Before we get started….

What's your "favorite" weed?

1

HARRY BITTERCRESS ANYONE?

Hairy bittercress weed (*Cardamine hirsuta*) is an annual spring or winter pest. The plant springs from a basal rosette and bears 3- to 9-inch long stems. The leaves are alternate and slightly scalloped with the largest at the base of the plant. Tiny white flowers develop at the ends of the stems and then turn into long seedpods. These pods split open explosively when ripe and fling seeds out into the environment.

2

DRIP IRRIGATION
FOR YOUR HOME PLANTERS AND GARDENS

Presenter

John Niebel

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The average household in Ohio uses between 150 and 300 gallons of water daily, depending on the seasons.

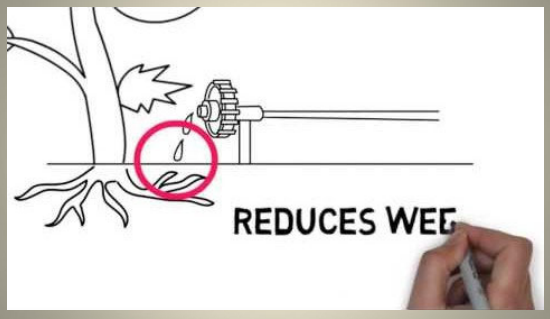
Water usage goes up during warmer months and goes lower during colder months.

The EPA and USDA estimate that between 43% and 51% of all water usage in the US goes toward irrigation.

Residential usage is estimated between 3% and 5.3% for irrigation. Watering lawns, gardens and shrubs!!

4

What is Drip Irrigation?



Source: YouTube-Drip Depot https://www.youtube.com/watch?v=-YDnX9dA2a8&feature=player_embedded

5

Benefits of a drip irrigation system

Advantages

Drip irrigation delivers water slowly immediately above, on or below the surface of the soil. This minimizes water loss due to runoff, wind and evaporation.

The mold spots on house siding and the staining and deterioration of wood privacy fences experienced with overspray from sprinkler irrigation is eliminated with the use of drip.

6

Benefits of a drip irrigation system

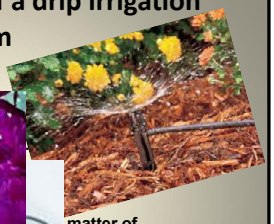
Properties with old, galvanized steel water service lines where corrosion has resulted in a narrowed diameter may benefit from a retrofit to drip irrigation. The low volume requirements of drip irrigation are a good match with restricted supply lines.

Drip systems can be managed with an **AC or battery powered controller**. Automated landscape irrigation is an advantage to many people with busy lifestyles.

7

Additional benefits of a drip irrigation system

Regular Watering



matter of

If it is

ain delay" setting.

8

Benefits of a drip irrigation system

Watering schedule can be changed based on weather conditions

Early in the year your plants will need less watering.

Example: one time each day at 6:00 am for 5 minutes

As the summer progresses you may need to water hanging baskets twice each day. Each watering may need to be 10 minutes.

Example: one time at 6:00 am and again at 2:00 pm for 10 minutes each.

Settings will change for your own need.
Shady – Sunny - Rainey

9

Benefits of a drip irrigation system

Vacations

What happens to your baskets, vases, pots, patio garden, and raised garden while you are visiting paradise.

10

Vacations

Your drip irrigation system keeps everything watered just the same as if you were at home doing it yourself.

No need to have friends or relatives stop over each day to keep things from dying.

11

Benefits of a drip irrigation system

Birdbaths and small water features

One of the biggest challenges at home is keeping the bird bath or fountain filled with enough water.

Usage and weather can cause the water to disappear before you know it. A drip system keeps it full all the time.

12

Benefits of a drip irrigation system

Adding fertilizers on a uniform basis

13

Uses for drip irrigation

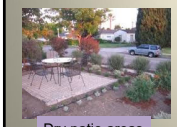
Drip irrigation systems are not limited to small applications on your deck or patio. You can go as small or as big as your situation demands and it can all be done automatically.


Plant cuttings

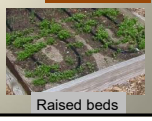

New landscapes


Individual pots


Tree plantings


Dry patio areas


Mass plantings


Raised beds

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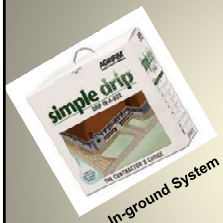
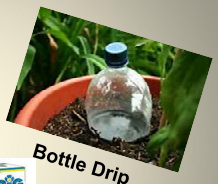
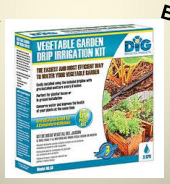
TYPES OF DRIP IRRIGATION



In-ground System


Bottle Drip



Drip kits with timers for decks and pots

15

Bottle Drip is one of the simplest forms of drip irrigation

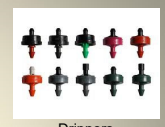
16

17

Inventory needed to set up your system


Ground steaks


Sprinklers & misters


Drippers

Automatic Timer


Tubing ¼" and/or ½"

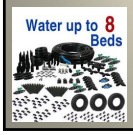

Elbows, Angles and "T's"

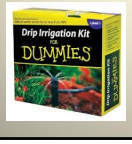

Filters and Feeders


"Y" connector for faucet

18

Inventory needed to set up your system





19

Installing the system

Using multiple hose shut off adapters with shut-off valves.

Quad adapter

Dual hose adapter

CONSIDERATIONS:

-How many timers will I install?

-Do I want to hook up a garden hose?

-Do I want brass or plastic (cost)

20

Installing the system

Now that I have an adapter installed, if called for, you will attach your timer to the outlet.

A suggestion would be to install the required battery(s) into your timer prior to installation.

This is as simple as attaching a hose. Be sure to install the rubber washer in the female end of the timer then screw it onto the faucet.

Do not over tighten and check for leaks. A leak here can cause considerable water damage in and around your foundation.

Once you have checked for leaks you can proceed to the next step – attaching the lead tubing.

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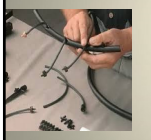
Installing the system



The next step in completing your drip irrigation system will be to attach the main line to your timer.

It is advisable to add a filter to your system to keep debris from clogging your drippers.

Depending on your choice of either 1/4" or 1/2" tubing, you will attach the main line to the bottom or male end of the timer or filter.

The next step will be to add feeder lines to each plant or bed.

Lastly you will install the proper dripper or sprayer to the end of each feeder line.

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Setting up your drip timer

Now that you have the necessary equipment for your personal drip irrigation system in place it's time to begin setting the timer.

The first thing you will decide is how many days a week you want to water.

The second step will be the number of times each day you want to water.

The third decision will be how long each watering will be.

If you purchased a multiple outlet timer, you will be able to set different times for different plants.

Demonstration

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Winterizing the system

Remove all of the drippers by cutting them from the tubing then proceed to bleed the lines of water.

2 FAVORITES TO BLEED LINES

Remove the main feeder line from the timer, and using an air compressor, blow all of the water from the lines

Remove the main feeder line from the timer and lower it to the ground. It must be lower than the lowest feeder line. Gravity will drain the water

Sooner or later winter comes to Ohio and it's time to put our garden to bed. This means that our system must be winterized.

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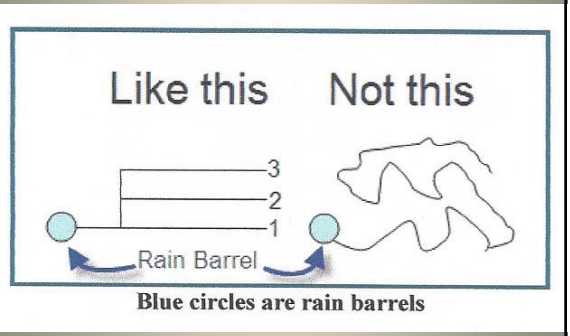
GRAVITY DRIP IRRIGATION

25

What a layout looks like



Blue circles are rain barrels

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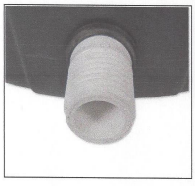
BUILDING A GRAVITY SYSTEM

Step one: Installing the Bulk Head Fitting



Follow the instructions to install the enclosed bulkhead fitting. *If your rain barrel has a bulkhead fitting attached, skip to Step Two.*

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BUILDING A GRAVITY SYSTEM

Step Two: From the Rain Barrel to the Individual Plants

1. Attach the **Y Filter** (DD-YS75HFM) to the male hose threads of the bulkhead fitting.

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BUILDING A GRAVITY SYSTEM

2. Screw the **Compression Swivel Adapter** (DD-CHS700) onto the hose inline filter.


3. Attach **1/2" Solid Drip Tubing** (DD-DH700) to the 1/2" swivel adapter and run it across the top of the garden rows. **Layout tips:** Read the Gravity Feed Guideline for tips on laying out your drip system for best output performance.


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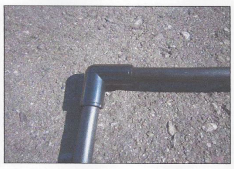
BUILDING A GRAVITY SYSTEM

5. Use **1/2" Compression Elbows** (DD-L700) to make 90 degree turns in 1/2" ploy tubing.

6. Run the 1/2" tubing above the garden rows and secure in place with **8" wire stakes** (S8)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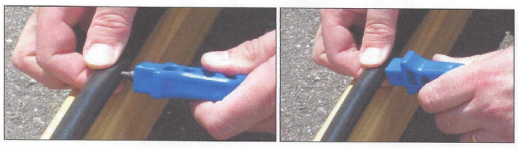
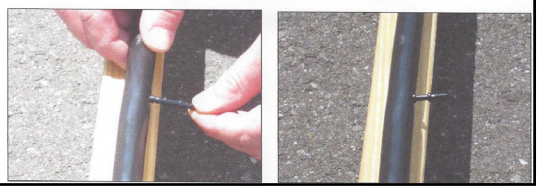
BUILDING A GRAVITY SYSTEM

Step Three: Installing Soaker Hose Dripline

1. At each row use the **Deluxe Hole Punch** (DD-HP250) to poke a hole in the 1/2" tubing.



2. Insert the **1/4" Barbed Connector** (DD-C250) directly into the 1/2" tubing.



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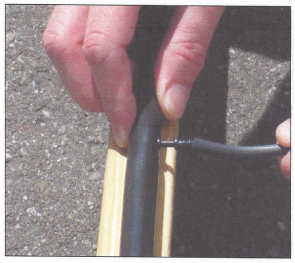
BUILDING A GRAVITY SYSTEM

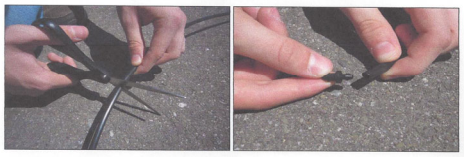
Attach a piece of **1/4" Soaker Hose Dripline** (DD-DET250-12-100) to the barbed connector and run it down the length of the row.



32

BUILDING A GRAVITY SYSTEM

Cut the tubing with scissors and push the small end of the **Goof Plug** (DD-GP) into the open end of the 1/4" tubing to cap off the ends.



3. Turn on your system and check each valve for water output. Remember that some inconsistency of output is to be expected with a gravity-fed drip system.

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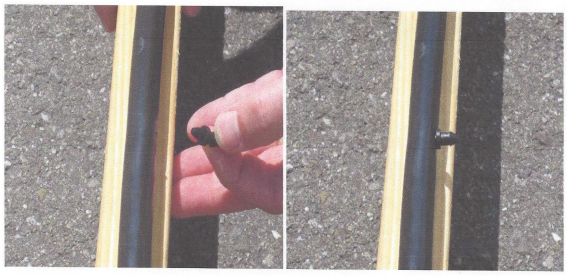
BUILDING A GRAVITY SYSTEM

- **Goof Plugs** (DD-GP) are used to plug holes in 1/2" drip poly tubing or cap off 1/4" micro tubing.



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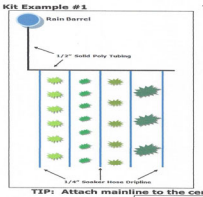
Gravity Feed System Layouts

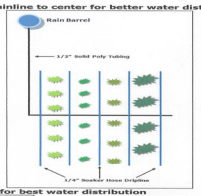
Here are a few sample layouts for our gravity feed kits. Use the tips below in your design to help equalize the output. **Maximum length of Soaker Hose Dripline = 20ft**

Connection Options:

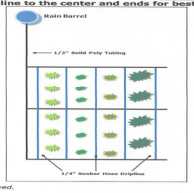
Starter Kit Example #1



Tip: Attach mainline to center for better water distribution



TIP: Attach mainline to the center and ends for best water distribution



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Sources for products

Search "drip irrigation"

http://www.raindrip.com/

https://www.dripdepot.com/

http://www.lowes.com/

http://www.dripworks.com/

http://www.amazon.com/

Menards on RT 21 south of Massillon OH

For information on this program or need help in getting started contact:

John Niebel 330-806-2124

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