

# Summer Watering Needs for Plants

## WSU Cowlitz County Master Gardener

WSU Extension of Cowlitz County

Gary Fredricks garyf@wsu.edu

304 Cowlitz Way

Kelso, WA 98626

(360) 577- 3014

9 a.m. - 12:30 p.m.

<https://www.cowlitzcomg.com/>

w-w-water...



# Water Wisely this Summer!



# Topics Covered:

- Plant needs.
- Longview rainfall graph.
  - Know your soil.
- How to check for water depth.
  - DIY tests.
  - Watering needs.
    - Watering tips
  - Watering mistakes.
  - Watering methods.

# Plant Needs:

- Sunlight (minimum of 6 hrs. per day).
- Good soil (plant dependent).



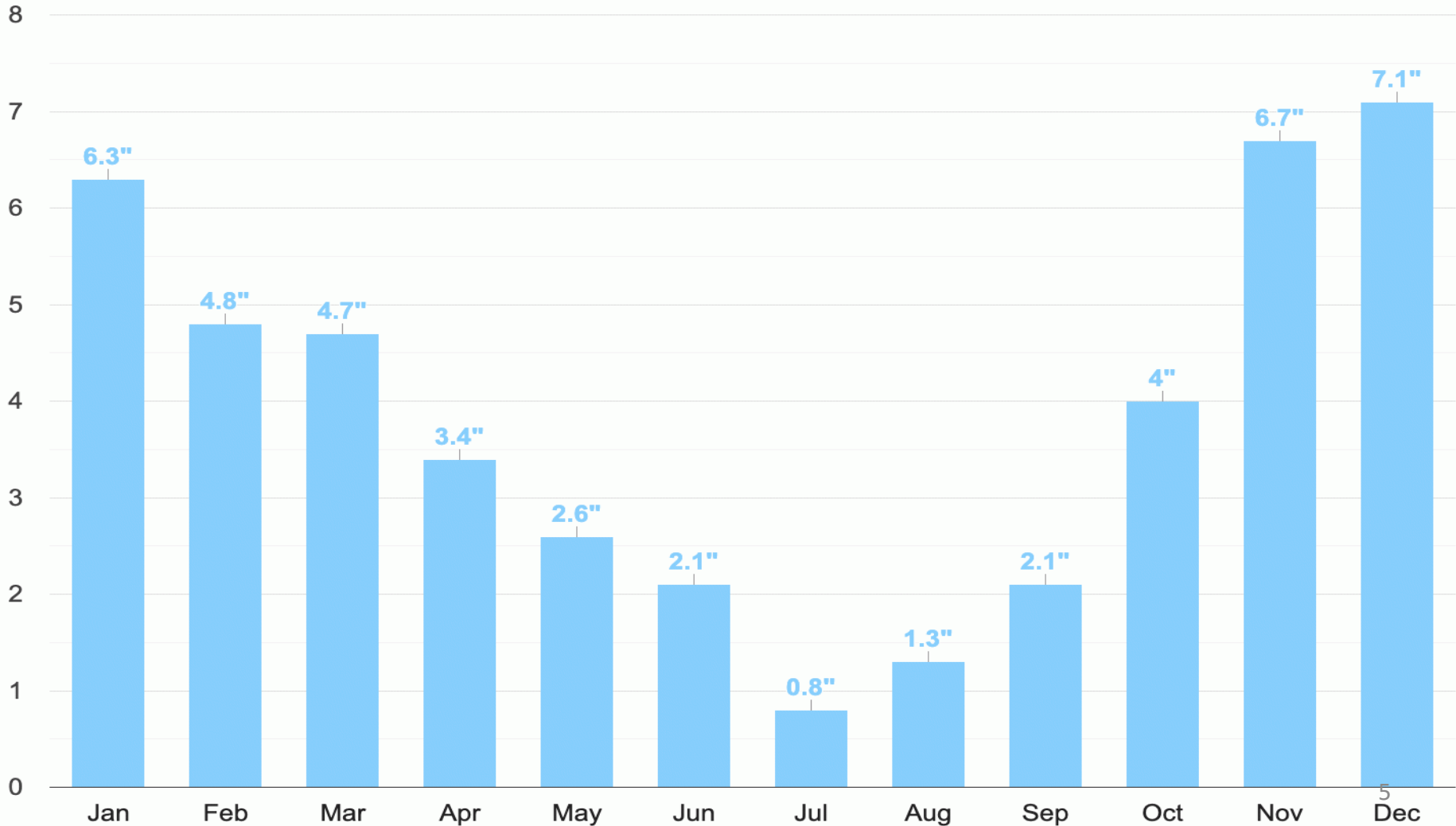
- Air movement (prevents foliage diseases).
- Water (if you have to tote water or hoses chances are watering won't get done).



# Longview Rainfall Graph for the Year:

Rainfall - Longview, WA

Rainfall (")





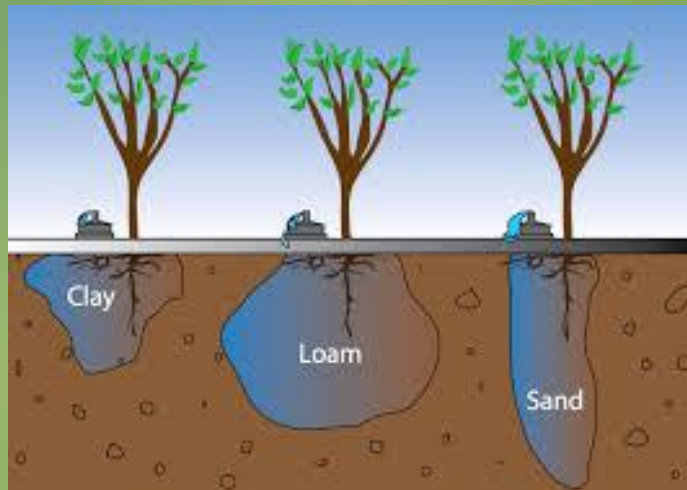
# Know Your Soil!



Know your soil for watering needs:

Clay soils retain water and need less water than sandy soils.

A simple DIY test is the soil texture test:  
<https://hgic.clemson.edu/factsheet/soil-texture-analysis-the-jar-test/>



# How to Check for Water Depth:

- Vegetable gardens need approximately 1 inch of water per week.
- A simple and quick check for lawn and tree moisture is push a 12 inch screwdriver into the ground and see where it stops. It should go in about 6 - 8 inches. If not the tree needs water.
- To determine when and how much to water:
  - Dig into the soil and see/feel where the moisture level is.
  - Soil should never be wet on the surface and moist an inch or two down.
  - Check the soil just after watering and within several hours or the next day, to see how fast the water seeps to what depth in the soil.
  - Take this seepage into account for future watering decisions.

# An Easy DIY Test:

A Percolation (Perc) Test.

## You Ask What Is and What Is the Purpose of a Percolation Test?

- A test that is conducted to give you an idea the drainage rate of your soil.
- This test gives the gardener an idea how often they need to water their garden or if you need to amend your soil.

<https://s3.wp.wsu.edu/uploads/sites/2076/2018/04/C221-DIY-Soil-Tests.pdf>



# Steps to Conduct a Percolation Test.

- Dig a hole approximately 1 foot diameter and 1 foot deep.



- Set the soil aside on a tarp or in a bucket.



# Steps to Conduct a Percolation Test.

- Fill the hole with water, and allow to drain.



- Once drained, immediately refill the hole with water and measure the depth of the water with a ruler.



# Steps to Conduct a Percolation Test.

- 15 minutes later, measure the drop in water in inches.
- Multiply the number by 4 to calculate how much water drains in an hour.



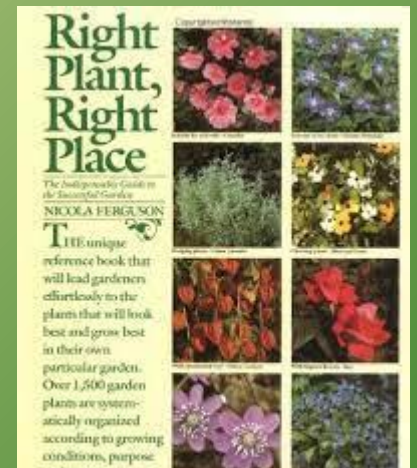


# What do the Results Mean?

- The ideal soil drainage is around 2" per hour, with readings between 1"- 3" generally OK for garden plants that have average drainage needs.
- If the rate is less than 1" per hour, your drainage is too slow, and you'll need to improve drainage or choose plants tolerant of wet soil.
- If drainage is more than 4" per hour, it's too fast, and you'll need to reduce drainage or choose plants that tolerate dry conditions and "droughty" soils.

# Addressing the Issues:

- 1. COMPOST, COMPOST, COMPOST!
  - Incorporate compost and organic matter into the soil.
  - Organic matter helps heavy clay soil to drain and helps coarse sandy soil to hold moisture, so it's a win-win no matter what your soil type!
- 2. Choose plants suited to your soil drainage.
- 3. Build raised beds for better control over the soil texture.





# Watering Needs:

- Germinating seeds and seedlings need to be kept uniformly moist and not washed away; water them with a gentle spray every day or two.
- Developing plants need to be watered deeply, but less often, to encourage deep root growth. Water to a depth of at least six inches and then let the surface inch or two completely dry out before watering again.



# Watering Needs:

- Crops such as lettuce, beets, green beans and chard draw water from the top foot or less of soil.
  - Thoroughly soak the rooting zone and then don't water until the plants show signs of needing additional water such as turning a dark bluish green or wilting during the hottest part of the day.
- Corn, tomatoes, asparagus and rhubarb have deep root systems that allow them to draw water from the top two feet of soil.
  - Deep-rooted plants need water less frequently, but need more water to reach the rooting depth.

# Watering Needs:

- As a general guideline, garden plants that have been watered properly, and therefore have developed deep roots, need a thorough watering every five to seven days in hot weather.
- Trees and bushes that are newly planted need to be watered until established (deep watering at dripline). Unfortunately, trees will usually show problems the following year instead of now.
- Lawns require irrigation when it begins to be less resilient and springy and does not bounce back up after being walked on (deep watering with sprinklers is best).

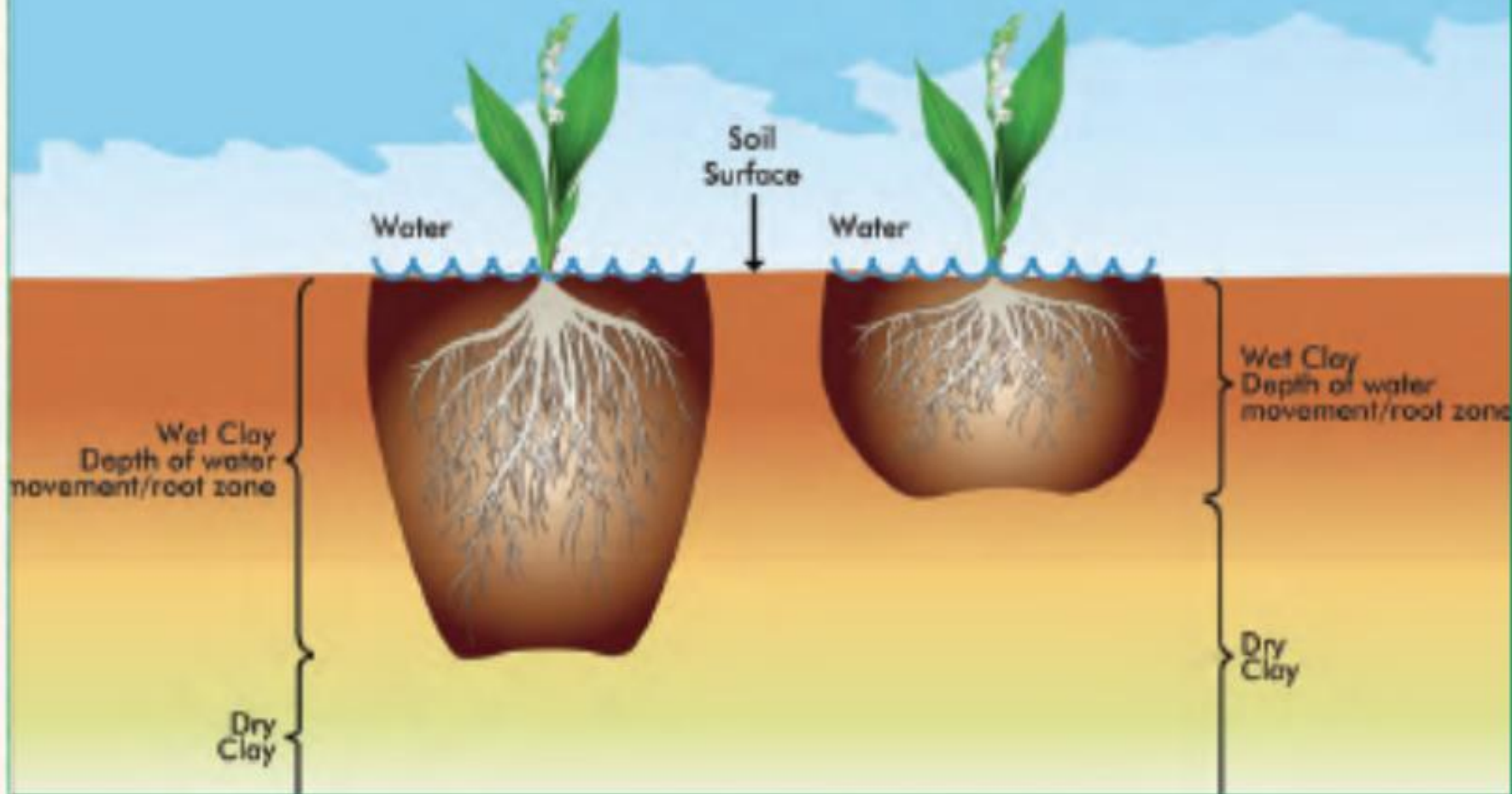
# Watering Tips:

- Incorporate compost at planting. This improves water absorption and the water holding capacity of the soil.
- To reduce evaporation mulch (2 - 4 inches) and water during the cool parts of the day. Avoid watering while it is windy.
- To help prevent disease, water in the morning or early enough in the evening so the foliage can dry before nightfall. Always water tomatoes, peppers and squash at the base, not with overhead sprinklers.
- Remove weeds that take needed water from your vegetables.
- Better to water for a longer time, less frequently.

# Water Movement & Deep Infrequent Watering

Watered 15 Minutes:  
Mondays, Wednesdays & Fridays

Watered 5 Minutes:  
Daily





# Common Watering Mistakes:

- Frequent, shallow watering promotes shallow roots that are susceptible to drought.
- Overwatering can fill soil pores with water, leaving little or no oxygen for roots (suffocating roots) and leaches away nutrients from the root zone.
- Underwatering does not allow roots to replace water loss due to transpiration (normal water movement through the plant and evaporation through the leaves, stem and flowers).
- Postponing irrigation after plants show signs of needing water can damage plants quickly in hot weather. Observe your plants every day or two and respond to their needs promptly.

# Watering Methods:

**Rainfall (Minimal during July & August)**

- **Note when it rained and monitor garden when water is needed.**



# Watering Methods:

## Hand Watering:

- Time consuming and labor intensive.





# Watering Methods:

## Sprinklers: (best for lawns)

- Wasteful for gardens by watering everything in the sprinklers path.
  - Can cause plant disease if done at the wrong time.
  - Encourages weeds.





# Watering Methods:

## Soaker Hoses:

- Can be wasteful by watering more than is needed.
  - (I use soaker hoses on my corn)





# Watering Methods:

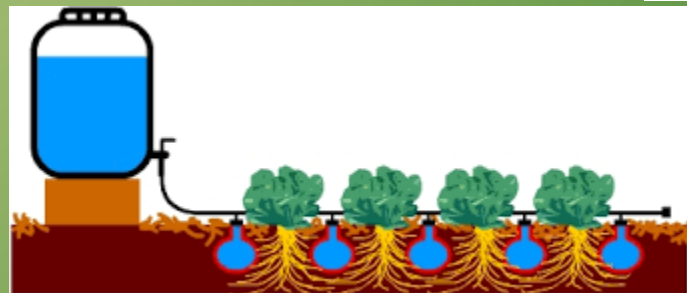
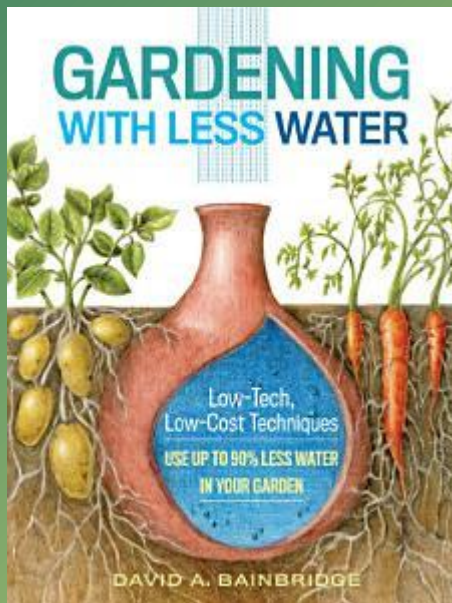
## Drip Irrigation:

- Most effective.
- There are all types of drip irrigation products out there:
  - DIG (Home Depot), Drip, KINGSO, KORAM, Mister Landscaper (Lowes), MIXC, Orbit, Rain Bird, Raintree, and even Harbor Freight sells kits.
- A lot of parts are interchangeable.



# Watering Methods:

- Olla Pots (usually clay or terracotta). They make the plants work for their water.  
(price varies \$20 - \$60 unless DIY).





# Watering Methods:

- Watering stakes (unglazed terracotta, ceramic and various other materials). They make the plants work for their water.  
(price varies \$15 - \$25).



# Watering Methods:

- Water Buckets, Water Rings
- (15 gallon ring about \$18) and Jugs.





# Watering Methods:

- Water Collection  
(price varies \$20 - \$4000 shop around).



Prices vary.





My 1<sup>st</sup> system:

275 gallon tote.

180 feet of 1" PVC pipe run underground which connects to a water faucet within my orchard.

I use this to water newly planted orchard trees.

In use for 4 years.



**My 2<sup>nd</sup> system: A 275 gallon tote used to water ornamental beds. In use for 6 years.**





**My 3<sup>rd</sup> rain barrel system: A 55 gallon drum collecting water from my treehouse. Used to water ornamentals. Just completed 10 Oct 2020.**

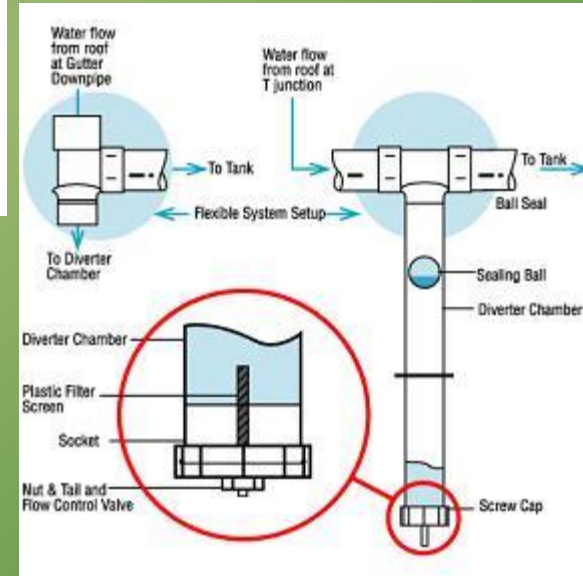


# Maintenance & Accessories:

- ▶ Keep the roof, gutters, and downspouts clear of dirt & debris.
- ▶ Direct overflows away from the structure.
- ▶ Empty above ground systems during freezing weather.
- ▶ Screens, Mosquito Dunk & Mosquito Bits help control mosquito, gnat, and fly breeding. Contains B.t.i. (bacterium thuringiensis subspecies israelensis) toxic to mosquito larvae and black and psychodid fly larvae.
- ▶ “Leaf Eaters” help keep your rain barrels clean.
- ▶ “First Flush Diverters” help control sediments and bird drop bacteria.
- ▶ Timers & soaker hoses designed for gravity systems are available.



Rain Harvesting Pty Ltd  
RHUL99 Leaf Eater Ultra  
Rain Head- 3 in. Round



# In Summary:

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- How to check for water depth.
  - DIY tests.
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    - Watering tips
  - Watering mistakes.
  - Watering methods.



# QUESTIONS?



# References:

## WSU:

- <http://pubs.cahnrs.wsu.edu/publications/pubs/eb1090/>
- [https://s3.wp.wsu.edu/uploads/sites/2088/2017/04/Watering-a-Vegetable-Garden\\_RS008-2010v2.pdf](https://s3.wp.wsu.edu/uploads/sites/2088/2017/04/Watering-a-Vegetable-Garden_RS008-2010v2.pdf)
- <https://s3.wp.wsu.edu/uploads/sites/2076/2018/04/C221-DIY-Soil-Tests.pdf>

## OSU:

- <https://today.oregonstate.edu/news/don%E2%80%99t-neglect-water-garden-summer>
- <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9027.pdf>
- <https://agsci.oregonstate.edu/mes/irrigation/introduction-drip-irrigation>

## Clemson:

- <https://hgic.clemson.edu/factsheet/soil-texture-analysis-the-jar-test/>

## Texas A&M:

- <http://counties.agrilife.org/montgomery/files/2011/05/Tree-Watering-Tips-2.pdf>

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