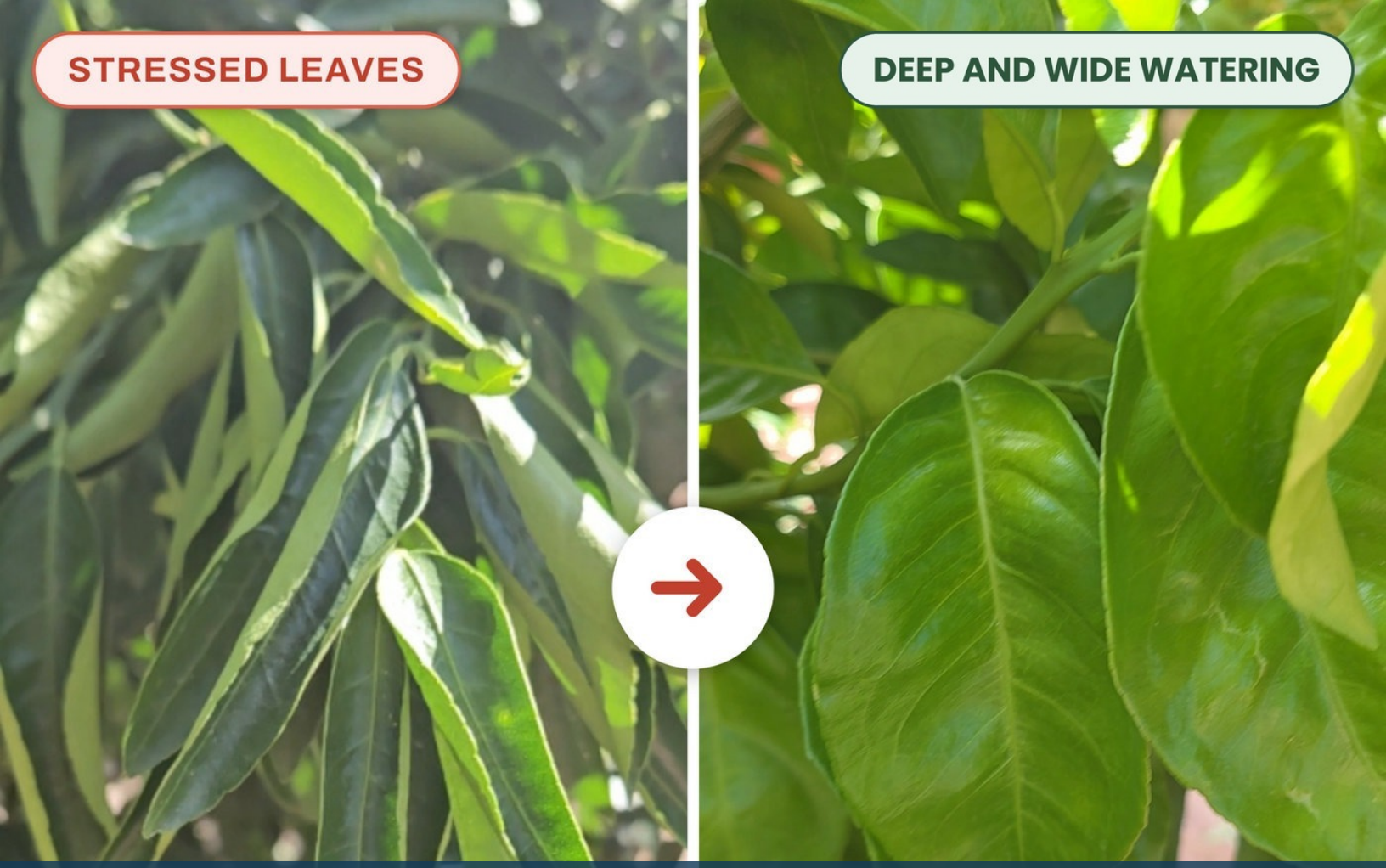

Real citrus trees in Tucson, Arizona

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THE FRUIT TREE WATERING GUIDE

Your Fruit Tree Is Thirsty.

How to tell, and how to fix it:

How much water, how often, and exactly where to put it.

- ✓ **The signs of a thirsty tree (with real photos)**
- ✓ **Gallons and how often, by tree size and season**
- ✓ **Where emitters go (hint: not the trunk)**

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Helping Tucson gardeners since 2014
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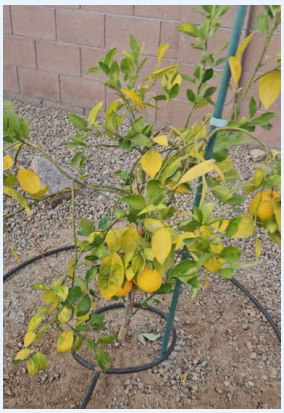
Is your tree thirsty?

Most fruit trees I see around town are underwatered, even the ones on automatic drip systems. These are the signs I look for first:

Leaves curled inward

Yellowing can mean thirst, so check the soil first



Stalled growth year after year

- **Leaves curl inward from the edges.** This is usually the first sign you will notice.
- **Aphids move in.** A stressed tree pushes sugars into its leaves, and aphids love it.
- **Leaves and fruit drop** before they should.
- **Little or no new growth**, year after year.
- **Older leaves turn yellow** and fall.
- **Citrus blooms in September or October.** That off-season bloom often means the tree was stressed by drought over the summer.

Most people don't have a tree problem. They have a watering problem. The good news: it's the easiest thing to fix.

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The 3 watering mistakes I see in almost every yard

- **Too few gallons each time.** People are shocked how much water a tree really needs in one watering.
- **Too often, too shallow.** Short daily runs keep roots near the surface, where they cook in the summer heat.
- **Water in the wrong place.** A couple of emitters at the trunk, or a tree well that's barely 2 feet wide, while the feeder roots are out at the edge of the canopy.

Drip line dumping water right at the trunk

Better: wide berms and mulch over the whole root zone

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Step 1: Measure your tree

Measure across the canopy from drip line to drip line: the outer edge of the branches on one side to the outer edge on the other side. Or measure from the trunk to the edge and double it.

Write it down: my canopy is _____ feet across.

Step 2: Know your soil

Grab a handful of moist soil from about 6 inches down and squeeze it:

- **Sandy:** feels gritty and falls apart when you open your hand.
- **Loam:** holds its shape, then crumbles when you poke it.
- **Clay:** feels sticky and slick, and you can squeeze it into a ribbon.

Not sure? Use the **loam** numbers in this guide, then check with the screwdriver test in Step 5 and adjust.

Why soil matters: sandy soil holds less water, so it gets less water, more often. Clay holds more, so it gets more water, less often, applied slowly so it soaks in instead of running off.

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Step 3: How much water each time

Gallons per watering for an **established tree** (in the ground 3+ years). Spread over the whole root zone, this soaks citrus roots about **2 feet deep**. **Use the same amount all year** and change how often you water (Step 4).

Canopy across	Sandy soil	Loam soil	Clay soil
2 ft	1.5 gal	2.5 gal	3 gal
4 ft	6 gal	10 gal	12 gal
6 ft	14 gal	22 gal	27 gal
8 ft	24 gal	40 gal	48 gal
10 ft	38 gal	60 gal	75 gal
12 ft	55 gal	87 gal	108 gal
14 ft	75 gal	118 gal	148 gal
16 ft	96 gal	155 gal	193 gal
18 ft	122 gal	195 gal	245 gal

An 8 foot tree in loam needs about 40 gallons every 3 to 5 days in summer. That's 60 to 90 gallons a week. Short daily runs never get there.

These numbers are a starting point, not a law. Check your depth with the screwdriver test (Step 5) and adjust.

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Step 4: How often to water

Days between waterings for **established citrus on drip**, using the gallons from Step 3. Change your timer at least every season: trees use several times more water in summer than in winter.

These are based on Tucson's climate. Hotter places (Phoenix, Las Vegas): lean short. Cooler, higher areas: lean long. **Live somewhere else?** Ask your local extension office, or email us where you live (info@thriveandgrowgardens.com) for a schedule for your area.

Season	Sandy soil	Loam soil	Clay soil
Jul - Sep (hottest)	every 2-3 days	every 3-5 days	every 4-6 days
May - Jun	every 3-4 days	every 5-7 days	every 6-8 days
Mar - Apr	every 5-7 days	every 7-10 days	every 8-12 days
Oct - Nov	every 5-7 days	every 7-10 days	every 10-14 days
Dec - Feb	every 10-14 days	every 14-21 days	every 14-21 days

- **Lemons and grapefruit** use about 20% more water than oranges: add about 20% to the Step 3 gallons. **Mandarins** use a little less.
- **Peaches, apricots, plums, apples and figs:** follow the same chart while they have leaves. Once they drop their leaves in winter, water about once a month unless it rains.
- **Use the short end** for young or small trees, full afternoon sun, reflected heat from walls or rock, and heat waves.
- **Use the long end** for big, shady trees and cool or rainy spells. **1/2 inch of rain or more?** Skip the next watering.

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Newly planted trees (first year)

New trees only have their root ball to drink from, so they need **smaller amounts much more often**. Water the root ball and about a foot past it (use the 2 to 4 ft rows in Step 3):

Time in the ground	How often
First month	every 2-3 days
Months 2-3	every 3-5 days
Rest of year 1	every 2-7 days May - Sep, every 7-14 days the rest of the year

- **About 8 weeks after planting**, start moving water out to the edge of the root ball and beyond, so roots grow outward.
- **Every year**, add or move a ring outward as the canopy grows. Most trees outgrow their first watering setup within a year or two.
- After about **3 years**, switch to the established-tree charts in Steps 3 and 4.

New trees die from too little water far more often than too much. In the first summer, check the root ball every few days.

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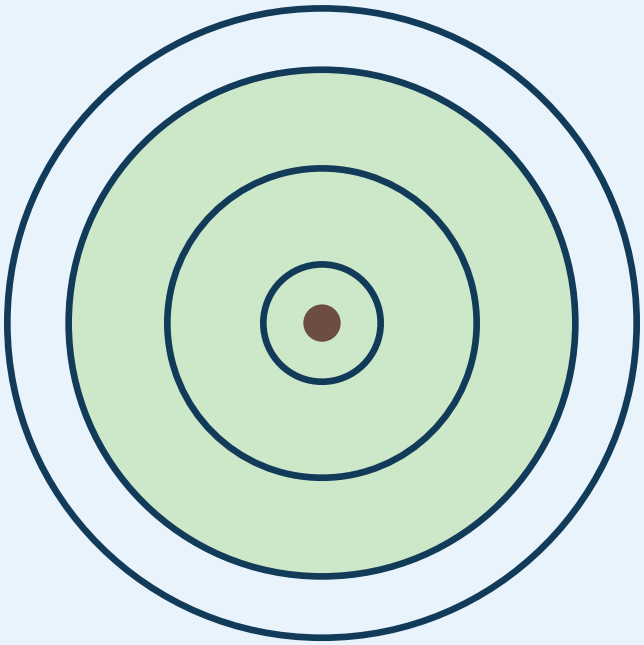
Step 5: Water where the roots are

A tree's feeder roots spread out to **just past the edge of the canopy**, not at the trunk. Water at least **75% of that area**, with rings spread across it:

Inner ring around the root ball

Trunk: keep dry, no soil or mulch piled on it



Outer ring: just past the drip line

Green = area under the canopy

- **Use rings, not a single loop at the trunk.** Add an outer ring as the tree grows each year.
- **Keep the trunk dry.** No soil, mulch or standing water against the trunk or root flare.
- **Build the berm on the downhill side** to catch rainwater, instead of a tiny well hugging the trunk.
- **Cover the root zone with a fine composted mulch**, kept a few inches away from the trunk.

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Drip rings spread across the whole root zone, out past the drip line

The screwdriver test: about an hour after watering, push a long screwdriver or piece of rebar into the soil near the drip line. It slides easily through wet soil and stops at dry soil. Aim for at least 2 feet. If it stops short, water longer next time.

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Step 6: Set your timer

Add up the flow of every emitter on the tree (it's printed on each emitter, in gallons per hour). Then:

Run time (hours) = gallons needed / total gallons per hour

Example: an 8 foot tree in loam needs 40 gallons. Sixteen 1-gallon-per-hour emitters put out 16 gallons per hour. 40 / 16 = **about 2 1/2 hours**.

Most drip runs for trees should be **2 hours or more**. If your math says 20 hours, you don't have enough emitters. If it says 10 minutes, that's a bubbler or hose, not drip.

Two ways to get it right

Option 1: Build it yourself

Use standard drip parts to make rings around the tree. Watch my J-loop video and use my parts list:

- J-loop how-to video
- J-loop parts list

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Same tree: before and after deep, wide watering

Option 2: ThriveRing™, custom-built for your tree

After 10+ years of trying irrigation products and being let down by most of them, we built our own. Every ThriveRing is **built to order for your tree size and your soil**: rings closer together in sandy soil, lower-flow emitters in clay so water soaks in instead of running off. 12mm UV-resistant tubing with pressure-compensating emitters every 12 inches. Our first install went in back in 2018 and it's still working great.

- **Get your custom ThriveRing**

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Want more help?

Free fruit tree course

Inside Green Thumb Academy you'll find my full fruit tree course with videos on planting depth, stakes and ties, berms and mulch. It's free to join, and you can post photos of your trees and ask questions.

- **Join Green Thumb Academy free**

In the Tucson area?

We'll come look at your trees, diagnose what's going on, and fix the watering, planting and berm problems for you.

- **Book a consultation**
- Call or text **(520) 261-7021**
- Email **info@thriveandgrowgardens.com**

Your trees (and your taste buds) will thank you!

How these numbers were figured

Gallons: peak summer daily water use for citrus from the University of Arizona Cooperative Extension (AZ1151, Irrigating Citrus Trees) x the summer interval for each soil. Every amount fits within what the top 2 feet of soil can hold (University of California soil water-holding values: about 1.0, 1.9 and 2.1 inches per foot for sandy, loam and clay). Frequency follows UA's intervals for citrus on drip, which are shorter than for basin watering because drip wets only part of the root zone. Dripline placement follows Landscape Watering by the Numbers (Arizona Municipal Water Users Association). Every yard is different: use the screwdriver test and your tree's leaves as your final guide.

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