THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
College of Agricultural and Environmental Sciences
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Extending the Crop Season: Unheated Spaces
Community and School Gardens

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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. 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 winds 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 material 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 polyspun 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.

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