the finished compost used next season.

NOTE: Be sure the plants you compost are free of diseases and pests. In our warm, humid climate, blight, mildews, and viruses are very common by the end of the summer. If in doubt, bag it and put in the trash.

What about "leaving the leaves" and plant debris for wildlife ?

This recommendation is for

- fallen (not diseased) tree leaves
- flower stalks (especially native flowers)
- native grasses

all of which can provide seeds, shelter, and insect larva for hungry birds and some beneficial insects.

Photo – OK State University

But debris from VEGETABLE Gardens requires more careful inspection and consideration.

BREAK and questions

Preparing the Garden Bed for Spring

Get a Soil Test and apply recommended amendments

Fall is a great time for Soil Testing

- Soil is usually less wet than in the spring, so collecting samples is easier
- Recommended amendments have time over winter to be absorbed into the soil
- Soil testing labs are usually less busy than in the Spring

IMPORTANT PREP -- Test the Soil

What is a Soil Test?

Chemical analysis estimating a soil's ability to supply nutrients.

- Provides baseline data on and interpretations of soil pH, nutrient levels, and organic matter content
- Includes levels of soil's primary macronutrients, phosphorus (P) and potassium, (K) and trace elements such as calcium (Ca) and magnesium (Mg)
- Provides recommendations for adjusting soil pH and fertilizing including Nitrogen

NOTE: UMD recommends testing soil for Lead (Pb) contamination. Desired levels are less than 400ppm in bare soils. See Resources for more information.

Test the Soil cont'd

When should the soil be tested?

- If in-ground, at least every 3 years or new area.
- Purchased/bagged soils shouldn't need testing, if from reliable sources
- Bulk topsoil should be tested. Topsoil is unregulated in MD

Who should test the soil? (Which lab?)

- They vary! See list in resources from UMD Extension
- DIY test kits are not recommended- test interpretation can be complicated

Preparing the Garden Bed for Spring

Use Sheet Mulching to reduce weeds and enrich the soil

This method uses up large amounts of locally-available organic material, does not require turning, and boosts the earthworm population.

- Place overlapping sections of newspaper or unwaxed corrugated cardboard over the entire area.
- Cover with 8 inches of one or more of the following: compost, aged manure, shredded leaves, or grass clippings (avoid weeds with seedheads and herbicide-treated turf).
- In spring, you'll be able to plant directly into the soil without the need for rototilling.




Cover the Garden Bed in Winter

- **Don't leave the soil bare.** Cover the soil with shredded leaves or some other type of mulch to prevent erosion.
- Cover crops are preferred, but shredded leaves are a good alternative. Rake leaves into a loose pile and mow over them with a lawnmower. They will be less likely to blow away if they are broken up.
- They can be worked into the soil next spring or seedlings can be planted through them. The mulch will act as a weed inhibitor.

https://bcfarmsandfood.com/extend-the-growing-season/

Preparing the Garden Bed for Spring

Grow a cover crop ("green manure") in the garden bed

- Cover Crops lessen soil erosion, add organic material when turned under in the spring, improve soil quality, and add valuable nutrients.
- These crops are typically planted no later than October 10th so they make some growth before the first hard frost.
- The crops are turned into the soil before going to seed, usually sometime in late April or early May.
- To sow a cover crop while vegetable crops are still producing, remove mulch from around plants, smooth the area and plant. Your cover crop will get a good start but will not interfere with vegetable plant growth
- Some cover crops are sown in the spring or summer to cover and improve bare soil.

Preparing the Garden Bed for Spring

Common Cover Crops for Vegetable Gardeners

Cover crops for vegetable gardens

Type (L = legume)	Amt. (oz.) to Sow per 100 sq. ft.	When to Sow**	When to Turn Under	Notes
Barley	3 - 4	spring or late summer/ fall	spring	Not as hardy as rye. Tolerates drought
Buckwheat	3 - 4	spring or summer	anytime	Grows quickly. Will reseed itself. Not hardy.
Crimson clover*** (L)	1 - 2	spring or late summer/ fall	fall or spring	Beautiful spring blooms.
Forage radish* (a type of daikon radish)	1 - 2	late summer/fall	spring	Large white roots break up clay soil. All parts are edible. Monitor for harlequin bug.
Spring oats*	3 - 4	spring or late summer/fall	summer spring	Not cold hardy, tolerates low pH.
Winter rye	3 - 4	late summer/fall	spring	Very hardy. Produces a massive root system. Cover crop that can be planted the latest in the fall.
Hairy vetch (L)	3 - 4	late summer/fall	spring	Slow to establish. Very hardy. Till under at bloom, can become a weed.
Winter wheat	3 - 4	late summer/fall	spring	Easier to manage and terminate in spring than rye or barley.

*Will winter-kill in most years, leaving a "mat" of dead vegetation which can be planted through in spring or turned under.
**Sow late summer/fall crops from August 15- October 1, depending on location, species, and weather forecast.
*** Legumes, like crimson clover and hairy vetch, together with special soil bacteria, transform nitrogen from the air into a plant-available form. You can aid this natural process by purchasing an inoculant with your seed - Rhizobia spp. bacteria. You coat the cover crop seeds with the inoculant by mixing them together in a bag.

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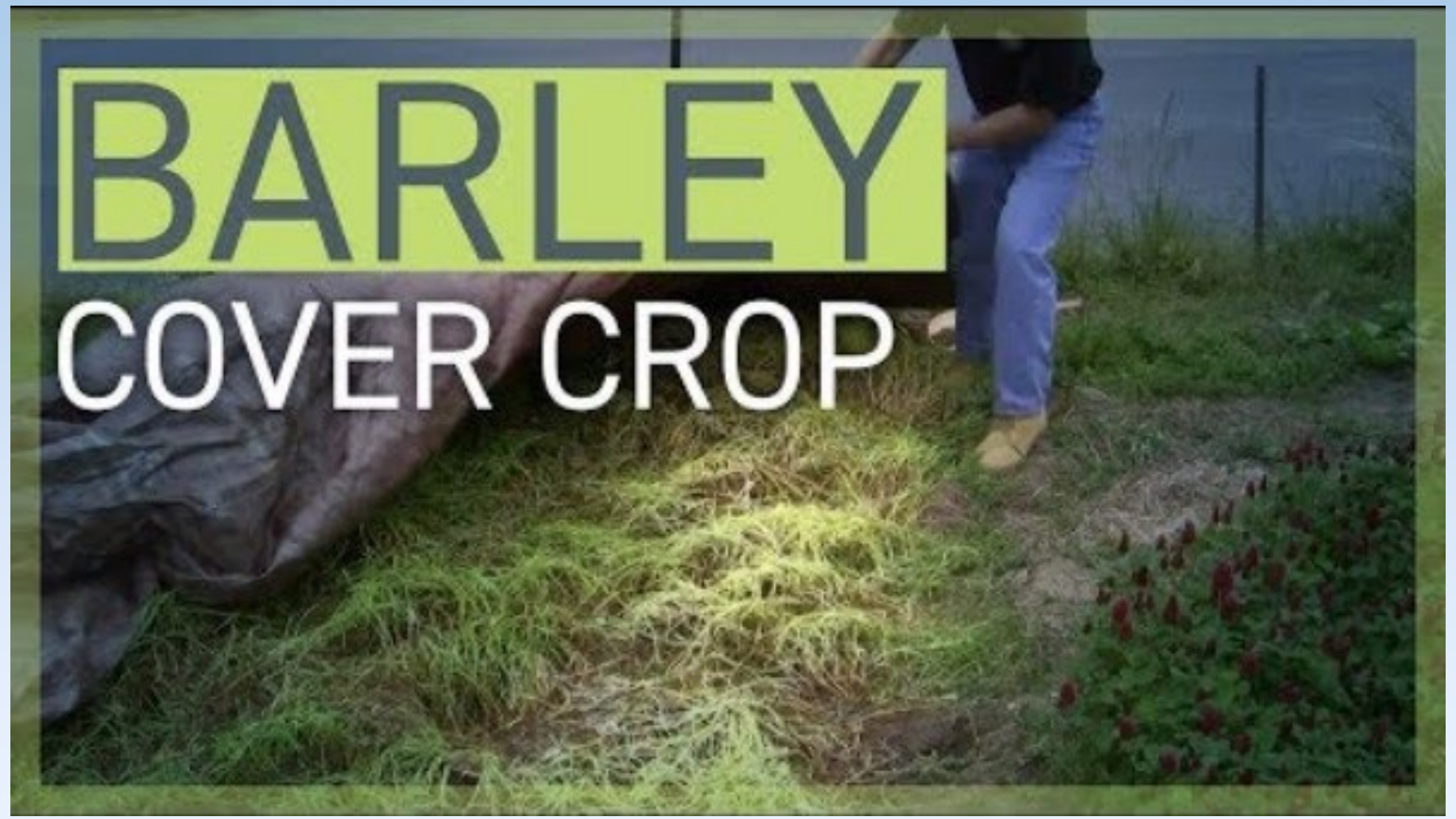
Cover Crops - Barley



https://youtu.be/s6dIv6oykIo?si=hEkDeoxf3Ysl_1B9

Cover Crops – Crimson Clover

https://youtu.be/lMsktDMxkKk?si=7sK0-LTN8t7LDkmJ

How do Plants Prepare for Cold Weather?

- shed their leaves and move nutrients and carbohydrates to their roots
- protect their cells by controlling how ice crystals form within their tissues
- accumulate sugars & proteins within the cells which will lower the freezing point and prevent or slow the growth of ice crystals

Protecting Small Fruit Crops in Winter

Repeated freeze/thaw cycles are the main threat to a berry plant's survival!

So, the overall best solution for most berries is MULCHING!

Why?

- acts as insulation for the soil
- regulates temperature fluctuations
- prevents deep freezing of roots

Other options

- floating row cover (medium thickness)
- burlap to wrap

Protecting Small Fruit Crops in Winter

Crop	Type	
blueberries	straw (NOT hay)	Keep mulch away from shoots. Extend 12" out from drip line to protect shallow roots.
blackberries	pine needles	4-5" around the base of each plant
raspberries	wood chips	
strawberries	bark mulch	3-5" straw is best; avoid leaves as they can mat together in layers, trapping air and creating space for ice to form

container grown plants will need extra protection to retain heat and prevent freezing

Other Winter Tasks for Vegetable Gardeners

Clean, Sharpen, and store tools

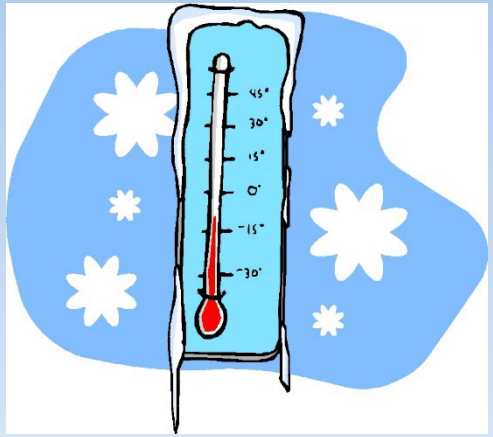
Photo – Univ of MN Extension

Prevent the spread of disease between plants by thoroughly cleaning and disinfecting your tools, equipment and garden implements.

Clean items well before disinfecting; Dirt and debris left on tools will interfere with the disinfection process and reduce its effectiveness

***Caution about disinfectants**: Chemicals used to disinfect can have harmful fumes and burn skin. Read the label, use as directed, and wear personal protective equipment like goggles and gloves when the label recommends doing so.*

Winterize garden watering systems



Before any predicted Freeze:

- Drain water from hoses and irrigation tubes and tape and disconnect hoses from faucets.
- Remove any rigid plastic irrigation fittings, drain, and store

If you need to water the garden in winter during a warm dry spell, be sure to drain and store the hose again before the next freeze.

Flexible hoses and drip tapes, emptied of water, can be left outside, but will last longer if stored in a shed or garage

Other Fall Tasks for Vegetable Gardeners

Clean and store containers used for plants

Containers can carry diseases in soil and debris.

Be sure to clean the entire pot, inside and out.

Remember - pathogens are microscopic and, while your tools and containers may look perfectly clean, these microorganisms may still be present.

Photo – Univ of MN Extension

Other Fall Tasks for Vegetable Gardeners

Make Notes about the past season

Reviewing what happened in the summer garden while it is fresh in your mind will give you better information for next year.

What did you plant that did well?
What vegetables and herbs did you plant that you didn't like?
What pests and diseases did you experience, what time of year, and in what crops?
What equipment, chemicals, or tools did you wish you had? The end of the gardening year is a good time to buy these things on sale at stores and online.

How to Start Composting

Composting is turning food and yard waste into a nutrient-rich product to improve soil and plant health.

Why Compost?

- Composting reduces the amount of waste going to landfills and incinerators.
- Compost is a free soil amendment that saves gardeners money.
- Compost improves soil structure, aeration, and water-holding capacity and contains a wide range of plant nutrients.
- Compost can reduce some soil-borne diseases in your garden.
- Compost "feeds" the soil food web for healthier plants.

Composting – What You Need

- A place for compost piles/bins outside on well drained soil.
- Totes, bags, recycled containers or garbage pails to collect scraps in house and carry scraps from house to bin.
- Compost bin. Basic compost structures can be as simple or complex as desired. They range from a simple heap or pile, a wood pallet or snow fence structure, wire structure, or a purchased composter, available online or at garden centers and big box stores.
- Compostable Materials – See the "Compostable Materials" slide.
- More Information – See the "Compost Information" slide.

Compostable Materials

Compostables are divided into three main categories: greens, browns and water.

Greens include food scraps such as apple cores, leafy greens, onion skins, corn cobs and husks, egg shells, banana peels, chopped potatoes, squash, pumpkins, coffee grounds and any other refuse from fruits and vegetables, including weeds (except perennial weeds) that are plucked from the garden.

Browns include trees, branchy plants, leaves, shredded paper, newspaper, sawdust, nut shells, coffee filters, straw, small sticks and twigs, wood chips and empty cardboard tubes. For faster composting, the smaller the pieces, the better.

Compostable Materials

A compost pile is a living ecosystem and needs the right balance of ingredients and adequate **water** to function. The goal is for the compost pile to be damp, like a wrung-out sponge. A compost pile should have good drainage.

Your compost pile should have both browns and greens. A mixture of materials containing 30 parts of browns to 1-part greens is considered ideal[1]. The brown materials provide carbon for your compost, the green materials provide nitrogen, and the water provides moisture to help break down the organic matter.

https://extension.umd.edu/resource/how-make-compost-home/

Composting

*What **NOT** to Compost*

- Meat or fish bones and scraps
- Fats, grease, lard or oils
- Dairy products (for example, butter, milk, sour cream, yogurt) and eggs
- Pet and Human wastes (for example, dog or cat feces, soiled cat litter)
- Yard trimmings treated with chemical pesticides
- Diseased or insect-ridden plants
- Weeds with mature seed heads attached
- Charcoal briquettes

https://www.ndsu.edu/agriculture/extension/publications/how-compost

Compost Information

- The University of Maryland has a lot of composting information. How to Make Compost at Home | University of Maryland Extension (umd.edu)
- Charles County offers composting workshops. The workshops often quickly fill up.
  - https://extension.umd.edu/locations/charles-county/master-gardener/composting/
- Oregon State has a great site describing different types of composting that gives you a lot of what you need on two printable pages.
  - https://extension.oregonstate.edu/gardening/soil-compost/do-rot-thing-choosing-using-composting-system
- Cornell University has a very detailed web site (12 pages) concerning composting.
  - https://ecommons.cornell.edu/server/api/core/bitstreams/85e69d31-7e38-43c5-bd5a-35f225f6f92a/content

Questions

Resources

- Charles County Master Gardener's Grow It Eat It webpage.
- Home and Garden Information Center | University of Maryland Extension (umd.edu)
- Ask Extension | University of Maryland Extension (umd.edu)
- Extensión en Español – Blogs de Extensión de la Universidad de Maryland (umd.edu)
- A step-by-step guide to saving seeds | OSU Extension Service
- Seed Saving Veggies Resources.pdf (umd.edu)
- UMDHGIC – YouTube
- Drying herbs | OSU Extension Service
- Cover Crops For Gardens | University of Maryland Extension (umd.edu)
- Clean and disinfect gardening tools and containers | UMN Extension
- How to Make Compost at Home | University of Maryland Extension (umd.edu)
- How do Plants Prepare for Winter University of Illinois Extension
- Iowa State Extension

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What are HGIC and Ask Extension?

The University of Maryland Extension Home and Garden Information Center (HGIC) includes:

- Gardening & IPM pages
- Maryland Grows blog (also Extensión en Español – Blogs de Extensión de la Universidad de Maryland (umd.edu))
- HGIC YouTube channel UMDHGIC - YouTube
- HGIC Quarterly Newsletter – Subscribe!
- Social Media pages
- Monthly Tips Monthly Gardening Tips | University of Maryland Extension (umd.edu)
- Ask Extension- answers to garden and pest questions

UME Resources

UNIVERSITY OF MARYLAND EXTENSION | HOME & GARDEN INFORMATION CENTER

go.umd.edu/hgic

ASK EXTENSION
SEND YOUR GARDENING QUESTIONS

go.umd.edu/askextension

MARYLAND GROWS BLOG

marylandgrows.umd.edu

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go.umd.edu/mg

LOCAL PROGRAMS

go.umd.edu/mglocalprograms

MASTER GARDENER HANDBOOK

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