

Drip Irrigation Troubleshooting Guide

by Greg Alder



Installing

- Warmth makes materials easier to work with so lay materials in sun, or
- Fill mug with hot water; dip tube end into, or
- Heat tube with match or lighter
- Tools can make work much easier: [a gun puncher](#) and [a barb insertion tool](#) might be worth the money

Clogging

- [Filters](#) are best, first line of defense
- [Micro-sprinklers](#): run at high pressure briefly to blast out debris; use large orifice models, as they clog less often
- Last emitter on line often clogs first; cut off and connect new segment with emitter
- Flush lines periodically by opening end, especially after repairing or adding new emitters/lines
- Set automatic timer to run system while you are normally around to observe (not the middle of the night)
- Larger “half inch” tubing (thick as a carrot) clogs less often than smaller “quarter inch” tubing (as thick as a pencil)

Watering Plants with Different Needs

- Using emitters or micro-sprinklers with different water volume outputs allows plants with different water needs to be watered on same schedule (i.e. same valve/station), or
- Use multiple emitters or micro-sprinklers on bigger/thirstier plants
- Adding [inline shut-off valves](#) gives increased flexibility; can add one to a line that serves one plant only or a line that serves multiple plants, and then adjust to control water flow
- New vegetable or tree added? Be sure emitter is directly over rootball (yet best to not touch stem) at first; handwater to supplement if necessary; vegetable will grow roots into surrounding soil after one or two weeks; tree will take one or two months
- Be not beholden to your drip system: for example, overhead water for carrot seed germination; occasionally spray potato foliage with hose to clean and prevent mites

Run Times and Frequencies

- Most common error is not running system long enough at any one time
- Variables that affect how long and often to run system include: emitter output (higher output = less time needed); number of emitters per plant (more emitters = less time needed); soil type (sandier soil = less time needed, but needed more often because of less water-holding capacity); season (summer = more often, and winter = less often, but note that run time need not change); plants (avocados need more water than grapes); weather (heat wave makes plants thirstier); climate (plants inland need more water than plants near beach)
- Because of numerous variables, always observe and adjust; dig to discover truth of soil moisture where the roots are
- Don't water again if soil still wet; don't water so much that penetrates far below roots
- But for reference: Drip on vegetables for me have done well running system for approximately 45 minutes each time; in summer, at highest frequency, about every three days, but every two weeks in winter; my drip lines are 0.5 gallon per hour emitters spaced nine inches apart; soil is sandy loam; location is Ramona, twenty miles from ocean
- And for reference: Micro-sprinklers on fruit trees for me have done well running system for approximately four to five hours each time, which applies two to three inches of water under canopy; in summer, at highest frequency, it's about every six days for avocados, ten days for citrus, two weeks for deciduous fruit trees
- Note that trees less than one year in ground need water more often than above
- Use tuna cans to estimate sprinkler output in inches; use a bucket (place sprinkler inside) to measure output in gallons

Miscellaneous Challenges

- Changing irrigation: changing where water is applied is easiest on plants if done in late winter through early spring; plants may die if done in summer or early fall
- Slopes and uneven output: use [pressure-compensating emitters](#), or; plant thirstier plants lower; water as infrequently but deeply as possible; install backflow prevention valve
- Slopes and runoff: first moisten soil surface with 1-3 minute pre-irrigation; slightly bury dripline; locate emitters and sprinklers uphill from plants; add coarse wood-chip mulch
- Sandy soil and raised beds: emitters must be spaced no farther than 12 inches to avoid "chimneys"
- Can test lateral spread of water in your soil by filling milkjug with water, poking hole near bottom, then after a day, digging to discover
- Fittings come apart: pressure might be too high; install regulator or manually keep low at faucet
- Tripping hazard: bury tube; stake to prevent snaking and rising; insert wooden stake beside sprinkler

This guide is also available with images and details at gregalder.com/yardposts/