Is my tree hungry and thirsty? Determining fertilizer and water needs for a growing tree

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Take home messages

• We have tools to determine if the tree needs fertilizer or more water.

• A lab soil or leaf test is more reliable to determine accurate nutrient needs.

• It is good to understand the fertilizer label to know how much the fertilizer contains.

• Timely, frequent irrigation and optimal fertilization keeps trees healthy and productive.
Outline

• Water requirement for citrus
  • Irrigation management
  • Irrigation rates

• Nutrient management for home citrus gardeners
  • Types of fertilizer ideal for home citrus
  • How often to fertilize and how much
  • How to select the right fertilizer for home gardens
**Citrus water requirements**

**Definition:** The loss of water from a vegetated surface through the combined processes of soil and plant evaporation and plant transpiration.

Citrus water requirements

Evapotranspiration as seen in the hydrological cycle.

Citrus water requirements

Water needs are highest in summer and lowest in winter.
Tree water needs will depend on soil type

- **Clayey/Loamy**
  - Poor drainage
  - Holds water longer over time
  - Water every two days

- **Sandy**
  - Good drainage
  - Water moves through quickly
  - Water every day

Graphics: BioRender.com
Tree water needs will depend on tree age and size

**Young Tree**
- Not bearing fruit
- Less than four years old

½ gallon each time

**Mature Tree**
- Bearing fruit
- Four years old and up

1 to 1 ½ gallons each time

Graphics: T.R. Weeks, UF/IFAS
But what if it rains?

If you receive ½ inch (or more) of rain, recommended not to irrigate for 2 days because the soil will be moist enough.

Florida receives enough rainfall in a year, but we don’t receive the rainfall when we need it.
Nutrient management for home citrus gardeners

**Controlled- or Slow-release Fertilizer**
- Coated granules that dissolves over time releasing fertilizer inside
- Releases over a period of 6–12 months
- Highly recommended for home citrus

**Application**
- Young tree
  - 0.5 lb/tree, 2× a year
- Mature tree
  - 1 lb/tree, 2× a year

**Timing**
- February/March-before bloom
- September/October-after rainy season

Photo: T.R. Weeks, UF/IFAS
Nutrient management for home citrus gardeners

It is important to place the fertilizer near the irrigated root zone, but not directly next to the trunk.

Graphic: T.R. Weeks, UF/IFAS
Nutrient management for home citrus gardeners

18-6-12

Nitrogen (N) ↓ Phosphorus (P) ↓ Potassium (K)

For home citrus, fertilizer should have:
• N:K nearly equivalent amounts, and lowest in P
• Some macronutrients (Ca, Mg, S)
• Some micronutrients (Fe, Mn, Zn, B)

Photo: T.R. Weeks, UF/IFAS
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Any questions?

Thank you!