

WEED CONTROL OPTIONS



for the Home Vegetable Gardener

Robert Westerfield, University of Georgia Extension Horticulturalist
Shelbie Bohensky, University of Georgia Extension Program Assistant
Wesley Doyle, Conservation District Program Assistant

Home gardening has become an increasingly popular pastime that provides gardeners with the pleasure of enjoying the fruits of their labor year-round. But growing vegetables does have its challenges. In addition to dealing with the issues of possible disease and insects, weeds can be a tremendous burden on the home gardener. Weeds compete for space, steal nutrients and water from crops, and can look unsightly in the home garden. In general, weeds are easier to prevent in the garden than to remove once they start growing. Luckily, gardeners have several possible methods to help in their war on weeds.



UNIVERSITY OF GEORGIA
EXTENSION

PREVENTION

(Pre-emergence)

Preventing weeds from entering the garden is the first step to providing good control. Once weeds germinate and become established, control becomes much more difficult. Prevention can be achieved by using any, or a combination, of the following methods.

CHEMICAL

Not everyone will choose to use chemical controls to prevent weeds, but for those who do, there are products available for home gardens. Most garden centers sell a pre-emergent herbicide that can safely be used around certain vegetables. There is even an organic pre-emergent product made from corn gluten that will provide some measure of control to prevent the emergence of weeds. Pre-emergent herbicides should be applied, in most cases, after the crop is planted but before weeds have germinated. Pre-emergent products normally need to be lightly incorporated in the upper half-inch of soil and then watered in to activate. This can also be accomplished through rainfall, if it is expected within a day or so of application. Care must be taken to ensure that the label is read thoroughly and that the herbicide is only used around labeled vegetables. Many of the pre-emergent herbicides prevent grassy weeds from germinating and thus could not be used around sweet corn, which, in itself, is a grass. Corn has a separate category of herbicides that may be applied for pre-emergent control. Keep in mind that some products can only be applied after cucurbit

vegetables have already emerged, or damage may occur. Your local county Extension agents are the best source of information on selecting both pre-emergent and postemergent weed controls in your home garden.

MULCH

Mulch is an effective way to help prevent weeds in gardens. Mulch can be defined as an applied barrier of some form of organic matter. Some of the more popular mulches include wheat straw, pine straw, wood chips, and sawdust. Newspaper can also be used as an effective weed barrier when spread three layers thick around your plants. Other organic mulch should then be applied to a depth of about three inches on top of the newspaper barrier. Sawdust does not generally make a good mulch for vegetables; it tends to mat down quickly, and as microorganisms break it down, it robs the soil of nitrogen. Wheat straw can make an excellent mulch, but it's possible that its use could introduce foreign weed seeds to the garden. Pine straw serves as an excellent mulch but is subject to being dispersed by wind, making reapplication a necessity. Wood chips can serve as an effective weed block around vegetables; however, fresh wood chips should be aged six to eight months prior to use.

WEED FABRIC BARRIER

A number of products have been developed to help provide a barrier against weeds. Some of these weed block materials are made of impermeable, solid polyplastic, while others are made of a mesh material that allows moisture and fertilizer to

pass through. Metal landscape staples are used to secure the fabric into the soil. Using rolls of solid plastic for weed block can be tricky in the home garden due to application and irrigation concerns. Commercially, this material is often laid with a specialized tractor attachment that covers the plastic on the edges to hold it down. With such an impermeable material, you must have some form of drip irrigation underneath the plastic. In addition, since it is difficult for granular fertilizer to reach the plants, commercial growers often inject the fertility through the irrigation lines. As a rule, home gardeners should opt for the permeable mesh fabric that is available for weed control. These are available in different roll lengths, widths, and thicknesses. Overhead or drip irrigation can work with these type of products. Garden mats are a type of commercially made, heavy-duty vegetable fabric with predrilled holes to install the vegetables (Figure 1).



Figure 1. Garden mats are made of heavy-duty vegetable fabric to control weeds and erosion, with predrilled holes to install the vegetables.

This product is erosion-control fabric that can be purchased online or at stores that sell construction materials, and it provides less damaging reflective heat if you can purchase it in green instead

of black. Another system for using weed fabric is to lay it out side by side in rows, leaving approximately two inches between sheets (Figure 2).



Figure 2. Weed fabric may also be laid out side by side in rows, leaving approximately two inches between sheets for plantings.

This narrow strip of soil between the rows can then be seeded or filled with vegetable transplants, allowing you a weed-free and dry place to walk in between rows. Keep in mind that this strip will still require mulch and hand weeding in the exposed areas. Depending on the quality of fabric purchased, weed fabric can last anywhere from one to multiple seasons. Weed fabric will last longer when it is removed at the end of the season, folded up, and stored out of direct sunlight. Weed-block fabric can also be used effectively in raised beds and can be stapled to the sides to hold it in place.

SOLARIZATION

Solarization is a method of using the natural heat produced in the summertime to aid in reducing weed populations (Figure 3).

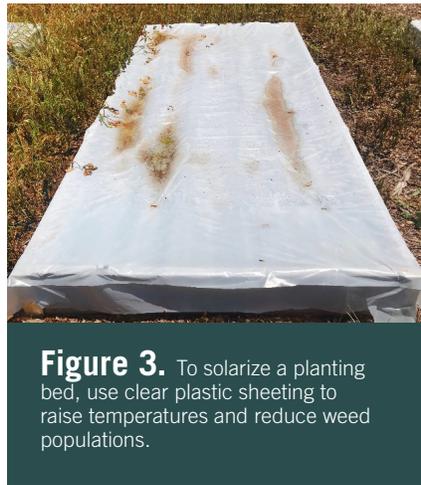


Figure 3. To solarize a planting bed, use clear plastic sheeting to raise temperatures and reduce weed populations.

This process may also help eliminate some plant diseases and insect larvae. In order to solarize your garden, you must allow a portion of the area to stay out of production for at least one to two months. This method works best when planting either a late summer or early fall crop. To solarize your bed, deeply till or spade the area thoroughly. Next, saturate the area with water to a depth of 3 or 4 inches. Apply two sheets of standard, clear painter's plastic over the area. Black plastic should be avoided, as it does not get as hot as clear plastic. After the plastic has been stretched, pin the edges down with staples or other objects to keep them from blowing around. The plastic cover should remain in place for a minimum of one month, but two months is more effective. After the solarization period and the removal of the plastic, do not retil the bed. Doing so could bring up viable weed seed from below the solarized area. Instead, directly plant your seeds or transplants into the undisturbed soil. This process will not completely eliminate all weeds and will not last the entire growing season, but it normally allows vegetables to get a good growing start ahead of germinating weeds.

ROLLER CRIMPING

Roller crimping is a relatively new concept in Georgia that uses cover crops to help hold and build the soil, while providing a natural barrier against weeds (Figure 4).



Figure 4. Roller crimping crushes a cover crop with the weight and blades of a roller crimper, which provides a blanket of weed control and soil protection.

Roller crimping is the process of terminating the cover crop by crushing the stems with the weight and the blades of the roller crimper. This prevents further growth or germination of seeds. This environmentally friendly method, while more practical for small commercial vegetable farms, can still be done by a home gardener on a small scale. There are several combinations of cover crops that can be used. One such combination is planting your garden into wheat and rye with some crimson clover mixed in. The following spring, after the cover crop begins to mature and go to seed, it can be roller crimped to provide a blanket of weed control and soil protection. The ideal time to crimp is known as the “dough stage,” which is when the seeds are not yet viable and hard but have a feel like bread dough. While commercial roller crimpers are available for farmers, home gardeners can achieve the same effect on a small scale with a

rented sod roller or other heavy barrel that can be pulled behind a lawnmower or ATV. Cover crops should only be crimped in one direction. This involves driving around the garden each time and entering from the same area. Vegetable transplants or seeds can then be planted down into the flattened cover crop, which provides an effective weed barrier (Figure 5).



Figure 5. Roller crimping flattens the cover crop, which provides an effective weed barrier in which vegetables can be planted.

STRIP TILLING

Strip tilling is an alternative to the roller crimping method. Like roller crimping, strip tilling involves planting a solid cover crop and allowing it to mature. After the cover crop is established, it must be mowed over at the highest lawn mower setting. Afterward, use a small tiller to till clean strips between the cover crop. The cover crop that remains between the tilled areas will continue to provide protection. The tilled area is where seeds and transplants can be installed, and continued weed control will be necessary.

ERADICATION (Postemergence)

CHEMICAL

There are several challenges to implementing chemical controls in the home garden. Herbicide selections are very limited when it comes to postemergent weed control in the home garden. It is imperative that home gardeners read the supplied labels thoroughly to understand where and how to use postemergent herbicides. In general, they will be specific to certain types of weeds and labeled for certain vegetables. Weeds that are allowed to mature and produce flowers or seed are even more difficult to control, as they are very resistant to herbicides at this stage unless excessively high rates are used.

A nonselective herbicide such as glyphosate (the active ingredient in Roundup and similar products) can be very effective on postemerged weeds in the home garden. This chemical is only effective when it is applied on the foliage or stems of the target plant. The danger of using glyphosate is the possibility of drift onto the vegetable crop when applying this with a sprayer. It only takes a slight breeze and a few droplets of herbicide to injure or kill a tomato, pepper, or squash in your garden. When using glyphosate, prevent drift by using extreme care and a shield on the end of your sprayer. Wait for days that have no wind to apply. An optional method of application, which is safer than spraying, is wick application. Wick application is the process of applying a product to the target weeds with an applicator

such as a common paint roller. This application method greatly eliminates the possibility of drift to nontarget plants. For even better spot-application control, you can attach a small sponge to the end of a broomstick and, after dipping it in the herbicide, push it down on the target weed.

MECHANICAL

While undoubtedly the most labor-intensive method, mechanical control of weeds can be very effective. In simplest terms, weeds can be pulled by hand or removed with the use of a simple hand rake or hoe. When implementing mechanical control, keep in mind that weeds are removed much easier when they are young, lightly rooted and in moist soil. For medium-sized gardens, the home gardener may consider investing in the Kentucky High Wheel Cultivator. This is a hand-pushed tool that is similar to what our forefathers used to walk behind with a mule pulling it. Either an attached claw or sharpened stirrup cuts the weeds just below the soil line. For larger areas, a walk-behind tiller can be used. The tiller should be set on the highest setting so that it only penetrates the soil deep enough to catch the roots. When using this implement, care should be taken to maintain a safe distance from the desired vegetables. One lesser-used method of mechanical weed control is to burn the weeds out with a torch. Handheld propane torches are available at garden supply stores and hardware outlets. When hooked to a small propane tank, these torches can effectively eliminate troublesome weeds by desiccating them with heat. Extreme care should be taken to avoid burning vegetable crops,

and safety equipment should be worn for personal protection.

Weed control can be a frustrating element of home gardening. Using a combination of the controls mentioned above will provide the best long-season control.

The key to all weed control is to prevent weed populations from invading the garden and to attack weeds when they are young.

Special appreciation is due to the U.S. Department of Agriculture Natural Resources Conservation Service and the Towaliga Soil and Water Conservation District for their assistance with the cover crop portion of this publication.

extension.uga.edu

Circular 1144

Reviewed June 2022

Published by the University of Georgia in cooperation with Fort Valley State University, the U.S. Department of Agriculture, and counties of the state. For more information, contact your local UGA Cooperative Extension office. *The University of Georgia College of Agricultural and Environmental Sciences (working cooperatively with Fort Valley State University, the U.S. Department of Agriculture, and the counties of Georgia) offers its educational programs, assistance, and materials to all people without regard to race, color, religion, sex, national origin, disability, gender identity, sexual orientation or protected veteran status and is an Equal Opportunity, Affirmative Action organization.*