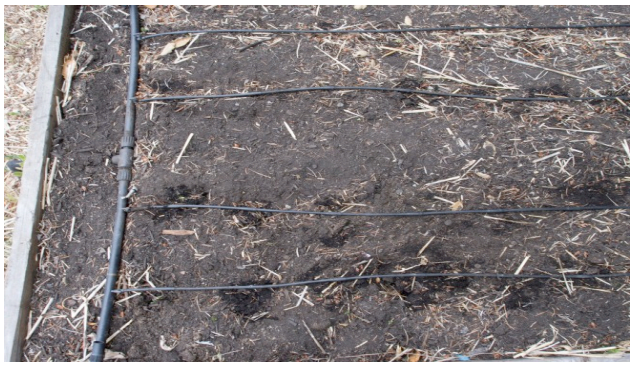
Instructions and Shopping List for Installing Drip Irrigation in a 4x8-Foot Bed



Step 1: Decide how you will bring water to your bed.

There are numerous ways to connect to your water source. These instructions address three common connection methods:

1) Connecting from pvc pipe
2) Connecting from a hose bib
3) Connecting from 1/2-inch poly tubing that is already connected to a water source

Also, consider that you may need additional parts like risers, elbows and "tees" to bring your tubing up and into the bed. See image at right for an example.
Additional parts are not included in the shopping list.
Note: Parts/fittings are available for both 1/2-inch and 5/8-inch tubing. Be sure to purchase the correct parts. A knowledgeable irrigation supply vendor can assist you.

1) Connecting from pvc pipe:

The following instructions assume that you have a filter and a pressure regulator already installed at the valve. See image at right.
If you don't have these parts, add them to your shopping list.

Connect an elbow with a slip fitting on one end (smooth on the inside so it can "slip" onto the existing pvc pipe) and threads on the other to your existing pvc. Determine if your pvc pipe is 1/2-inch or 3/4-inch or a larger size.
Then connect a threaded coupler to the threaded side of the elbow. A threaded coupler has threads on one end and a poly tubing connector on the other end.
Attach the 1/2-inch poly tubing to the coupler.

Elbow + threaded coupler + 1/2-inch tubing

Elbow + threaded coupler + 1/2-inch tubing + 1/4-inch tubing

2) Connecting from a hose bib:

Attach an anti-siphon valve/hose vacuum breaker to the hose bib. This device prevents irrigation water from being drawn into the house water supply. This is required by some cities and is especialy important if you use a fertilizer injection system.

Connect a timer that attaches to the anti-siphon valve. Choose either a manual or an automatic timer.

Connect a filter to the other end of the timer.

Connect a pressure regulator to the other end of the filter. Generally a range of 15-30 psi is adequate.

Add a threaded coupler and connect your 1/2-inch tubing to that.

Anti-siphon valve/hose vacuum breaker

Timer

Filter + pressure regulator

Threaded coupler

Parts connected together

3) Connecting from 1/2-inch poly tubing that is already connected to a water source:

The following instruction also assumes that you have a filter and a pressure regulator already installed at the valve. If you don't have these parts, add them to your shopping list.

Use a coupler and connect that to 1/2-inch poly tubing.

Coupler + 1/2-inch tubing

Step 2: Measure and cut your 1/2-inch poly tubing.

Cut 4-feet 6-inches of 1/2-inch poly tubing and place it across the 4-foot width of the bed.

1/2-inch poly tubing

Step 3: Close off any open ends of the ½ inch tubing with a Figure 8 clip, a compression end plug or a slip-loc end plug.

Figure 8 clip

Tubing closed off with clip

Compression end plug

Slip-loc end plug

Step 4: Secure the 1/2-inch tubing in place using two 6-inch staples/U-stakes.

6-inch staple/U-stake

Staple securing the 1/2-inch tubing

Step 5: Punch four equally spaced holes in the 1/2-inch tubing using a drip tubing hole punch.

Hole punch

Hole punch

Hole punched in tubing

Step 6: Cut four pieces of 8-foot lengths of 1/4-inch in-line emitter tubing and insert a 1/4-inch barbed coupler in one end of each length.

Note: Emitters can clog over time, even if you are using a filter. Observe tubing regularly and replace as needed.

1/4-inch tubing

Barbed coupler

Coupler inserted in 1/4-inch tubing

Step 7: Insert the barbed coupler with 1/4-inch line attached into holes you punched in the 1/2-inch tubing.

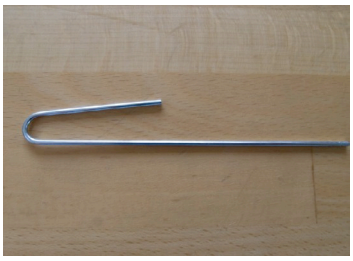
1/4-inch tubing inserted into 1/2-inch tubing

Step 8: Add a goof plug to close each open end of 1/4-inch tubing.

Goof plugs

Goof plug inserted into open end of 1/4-inch tubing

Step 9: Secure the 1/4-inch tubing with four 1/4-inch staples.



Staple for 1/4-inch tubing

Staple securing the tubing

Step 10: Turn the water on and make sure that all lines are delivering water to the bed. Plant your vegetables close to emitters.

Optional:

Four valves for 1/4-inch tubing that can close or open the line—to be used if there is nothing planted along one or more of the lines—another way to save water.

Valve

Valve connected to 1/4-inch tubing

Valve inserted in 1/2-inch tubing

Shopping list

Determine if you need to add an anti-siphon/ vacuum breaker at your hose bib or a filter and a pressure regulator at your valve. Also, additional parts like risers, elbows and "tees" may be necessary to bring your tubing up and into your raised bed.

Parts	Quantity
Connecting from pvc pipe:	
Elbow with slip on one end (smooth on the inside) and threads on the other.	1
A coupler that has threads on one end to connect to the threaded elbow and a poly tubing connector on the other end.	1
Connecting from a hose bib:	
Anti-siphon valve/hose vacuum breaker	1
Timer	1
Filter	1
Pressure regulator	1
Connector with threads on one end and tubing connector on other	1
Connecting from 1/2-inch poly tubing that is already connected to a water source:	
Coupler to connect to existing poly tubing	1
Additional parts for all 3 options above:	
1/2-inch poly tubing	4.5 feet
Figure 8 clips or compression end plugs or slip-loc end plug - one for each open end of the 1/2-inch poly tubing	1 or 2
6-inch staples/U-stakes to secure 1/2-inch poly tubing	2-4
Hole punch	1
1/4-inch tubing with in-line emitters	32 feet
1/4-inch barbed coupler to connect 1/4-inch tubing to 1/2-inch tubing	4
Goof plugs to close the open ends of the 1/4-inch tubing	4
Staples to secure 1/4-inch tubing	4
Optional:	
Valves for closing the 1/4-inch tubing when a line is not in use	4

Prepared by the Sonoma County Master Gardeners, Food Gardening Specialists, July 2015, (updated in 2019) as a resource for the video "Growing a Thriving Vegetable Garden with Less Water." Video Link: http://youtu.be/YftVCS0xEX8