

DRIP IRRIGATION

in the Home Vegetable Garden

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WHY USE DRIP IRRIGATION?

It is a well-established fact that in order to have a successful vegetable garden, you must supply supplemental irrigation throughout the season. Although Georgia receives a generous amount of rainfall, it often does not come at regular times or in even amounts. In general, most vegetables require about one inch of irrigation per week in order to produce a crop. This amount can fluctuate depending on the type of soil the gardener has and the requirements of the individual vegetable. Raised beds also require more frequent irrigation, as they tend to drain rapidly.

Many gardens in Georgia are irrigated by overhead sprinklers. While this practice does work, it is not the healthiest or most efficient way to water your garden. Overhead watering results in a substantial waste of moisture from watering non-target areas. In addition, overhead watering wets the foliage of plants, which can lead to foliar diseases. On the other hand, drip irrigation uses 75% less water than using an overhead system. Water is only delivered to the target area near the base of the plant where the roots are located. Since drip irrigation occurs at the ground level, the foliage stays dry and is less prone to disease issues.

Drip irrigation is relatively simple to install and the components of the system are readily available. While initially more expensive than overhead watering, drip irrigation will save money in the long run, as less water is used and healthier plants will be produced.



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TYPES OF DRIP SYSTEMS

Drip irrigation systems consist of five major components, including some type of water filter, a pressure reducer, a pressure gauge, a header pipe, and drip lines. A battery-operated water timer can also be added to help automate the system (Figure 1).

You will also need a series of different connectors, clamps, and end-stops to complete the system. These components can often be purchased at garden centers or bought online at irrigation supply companies. In most cases, you will be selecting between a rigid drip system and a flexible T-tape system. The rigid type is a bit more expensive, but has longer-lasting components that can be used for many growing seasons. The flexible drip tape, or T-tape, is somewhat disposable and usually only lasts one or two seasons. It is, however, the most economical (Figure 2). The main components of the filter, pressure reducer, and header pipe will last for many years if taken care of properly.



Figure 1. A battery-operated water timer helps to automate the drip irrigation system.

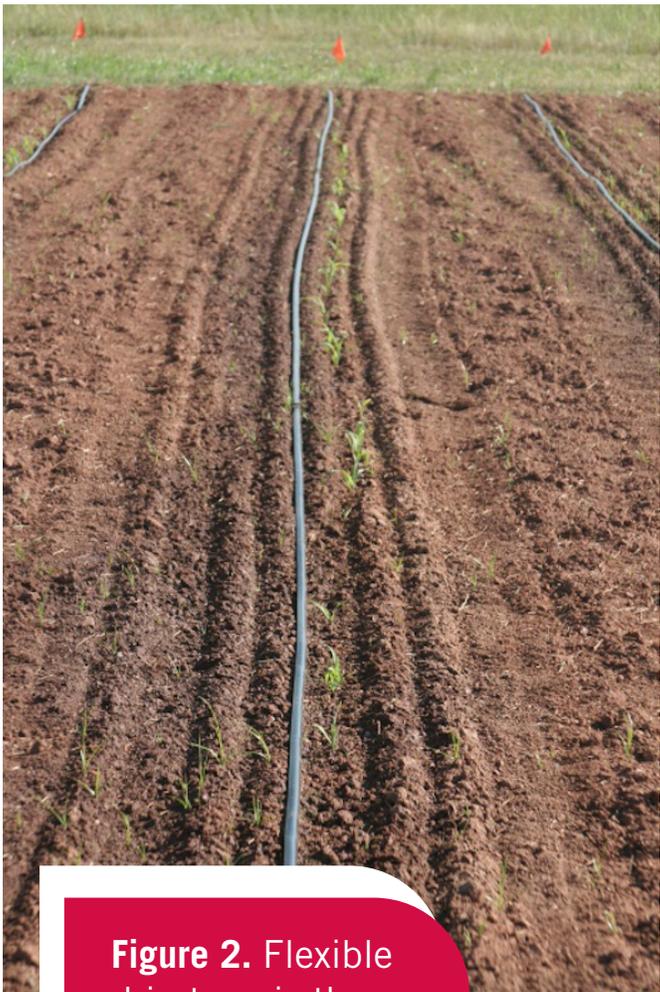


Figure 2. Flexible drip tape is the least expensive system, but only lasts a season or two.

Raised beds can also be retrofitted to use drip irrigation. It is just a matter of using elbows (Figure 4) and various lengths of pipe to allow the drip lines to be at ground level between the beds (Figure 3).



Figure 3. Raised beds retrofitted to apply drip irrigation using various lengths of pipe.



Figure 4. Raised beds retrofitted to apply drip irrigation using elbows.

CONSIDERATIONS BEFORE PURCHASING A SYSTEM

If you are a beginner, the complete drip irrigation systems sold by irrigation supply companies may be a good place to start. Retailers usually have several selections based on the size of the area you have to irrigate. For example, you may purchase a system designed specifically to cover a quarter-acre garden. These irrigation kits contain the proper components, hose sizes, and pressure capacities for the area they are intended to cover. You may also choose to purchase all of the components separately in order to buy only what you think you need.

When purchasing individual components and setting up a system for your garden, it is important to consider some facts before you order. You need to know the size of your garden, how many gallons your well or other water source puts out per hour, and the length of the header pipe you plan to run. The header pipe ranges in size from 0.5 inch to 1 inch or more. The bigger the header pipe, the more volume you can deliver to an area. Most irrigation companies will help you decipher what size header pipe you need.

Your irrigation drip system will only deliver so much water based on the pressure and supply you have available. It is important then to design your system to meet the needs of your plants. If the area to irrigate is too big for your system, you will lack water pressure. One solution is to divide the garden area into sections, or water zones, to which you can send water at different times.

SYSTEM MAINTENANCE

Any irrigation system is only as good as you maintain it, and drip irrigation is no exception. Check connections and emitters frequently to make sure that they are functioning properly. The water filter at the front of your system should also be checked and cleaned on a frequent basis. If it becomes clogged with sediments, the emitters down the line will perform poorly or will become blocked, decreasing the amount of water getting to your plants.

Watch out for rodents, like mice, that may chew the pipes in search of moisture. You may need to repair pipes with the appropriate fittings. It is a good idea to have several hose line repair couplings on hand for when damage to the system occurs. If you only plan on planting a spring or summer garden, you can extend the life of your irrigation system by cleaning and rolling up the hoses at the end of the growing season.

These irrigation lines should be stored in a structure out of direct sunlight. The longer they stay outside in the sun, the more likely they are to break down. Prior to storage, be sure to drain all of the water out of the lines so they do not freeze and crack during the colder winter months.

FINAL CONSIDERATIONS

Designing and installing a drip irrigation system is not as difficult as many people imagine. With a little bit of planning and knowledge, anyone can install a home drip irrigation system in his or her garden. Once you have completed your first system, you will discover how easy it is to set up. For any questions that you have on your drip system, contact your local supplier or local county Extension office.

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