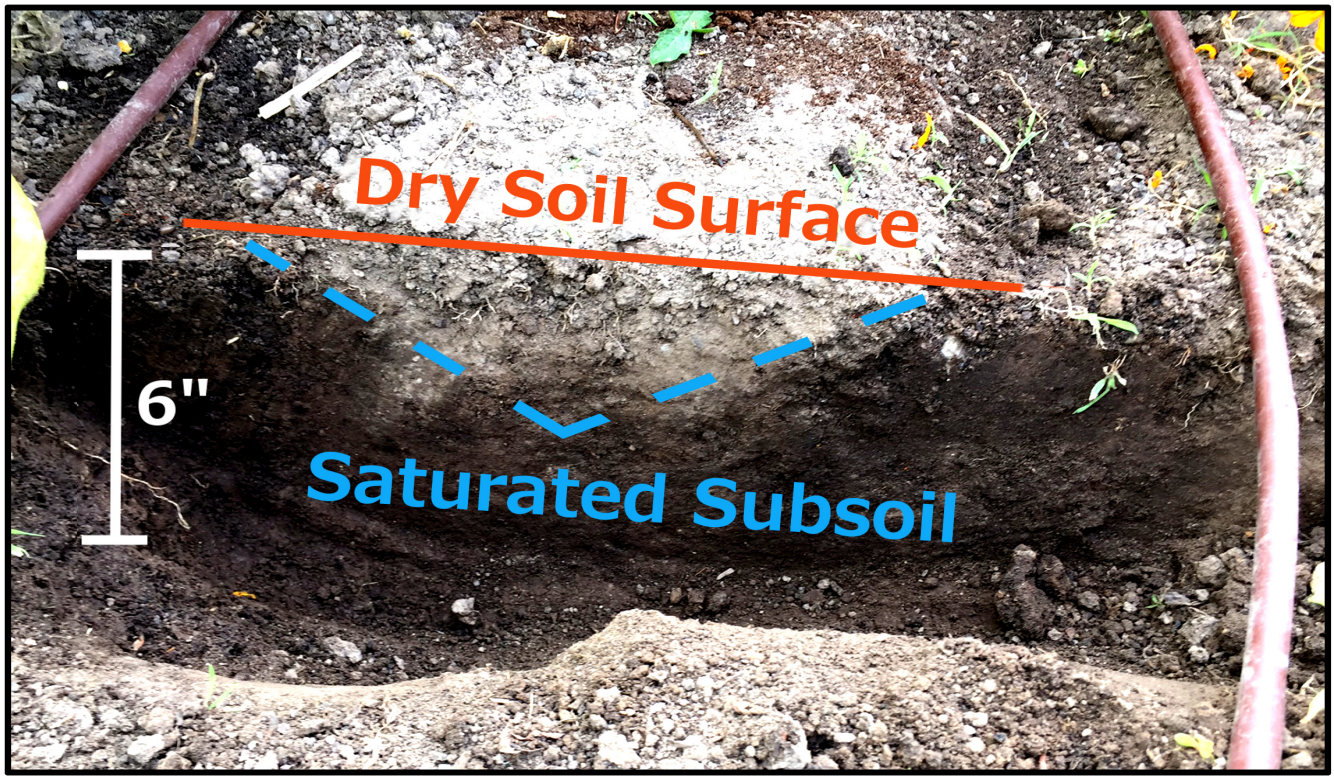
WASATCH COMMUNITY GARDENS

SUCCESSFUL GARDENING WITH DRIP IRRIGATION

Gardeners are responsible for understanding the basics of installing and repairing the drip system on their own plots. The Irrigation Steward can show you how to properly maintain your system so that it can take good care of your crops throughout the growing season. Modification of the system in any way, or opening the green irrigation boxes, is prohibited without WCG permission.

How Drip Irrigation Works

Drip irrigation operates under low pressure through a pressure reducer and filter, and the fittings are conveniently hand-fitted without any adhesives (and only a few simple tools). Instead of overhead sprinklers, drip systems efficiently apply water where you want it – the deep root zone of your vegetables – instead of watering soil surfaces that readily evaporate, encourage shallow root systems, and germinate more weed seeds. As the drip system slowly saturates the soil, the moisture fans out beneath the surface. While the surface may appear dry, the subsurface is well watered. As you can see in this photo of a garden plot's soil profile, there is a dry spot between drip lines, but the entire subsoil is heavily saturated 2-3 inches below the surface.



To successfully garden with drip irrigation, you should:

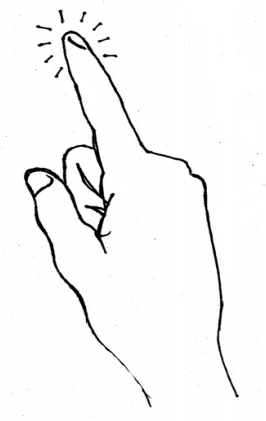
- Sow seed in trenches near drip lines
- Plant seedlings in craters near drip lines
- Cover surface with mulch of leaves or straw
- Flatten your plot surface and do not plant crops in hills
- Interplant your plot fully, so that foliage shades the surface
- Do not till, especially when soil is very wet

How Much Water Do Plants Need?

On average, vegetables need 2 inches of water per week (depending on various site-specific factors, WCG sets its watering schedules to provide between 2-4" per week), but it all depends on the season.

In March and April, cooler temperatures and abundant rains usually provide all your watering needs, so the automatic drip system is not turned on at this stage. If you have planted cool-season seeds or seedlings, occasional hand watering may be required while their roots are shallow. Then in May, your Irrigation Steward will work with you to prepare the drip system. Early on, automatic-watering schedules will be daily and brief, to top off the moisture already present in the soil and keep the surface moist for new warm-weather transplants and seeds.

As seedlings become established in June, deeper and more infrequent watering cycles provided by the drip system will allow the soil to dry somewhat between cycles, reducing the prevalence of plant diseases and encouraging your plants to grow stronger, deeper roots. Occasionally, such as during extremely hot days or when seeding a fall crop, additional hand watering may be required.



How do you know if the system is providing enough water? Stick your finger into the soil, or dig a small hole. While the surface may appear dry, if the area containing the roots or seeds is moist, you do not need additional water, even if leaves are wilted. In fact, watering too much can present the same plant symptoms as too little water. If your plot's sub-surface moisture is consistently dry for a couple days, please check for leaks in your drip tape and then contact the Irrigation Steward and WCG Garden Manager.

Smart Planting Practices in the Desert

When sowing seeds, **create furrows** a few inches deep, then cover to a depth equal to twice the seed's width. You can additionally cover seeds with boards or row covers while germinating, but check them often and remove covers as soon as seeds sprout. Larger seeds, like peas, can be soaked prior to planting to germinate quicker. When transplanting seedlings, **dig a crater** a few inches deep and a foot wide to plant into. For spindly tomato seedlings, pick off the lower leaves and bury their stems up to a few inches from the top leaves. They will set new, deep roots from the buried stem.

Covering your plot with a few inches of mulch will help your plants grow by conserving moisture, maintaining a cool soil temperature, suppressing weeds, and adding soil organic matter. Try mulches of leaves, straw, grass clippings, or pine needles (woodchips in garden beds are not advised because they can take longer to break down and may tie up the available nitrogen). Some gardens have mulch available for you to add to your plot, or you may have to purchase your own. Avoid heavy mulching when seedlings are small or the soil is cool, and be prepared for certain mulch-loving pests like slugs.

In an arid environment like ours, garden beds that have hilled surfaces will heat up and dry very quickly, because of the increased surface area. This can be a good thing if you want to get an early spring planting, and a hilled, south-facing surface will be ready to plant before a flat or mulched area. In the heat of summer months, hilled plots and plants will dry out faster. To retain moisture**, level off your bed to be as flat**. If the pathways next to your bed are deep, you can fill them with woodchips.

Another way to keep your soil cool is to **plant complimentary crops close together**. For example, tall plants like corn and beans grow well with a groundcover like squash. Likewise, tomatoes can provide a canopy for lettuce and carrots, creating a shady microclimate for the soil.

While it may be tempting to till your plot, this can increase moisture loss and the decomposition of organic matter that acts like a sponge to hold moisture in the soil. In a small garden, tillage is usually only necessary during the first year of garden establishment, and you can reduce additional compaction by keeping off your garden bed and adding organic matter annually. Never disturb the soil when it is very wet! You will destroy the soil texture, which takes years to recover.