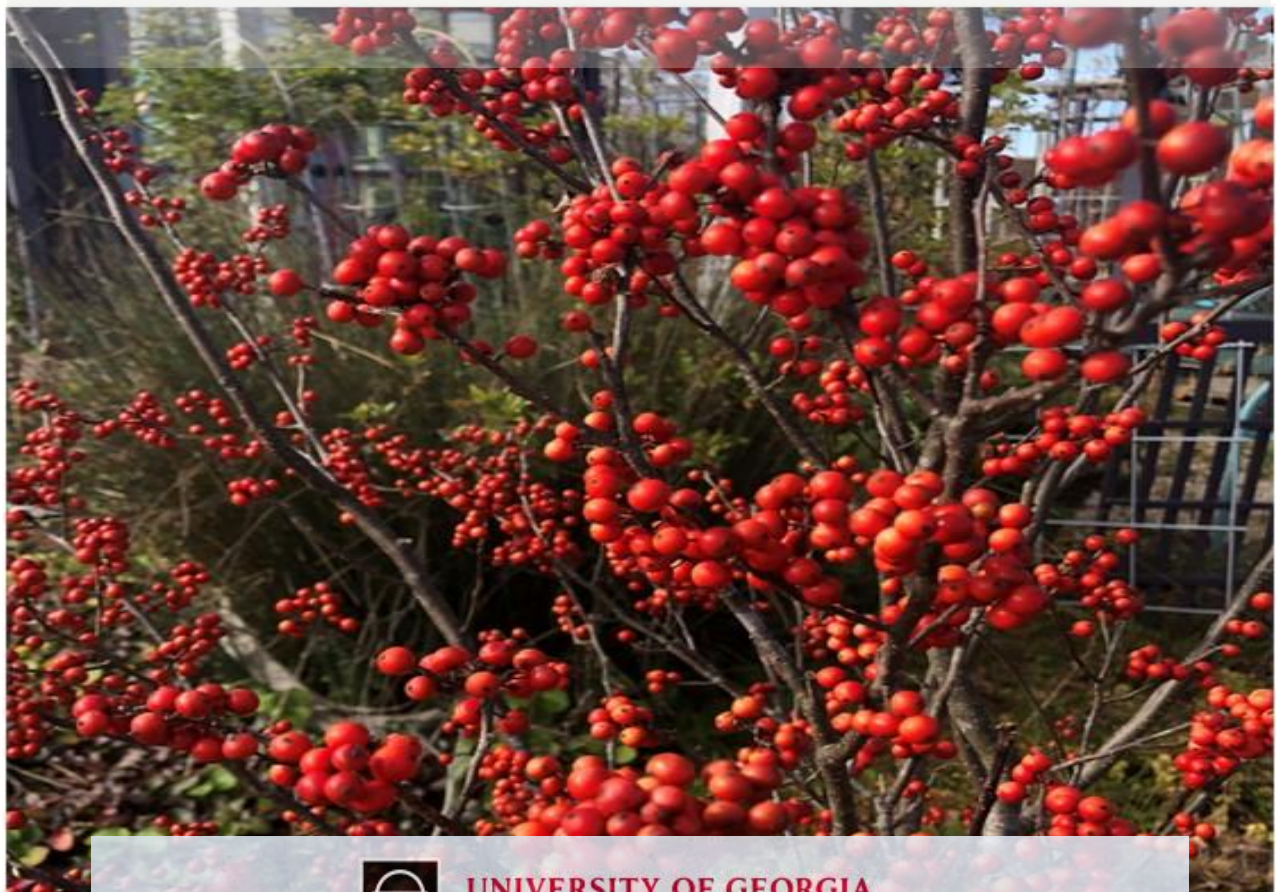




Shades of Green

Athens-Clarke County Agriculture and
Natural Resources E-Newsletter

December 2023



UNIVERSITY OF GEORGIA
EXTENSION

A Note from Athens-Clarke County Agriculture & Natural Resources

Hello readers!

Winter has arrived here at the Athens-Clarke County Extension Office. Although it is cold outside, we are happy to keep communicating UGA research with the public. Be sure to check out local [Farmers Markets](#) open year round and [other events](#) hosted by UGA Extension, State Botanical Garden of Georgia, Georgia Museum of Natural History, and Sandy Creek Nature Center, among many others.

We hope you enjoy this month's issue of "Shades of Green."

Take care,

Athens-Clarke County Agriculture and Natural Resources

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Winter Protection of Ornamental Plants

Robert Westerfield, Extension Horticulturalist

Cold damage to ornamental plants can be a problem during the winter in the Georgia landscape. This is true whether you live in the upper elevations of the mountains or in the most southern regions of the state. Regardless of where you live, recommended practices can maximize the chances that your prized landscape plants will survive the winter.

During the summer months, ornamental plants are actively growing and would be severely injured by even the slightest frost.

During the late summer and early fall, the plants must prepare themselves for winter through a process called cold acclimation.

This process is initiated by the cooler temperatures and shorter day lengths that naturally occur at this time of the year.

Cold acclimation must occur in a timely fashion. If it occurs too early, the growing season of the plants will be shortened; if too late, they will be injured or killed by early frosts. Several factors including local weather conditions, plant selection, and maintenance practices during the growing season, can affect the timing and extent of cold acclimation of landscape plants.



Types of damage and conditions

Cold injury can occur on all parts of the plant including fruit, stems, leaves, trunk and roots. Typically, homeowners notice the cold damage first on the leaves and stems. Ice forms within the plant's cells, the plant tissue dies, and leaves or stems become brownish-black and mushy. Cold acclimated plants can often withstand this type of ice formation. Plants that are not acclimated may sustain injury to the root system and may be severely damaged or killed. Sometimes this is not noticed until the plant fails to leaf out the following spring.

Windy conditions and accompanying cold also may cause plant damage through desiccation (evaporative water loss exceeds water absorption). This is the drying out of the plant. Marginal leaf scorching or leaf-tip burn is characteristic of this problem. Leaves may eventually turn completely brown and defoliate.

Damage to flower and leaf buds can occur during periods of low or fluctuating temperatures. This can lead to a reduction or total loss of blooms and damage of the foliage the following spring. Damage can be appraised by removing several buds and cutting them open to reveal their condition. If they appear green throughout, they are healthy; if they are partially brown or darkened, they have been injured.



Winter Protection of Ornamental Plants

(continued)

One common problem that may occur during cold temperatures in woody plants is bark splitting. Bark splitting appears as loose bark in various areas on the trunk. As the bark exfoliates from dead tissue on the trunk, a frost canker can form. The canker may initially appear as a darkened, moist area. Bark splitting can cause structural damage and reduce the plant's ability to transport nutrients and water. This can cause the death of the entire plant.

Although not common in Georgia, frost cracks on the trunks of woody plants can occur in sections of the state when plants are exposed to extremely cold temperatures. A frost crack is a long, deep, narrow crevice running up and down the trunk of a tree. As temperatures cool down, the temperature of the trunk drops quickly and the trunk contracts and may split.

Preventive Measures

Plant and site selection

The best way to prevent cold damage is to select a plant that can tolerate cold temperatures in your area. Georgia has different climatic zones, making it important to select plants that meet the minimum cold hardy requirements for your area. When selecting cold-tolerant plants, be sure to consider whether they can survive the summer heat in your area as well.

In addition to plant selection, proper site selection is essential. Assess your property to determine the location of the coldest and the warmest spots. During the winter, the coldest spots are often found on the north and northwest part of the property and in low areas where cold air settles. The warmest spots are usually on the southern part of the property.

Assessing the microclimates of your property is also important. Elevation, land form, soil properties, canopy cover, and proximity of structures or other plants determine a microclimate. Microclimates can be used to help protect plants by placing cold-sensitive plants near the part of the house that receives southern exposure or near larger plants or other structures.

Plant nutrition

Maintaining proper plant nutrition increases a plant's tolerance to cold injury. A plant that has been given the appropriate nutrition is healthier and more capable of acclimating to cold temperatures. Fertilizing plants at the proper time of year is also vital. Fertilizing plants in the fall (after August or September) with a fertilizer high in nitrogen can cause a flush of new growth that is more susceptible to cold temperatures. Soil sampling is the best method to determine your plants' nutritional needs. Contact your local county agent for testing procedures.



Winter Protection of Ornamental Plants

(continued)

Pruning and transplanting

Pruning in late summer or early fall can cause new growth that is more susceptible to cold injury. Prune plants just prior to the appearance of new growth in late winter or early spring. Plants transplanted in late fall or early winter are also more susceptible to cold injury. These plants may not acclimate properly when exposed to low temperatures. Transplant in the early fall.

Canopies and shade

Radiational freezes occur on calm, clear nights when temperatures drop because of heat loss from the surfaces of objects. Canopies help reduce radiant heat loss from the plants and soil by preventing heat loss to the atmosphere.

Plants that grow in shaded areas are less susceptible to winter desiccation, or drying out, than those grown in full sun. Plants that prefer full sun do not do well in the shade and will be unhealthy and less tolerant of cold temperatures if sited incorrectly.

Windbreaks

Windbreaks such as fences, buildings, evergreen plantings and temporary structures can help protect plants from cold injury. Windbreaks are most useful in reducing injury caused by cold winds and advective freezes (freezes that occur when temperatures drop

because of the invasion of cold air masses into the area). They should generally be located anywhere cold winds are a problem; this is often on the northwest side of the planting.

Covering and heating

Protect plants in containers either by placing them inside a protective structure (house, garage, green house or shed) or by placing a protective covering over them. Container plants are especially susceptible to cold temperatures; their roots are more exposed because they are above ground. Plants with roots that are damaged by cold temperatures may not show immediate signs of damage; these plants will show signs of stress when temperatures rise and the demand for water from the roots is greater.

Push together container plants that are left outside and mulch or cover them to decrease heat loss from the sides of the containers. Wrap the bases of the containers in plastic, burlap or blankets to reduce heat loss.

Plants growing close to the ground are usually protected by heat radiating from the soil. Tall, more open plants do not receive as much radiating heat and are not as protected from the cold.

Mulching helps reduce heat loss of the soil,

Winter Protection of Ornamental Plants

(continued)

thus minimizing temperature fluctuations.

Protecting the roots of tender perennials may also be beneficial for them to survive the cold and come back in the spring.

Covering your plants with sheets, blankets or cardboard boxes helps protect them from low temperature injury. Plastic sheeting is not recommended; the plant can heat up rapidly as temperatures rise be damaged). Remove the cover and provide ventilation during the day to allow the release of the heat that is trapped by solar radiation. You can build a frame from PVC or similar material to keep the cover from coming in contact with the plant and possibly breaking leaves and stems.

Water needs before a freeze

Plants continue to have water requirements during the winter months. Therefore, following sound irrigation practices is essential for a healthy and cold hardy plant. Check the water needs of plants prior to a predicted cold snap and water if necessary. Moist soil absorbs more heat, helping to maintain an elevated temperature around the plants. Mulching the base of plants helps to retain moisture.

After a freeze

Cold damage may not be apparent in the plant for several days or weeks. To determine if your plants have been damaged by the cold,

wait several days after a freeze and remove several buds, stems and leaves (if present) from the plant. Use a sharp knife or razor blade to cut a cross section of the bud's top. If there is any discoloration in the bud, they have been damaged.

To determine if stems have been injured by the cold, peel the bark back to reveal the cambium layer (layer directly under the bark). If there is any black or brown discoloration, damage has occurred. Leaf damage may appear as obvious black or burnt foliage, usually occurring at the tip of the branches. Damage on buds, stems and leaves may be localized and the entire plant may not be affected.



Waiting to prune after freezes have passed will guard against removing living wood. If localized damage has occurred to the foliage or stems, prune several inches below the injured tissue. Although injured buds may reduce or eliminate flowering or leaf emergence in the spring, no pruning is necessary.

Extending the Crop Season: Unheated Spaces

By: David Berle and Robert Westerfield

UGA Horticulture Department

In most parts of Georgia, it is possible to maintain an active vegetable garden throughout the year. With a little protection, it is also possible to increase the yield of hardy crops and grow a few additional plants that would not otherwise survive the winter. Many protective structures are inexpensive to build and do not require supplemental heat.

Cold Protection Myths

Myth: Placing a blanket over a plant will keep it warm.

Reality: Covering plants is simple and effective, but to protect the plant, the cover must reach all the way to the ground and be anchored. Be sure to remove covers as soon as temperatures rise, or you can “cook” the plant.

Myth: Draping plastic over a plant will help protect it.

Reality: When plastic is in direct contact with leaves it can intensify the effects of cold, causing leaves to “burn”. Row covers and hoop houses provide a structure to support the plastic so it does not touch the plant. Always remove plastic early, before the sun overheats the plants.

Myth: Blocking the wind will keep a plant warmer.

Reality: The term “wind chill” applies to humans, not plants; however, wind can contribute to a plant drying out. There is a benefit to protecting a newly planted vegetable seedling from wind damage, but this is not temperature

-related.

Myth: Watering a plant just before a freeze will help protect it.

Reality: This is half true. If the soil area is well watered, the air temperature just above the soil can be as much as 5 degrees warmer. For this to work, the plant must be close to the ground, and the entire area around the plant must be watered, not just the plant. Sometimes, gardeners get this concept confused with irrigating for frost protection. To protect a plant from the cold, water must be sprinkled overhead continuously using a sprinkler. This works for commercial growers, but is impractical for home gardeners. Also, this technique only works in the case of a frost and provides only a few degrees of “protection.”

Cold Protection Options

Cold Frame

A cold frame is a traditional structure that sits on the ground, is usually about 12 to 18 inches high and is covered with a glass or plastic lid to let in sunlight. Cold frames are usually built of wood, but any material for the sides will do. Some gardeners use cement blocks and even straw bales to form the sides. The lid can be made from an old window or glass door, or it can be created from a wooden frame with plastic stretched over it. The lid can be hinged or just rest in place. A wooden stick can be used to prop the lid open on warm, sunny days.

Extending the Crop Season: Unheated Spaces

(continued)

Garden catalogs even offer a device that opens automatically when the structure's interior reaches a certain temperature.

The size of the cold frame is up to the gardener; however, there are some basic recommendations for size and shape. Access into the cold frame will be necessary to plant, tend and harvest the crop, so if the lid is hinged, 3 feet wide is large enough. If the lid is removable, the cold frame could be as wide as 5 feet. The material used for the lid will also determine the width. Most used windows are 2 to 3 feet wide, unless you can find an old sliding glass door. Plastic stretched on a frame will sag if the span is more than about 3 feet, so if you make it wider, be sure to place a support in the middle.

Row Covers

Row covers are a fairly new concept that began with commercial growers and are sometimes referred to as low tunnels. Row covers are simply miniature greenhouses placed directly over the row of crops. The idea is to trap the ground heat and keep the area right around the plant slightly warmer than the cold air while protecting the plant from the detriments of cold wind and frost. Row covers can provide as much as an 8-degree temperature difference, which is often the difference in saving the crop or losing it. The row cover can be clear plastic, white plastic, plastic with slits or a polyspun material. Row cover materials are

supported by wire, PVC or metal hoops spaced close enough to prevent the material from sagging. An alternative way of using row cover materials is to lay poly spun material directly on top of the crop (this is known as a floating row cover). This can work well for low growing crops and avoid the expense and time of installing the hoops, but any leaves in direct contact with the material can freeze. It can cost as little as \$20 to cover a garden row that is 4 feet wide by 50 feet long with a reusable row cover.

Hoop House

A hoop house is a larger, more permanent structure. It is typically smaller than a conventional greenhouse, and is unheated. The hoop house, or tunnel, is constructed over a garden plot, and crops are planted into the same space year after year (crop rotation is important). A hoop house may remain covered during the summer, or the cover may be removed in the warm season to let in rain. Hoop houses are more like a large version of supported row covers than a greenhouse, and afford the benefits of row covers with easier access to the vegetables. They are typically homemade using PVC or metal conduit bent to a hoop shape. Kits are available, but most people build their own, sometimes using a purchased pipe bender. Hoop houses allow easy access to plants because they are at least head high and wide enough to move around inside. A 12-foot by 30-foot hoop house can be built for approximately \$500.

Images of cold frames: Nebraska Extension in Lancaster County



Images of hoop house and row cover supports: Athens-Clarke County Extension Demonstration Garden

Local December Events

Deck the Hollow Bear Hollow Zoo

December 1-3 & 8-10th, 5:30 -7:30 pm

Lights, Vendors, Animal Encounters

Admission—\$5.00

Diamond Hill Farm Stand

Every Thursday, 4-6 pm

Vegetables and fresh flowers are available on hand and pre-ordered. Every Thursday, 4–6 p.m. at Authentic Brewing Company.

www.diamondhillfarmathens.com

UGA Extension offices around the state are working hard at developing quality online presentations on various topics.

Visit the UGA Extension [event calendar](#) to see events happening local to our county as well as virtual opportunities.

Gingerbread Workshop Lay Park Gymnasium

December 12, 6:00 –7:00 p.m.

297 Hoyt Street

Cookies With Santa

December 16 2:00—2:45 p.m.

Sandy Creek Nature Center

205 Old Commerce Rd.

State Botanical Garden of Georgia Winter Lights

November 22—December 30

2450 S. Milledge Avenue

For further information:

wonderlights.uga.edu

Winter Open House: Art Garden

Lyndon House Art Center

December 9th, 12:00—3:00 p.m.

211 Hoyt Street

Holiday Market and Craft Fair

December 16th 11:00—2:00 pm

West Broad Farmers' Market

300 South Rocksprings Street

Paw-Perfect Pals: Doggie & the Grinch

December 16th

Rocksprings Community Center

11:30—1:00 p.m.

Athens Holiday Market @ Big City Bread

December 7 & 8th

393 North Finley Street

5:00—9:00 p.m.

Local Farmers Markets



The **Athens Farmers Market** takes place on **Saturdays** from 8am-12pm at Bishop Park and **Wednesdays** from 5pm- 8pm at Creature Comforts Brewery. Be sure to visit [their website](#) for updates and details.

Saturday Market: Year-Round

Wednesday Market: March—November

Find them on Facebook: [@AthensFarmers-Market](#)

Follow them on Instagram:
[@athensfarmersmarket](#)



The **West Broad Farmers Market** takes place on **Saturdays** from 11am– 2 pm at 300 S. Rocksprings Street and on **Tuesdays** from 5pm– 8pm at Authentic Brewing Company.

Both markets run from April 1—December 16

Visit [their website](#) for more information.

MARIGOLD



MARKET

The **Winterville Farmers Market** takes place on **Saturdays** from 10am-2pm at Pittard Park. Visit [their website](#) for more information.

The market runs from April 15th– December 16th.

Find out more on Facebook:

[@marigoldmarketwinterville](#)

Instagram: [@marigoldmarketwinterville](#)



WINTER WONDERLIGHTS

State Botanical Garden of Georgia:

Winter Wonderlights

November 22nd– December 30th

Website: botgarden.uga.edu





Concerned about the state of your garden?

Are weeds taking over your landscape?

No need to fear, Clarke is here!



Follow @gardenwithclarke on Instagram and learn how to battle pests, identify weeds, build your soil and so much more as you garden alongside Clarke, Athens-Clarke County's super gardener!



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UGA Extension Athens-Clarke County





Helpful resources online:

[Find My Local Extension Office](#)

[Bugwood— Pest Images](#)

[Landscape Alerts Online](#)

[Pest Management Handbook](#)

[Georgia Turf](#)

[Free Online Webinars](#)

[Pesticide Applicator Info](#)

[Georgia Certified Plant Professional](#)

[SE Ornamental Horticulture Production & IPM Blog](#)

[UGA Center for Urban Agriculture](#)

[Extension Publications](#)

Athens-Clarke County Extension Agriculture and Natural Resources

Mission Statement

The UGA Athens-Clarke County Extension's mission is to respond to the people's needs and interest in Agriculture, the Environment, Families, and 4-H/youth in Athens-Clarke County with unbiased, research-based education and information.

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