Horticulture Newsletter

Martin-Gatton College of Agriculture, Food and Environment
University of Kentucky.

Cooperative Extension Service
McCracken County
2025 New Holt Road
Paducah, KY 42001
(270) 554-9520
Fax: (270) 554-8283
extension.ca.uky.edu

Mary Dossett
Agent for Horticulture

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Master Gardener Spotlight

Tammie Winkler

Class of 2016

Cooperative Extension Service

Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Lexington, KY 40506

Why Leaves Change Color In The Fall

Source: Sharon Flynt, UK Extension Horticulture Agent

Fall is one of the most beautiful seasons of the year, as tree leaves change colors to bright oranges, vibrant reds and eye-popping yellows. Trees that change color in the fall are deciduous trees. They go dormant in the winter to protect the tree from freezing temperatures and will generate new leaves in the spring.

Three factors cause the tree leaves to change color at this time of year: length of night, leaf pigments and weather. Length of night is the only constant of the three. Following the summer solstice in June, the daylight shortens in the Northern Hemisphere and nights become longer. The increasing length of night triggers certain reactions in trees and leaves.

In conjunction with sunlight, chlorophyll, which produces the green color in leaves, and carotenoids, which give us the orange, yellows and browns, are working all summer to produce food for the tree. After the solstice, night length steadily increases, causing excess plant sugars to build up and chlorophyll production to slow down and eventually stop in the leaf. When chlorophyll production ceases, the carotenoid pigments are unmasked, and any anthocyanins in the leaf start producing reddish purple colors in response to bright light, giving the leaves their fall colors.

As time passes, a cell layer between the leaf petiole, which connects to the tree's stem, begins to close. Once that cell layer completely closes, the leaf drops, closing off any openings into the tree and protecting it from winter's freezing temperatures and harsh winds.

Fall color vividness depends on temperature and moisture. Sunny, warm days, cool nights and soil moisture in early fall produce the most color. This combination of moisture and temperature produce a vast array of color, and that's why no two autumns are ever alike.

For more information on your local trees, contact McCracken County office of the University of Kentucky Cooperative Extension Service.

Photos from pixabay.com

NEP-241

Growing Your Own
A beginner's guide to gardening

Garlic

Garlic is a flavorful garden vegetable used in countless recipes. In Kentucky, plant garlic in October and early November. Leave it in the garden for the winter, then harvest in early to mid-summer when leaves begin to turn yellow and brown at the tips.

Types

Garlic is most often grouped into hardneck and softneck types. Hardneck garlic also grows edible flower stalks called scapes with bulbils at the top. Bulbils are tiny garlic bulbs inside the flower head.

Varieties

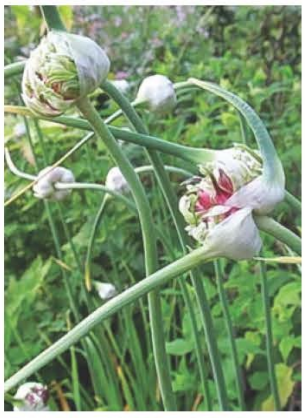
Hardneck varieties are more cold hardy than softneck, but both perform well in Kentucky. Softneck varieties often store much longer than hardneck. Try these varieties, but others may also do well.

- **Music** (hardneck) is a very popular garlic with classic garlic flavor. It also stores well.
- **Bogatyr** (hardneck) forms smaller bulbs with outer skin that is purple striped.
- **Polish** (softneck) produces very large bulbs with white skin. It offers good storage and strong flavor.
- **Inchelium Red** (softneck) produces large bulbs with mild flavor that are excellent for storage.

Music garlic
Johnny's Selected Seeds

Garlic scapes
Jann Knappage, University of Kentucky

Garlic in the garden
Jann Knappage, University of Kentucky



Garlic bulbils
Ashley Adamant

Cooperative Extension Service

USDA Supplemental Nutrition Assistance Program
Putting Healthy Food Within Reach

This institution is an equal opportunity provider.

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EFNEP

This work is supported by the Expanded Food and Nutrition Education Program from the USDA National Institute of Food and Agriculture.

How much to plant

A five-foot row should yield eight to 12 heads (bulbs) of garlic.

How and when to plant

Plant garlic in an open, sunny spot with well-drained soil. In Kentucky, garlic is planted in the fall, mostly in October through early November.

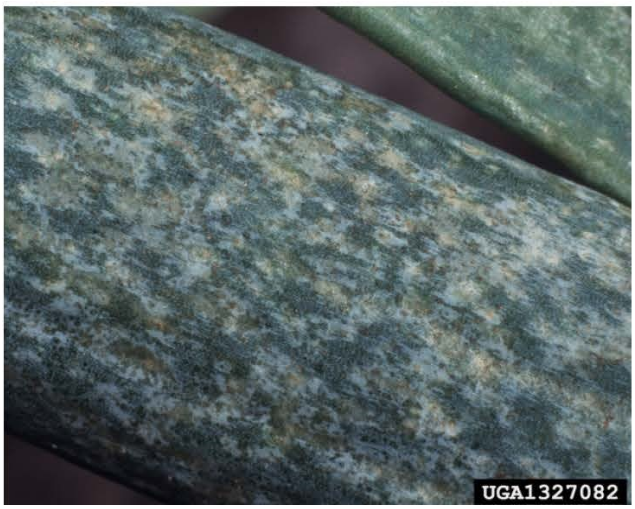
Garlic grows best with added nutrients. Starting in spring, add a slow-release fertilizer or compost, or use a water-soluble fertilizer according to the product label.

A clove of garlic, at right, separated from the head or bulb
Jann Knappage, University of Kentucky

Garlic Planting		
Rows: 12 to 18 inches apart	Spacing: 6 inches apart	Depth: 1 to 2 inches
Safe Planting Dates		
Region	**Earliest**	**Latest**
Eastern Kentucky	Oct. 1	Nov. 1
Central Kentucky	Oct. 1	Nov. 7
Western Kentucky	Oct. 1	Nov. 15

Pests and disease

If you see tiny, speckled holes or twisted leaves, you may have thrips. Onion maggots can also affect garlic bulbs if you grow onions or garlic in the same location for many years. Please see UK Cooperative Extension publication *Home Vegetable Gardening in Kentucky* (ID-128) at http://www2.ca.uky.edu/agcomm/pubs/ID/ID128/ID128.pdf or contact your Extension agent for tips to control pests.



Close-up of thrips feeding damage on leaf
Alton N. Sparks, Jr., University of Georgia, Bugwood.org, CC BY 3.0

Harvesting

In addition to garlic bulbs, you can also eat garlic leaves, scapes, and bulbils, which all have a garlic taste. You can harvest these while the plant is growing, and you can use them like garlic cloves. Be sure to harvest only some leaves in order for the plant to still grow and produce big garlic bulbs.

Bulbs start to mature in late June to mid-July the year after you plant them. When several leaves begin to yellow and tips turn brown, garlic bulbs are ready to harvest. With care, loosen the soil around the bulbs. Gently pull the stalk to remove the bulb from the ground. Shake off excess soil and place in a shaded area to cure (dry) for about two weeks. Once dry, you can braid the tops together or tie them for storage, or you can remove the tops. Keep some bulbs to plant for next year's crop.

Harvesting garlic
Jann Knappage, University of Kentucky

Onion thrips and damage
Ric Bessin, University of Kentucky Cooperative Extension

Garlic stacked to dry
Jann Knappage, University of Kentucky

Garlic bulb
Jann Knappage, University of Kentucky

Storing

Store garlic in a cool spot with good airflow. Put garlic in mesh bags, wooden crates with slatted sides, or other storage that gives good airflow. You can hang braided garlic to store. Well-dried garlic should keep for six to seven months.

Serving

People in many cultures have treasured garlic for its strong flavor and smell. Garlic has chemicals that may help fight long-term health issues like cancer, heart disease, and diabetes. Almost every cuisine around the world uses garlic.

You can eat garlic raw or cooked. You can roast or grill whole heads of garlic. And you can pickle garlic cloves or infuse them into oil. Garlic powder is used for cooking and in health supplements. You can also find garlic in soups, salad dressings, and sauces.

To use garlic cloves, divide the cloves and remove the papery skin from each one. Five seconds in the microwave will make the skin easy to remove. Cut off the hard root end. Cut, crush, use a garlic press or use whole cloves.

To use garlic greens or scapes, wash and cut. They can be eaten raw or cooked.

Clean up

Pull out any leftover plants. Compost healthy plant material. Throw away any diseased plants.

Garlic hung for storage
Jann Knappage, University of Kentucky

Head of garlic cloves
Erika Olsen, University of Kentucky

Summary

Varieties
There are two types of garlic: hardneck and softneck. Both grow well in Kentucky. Music and Bogatyr are two recommended types. Softneck types store longer.

How much to plant?
A five-foot row should grow eight to 12 heads of garlic.

How and when to plant?
In Kentucky, plant garlic from October to early November and harvest the next summer. Plant cloves of garlic in well-drained, sunny soil. Space six inches apart and plant one to two inches deep.

Pests and diseases
Watch for thrips.

Harvesting
You can harvest garlic greens and scapes (flower stalks) regularly. Garlic bulbs are ready to harvest when the leaves yellow and tips turn brown. With care, remove bulbs from the soil. Place in a shaded area to dry for about two weeks. Once dry, braid or tie tops together for storage, or remove tops for storage. Keep some bulbs to plant next season.

Storing
Hang garlic in small bunches or store flat. Keep in a cool, dark, dry place. Dry garlic should keep for six to seven months.

Serving
Eat garlic cloves and greens raw or cooked. They are used in many recipes.

Clean up
The crop is harvested completely in summer. Little clean up is needed after harvest.

Authors

Erika Olsen, Extension Associate
Rachel Rudolph, Extension Vegetable Specialist
Rick Durham, Extension Consumer Horticulture Specialist

Contributors

Jann Knappage, Food System Specialist
Rita May, Senior Extension Associate
Michele West, Marketing and Media Specialist

Fall Nutrient Applications Has Its Advantages

Source: John Grove, Plant And Soil Sciences Professor

Grain producers can take steps now to prepare for the next growing season. Fall is an ideal time to start by applying nutrients to the soil.

There are several benefits to autumn fertilizing. For one, it can prevent delays in planting come spring. Kentucky's fall weather is generally drier, reducing the risk of soil compaction during application. Additionally, purchasing fertilizer in these cooler months might lead to savings, as spring tends to be the busier season for fertilizer sales.

Before getting started, test your soil to ensure you only apply the nutrients your fields need. This approach saves both time and money. You can coordinate with your local extension office to submit soil samples to the University of Kentucky's regional testing labs.

Once your soil test results are in, follow **UK recommendations** for fertilizer application. Potash and phosphorus are particularly well-suited for fall application in Kentucky. These nutrients interact with the soil to keep them in place, preventing loss through leaching during the state's typically wet winters. If you're planting small grains this autumn, apply the recommended rates of phosphorus and potash before planting. Double-crop producers should also account for soybean nutrient needs when applying fall wheat fertilizer. **https://publications.ca.uky.edu/sites/publications.ca.uky.edu/files/AGR1.pdf**

UK encourages corn and full-season soybean producers to wait until the springtime to apply nitrogen and animal manures. Both run a high risk of leaching from the soil during the winter. Additionally, nitrogen losses can occur from denitrification and immobilization during the winter. Animal manures are most effective when there is a crop already growing in the field.

If you've planted wheat this fall, apply just enough nitrogen to promote early growth and tillering, usually no more than 40 pounds per acre. Wheat-following crops like soybeans, tobacco or well-fertilized corn may not need additional nitrogen in the fall. If more nitrogen is required, remember that common phosphorus fertilizers in Kentucky, such as DAP (18-46-0) and MAP (11-52-0), also supply nitrogen that the wheat can utilize.

For more information about alternative grain storage, contact the McCracken County office of the University of Kentucky Cooperative Extension Service.

Daylight Saving Time Ends Sunday, November 3, 2024

EPA Webinar: Integrated Pest Management for Arborists and Foresters

Trees are an integral part of our ecosystem, but they face many threats from invasive insects and diseases. Keeping trees healthy using integrated pest management (IPM) requires an understanding of the tree species and the pests that can cause harm. This free webinar will provide information on identifying common symptoms of unhealthy trees and IPM-based tactics, including biopesticides, for controlling various tree pests. Experts will focus on IPM approaches to maintenance and pest management for trees in urban, suburban, and park settings.

This webinar will be offered on Nov 19, 2:00 – 3:00 P.M. EDT. The presentation will be followed by a question-and-answer session. Kentucky pesticide CEU credits have been applied for, so, by attending this session, you can earn free CEU credit that can be used to help renew your commercial pesticide certification. This webinar will feature two speakers, Gary Lovallo, Owner, Chestnut Arboricultural & Forestry Services, LLC and Dr. Marica Anderson, EPA Center for Integrated Pest Management.

Participants will:

- Learn how IPM procedures help keep trees healthy.
- Learn how to identify common symptoms of unhealthy trees and select effective pest control.
- Learn how proper maintenance can prolong the life of trees.

You will need to preregister for this webinar. Attendees can earn continuing education credits for these EPA IPM sessions from the KY Department of Agriculture by registering and participating.

https://register.gotowebinar.com/register/4159455127493061982

By Ric Bessin, Entomology Extension Specialist

Greenhouse & High Tunnel Sanitation Can Prevent Future Vegetable Diseases

Greenhouses and high tunnels allow growers to extend the vegetable growing season. However, many vegetable pathogens can overwinter in these structures. These organisms can survive for months or years on dead plant material or in soil, causing infections in subsequent years. Elimination of disease-causing organisms reduces the need for fungicides and can improve the effectiveness of disease management practices. Following these sanitation practices both in autumn and throughout the growing season can reduce disease pressure in both commercial and residential plantings.

Sanitation Practices

- Remove all plants and debris, including fallen fruit, once harvest is complete (Figure 1).
- All diseased plant material should be burned, buried, or taken off-site. Do not compost diseased plant material.
- Remove weeds, including roots, which may serve as alternative hosts for pathogens.
- Remove landscape fabric or mulch to remove disease-causing organisms.
- Clean and sanitize trellises, tools, benches, and equipment. Additional information on methods for cleaning and sanitizing review the following publications.
    - Cleaning & Disinfecting Hand Tools & Planting Supplies (PPFS-GEN-17)
    - Cleaning & Sanitizing Commercial Greenhouse Surfaces (PPFS-GH-07)
- Deep-till soil (high tunnels) to bury residual pathogens.
- When possible, rotate to crops in other plant families to reduce pathogen build-up.
- Solarize soil in high tunnels during spring or summer to kill soil-borne pathogens.

Figure 1: *Bacterial spot on tomato can overwinter in plant debris. (Photo: Kenny Seebold, UK)*

Figure 2: *Soil-borne fungal pathogens, such as causal agents of southern blight (left) and timber rot (right), produce overwintering structures (sclerotia) that survive 5 or more years. (Photos: Kenny Seebold, UK)*

Additional Resources

Cleaning & Disinfecting Hand Tools & Planting Supplies (PPFS-GEN-17)
Cleaning & Sanitizing Commercial Greenhouse Surfaces (PPFS-GH-07)
Greenhouse Sanitation (PPFS-GH-04)
IPM Scouting Guide for Common Problems of High Tunnel and Greenhouse Vegetable Crops in Kentucky (ID-235)
Managing Greenhouse & High Tunnel Environments to Reduce Plant Diseases (PPFS-GH-01)

By Kim Leonberger, Plant Pathology Extension Associate, and
Nicole Gauthier, Plant Pathology Extension Specialist

Bramble Disease Publications

Brambles (various types of blackberries and raspberries) are popular fruit crops grown for both home and commercial production in Kentucky. A significant challenge, however, is the potential occurrence of several fungal diseases that require careful cultivar selection and management during the growing season. Bramble diseases allowed to go unmanaged can reduce overall yields and limit the longevity of plantings.

The most common bramble diseases in Kentucky include blackberry rosette (aka double blossom), several cane diseases (anthracnose, cane blight, and spur blight), and rust diseases (cane and leaf rust, late rust, and orange rust). The following three Plant Pathology Extension publications address these diseases. Each fact sheet contains information on causes, symptoms, disease development, and management strategies, along with color photos to aid in diagnosis.


College of Agriculture, Food and Environment
Cooperative Extension Service

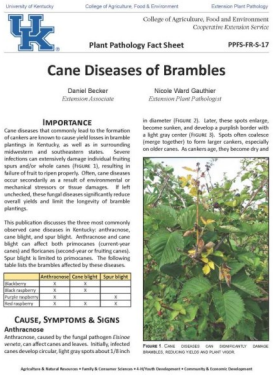
Plant Pathology Fact Sheet PPFS-FR-S-03

Blackberry Rosette (Double Blossom)

Michele Stanton, *County Extension Agent*
Nicole Viard Gauthier, *Extension Plant Pathologist*

IMPORTANCE

SYMPTOMS


College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet PPFS-FR-S-17

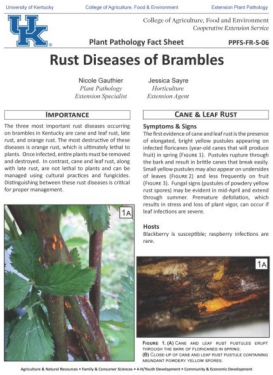
Cane Diseases of Brambles

Daniel Becker, *Extension Associate*
Nicole Viard Gauthier, *Extension Plant Pathologist*

IMPORTANCE

CAUSE, SYMPTOMS & SIGNS

Anthracnose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Plant Pathology Fact Sheet PPFS-FR-S-06

Rust Diseases of Brambles

Nicole Gauthier, *Plant Pathology Extension Specialist*
Jessica Sayre, *Horticulture Extension Agent*

IMPORTANCE

CANE & LEAF RUST

Symptoms & Signs

Hosts

These publications are available online:

- Blackberry Rosette (Double Blossom) (PPFS-FR-S-03)
- Cane Diseases of Brambles (PPFS-FR-S-17.
- Rust Diseases of Brambles (PPFS-FR-S-06.

For additional publications on fruit diseases, visit the UK Plant Pathology Extension Publications webpage.

By Cheryl Kaiser, Plant Pathology Extension Support, and
Nicole Gauthier, Plant Pathology Extension Specialist

Fall Spiced Pumpkin Bread

½ cup all-purpose flour
1¼ cup whole-wheat flour
1½ teaspoons baking powder
1 teaspoon baking soda
2 teaspoons pumpkin pie spice
½ teaspoon salt
½ cup melted margarine
½ cup sugar
½ cup honey
2 cups pumpkin puree
⅓ cup olive oil
2 eggs
⅓ cup chopped walnuts

Heat oven to 350 degrees F. **Mix** flours, baking powder, baking soda, pumpkin spice and salt; set aside. In a large mixing bowl, **whisk** together margarine, sugar, honey, pumpkin puree and olive oil. **Blend** in eggs. **Add** flour mixture. **Stir** until dry ingredients are moistened. **Spray** a 8-by-4 inch loaf pan with non-stick cooking spray. **Pour** batter into pan; **sprinkle** walnuts on top of batter. **Bake** for 1 hour. **Remove** from oven and **cover** with foil. **Return** to oven and **bake** an additional 20 minutes or until toothpick inserted in center comes out clean. **Cool** for 10 minutes and **remove** from pan.

Yield: 16 slices

Nutritional Analysis: 220 calories, 13 g fat, 2 g saturated fat, 30 mg cholesterol, 270 mg sodium, 26 g carbohydrate, 1 g fiber, 14 g sugars, 4 g protein.