



# Master Gardener Program

University of California Cooperative Extension 

## **Citrus Care, Maintenance and Pruning 101**

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**University of California  
Cooperative Extension**

# Citrus Cultural Practices

- Proper Planting
- Irrigation
- Fertilization
- Training, Pruning  
Hedging
- Sunburn Protection



# Planting

- When to plant
- Site location-where to plant
- How to plant



# When to Plant

- When the roots have the longest possible time to become established before “stress”
  - Spring for most areas
  - Fall for very hot summer areas (the desert) and areas that are frost free



# Where to Plant

- If you have really poor soil, (drainage), plant using
  - Raised beds
  - Plant on mound
  - Plant in containers



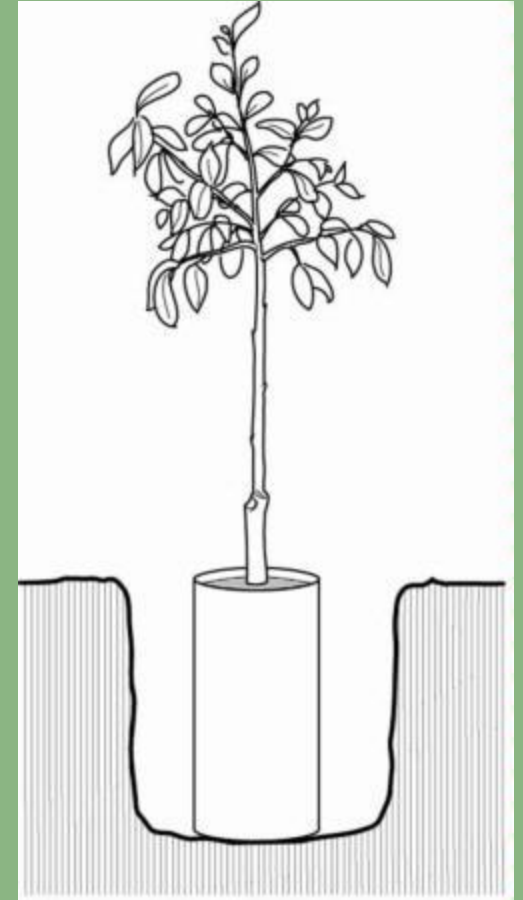
# Where to Plant

- Soil pH between 6.0-7.5
- Best planted on south or west side
- Avoid cold air basins (plant on slope)
- Take advantage of microclimates
- In marginal climates, make it easy to protect trees



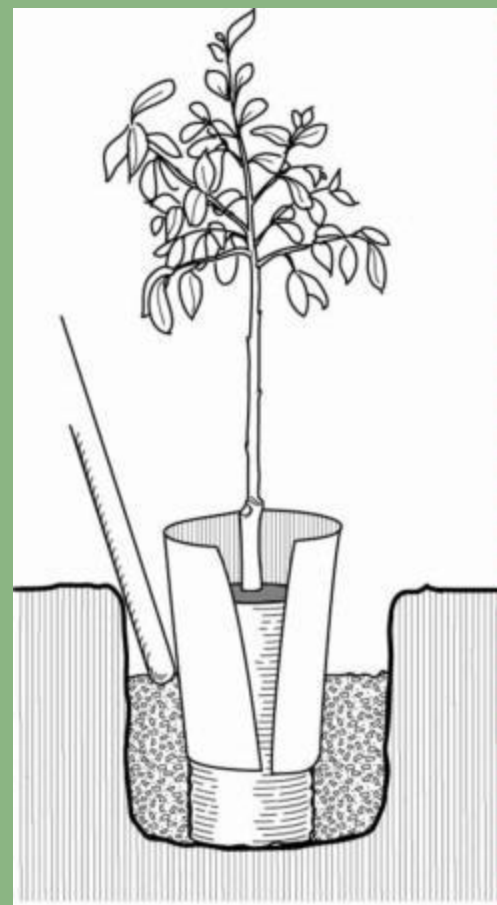
# Proper Planting

- Break compaction layers
- Need 1.5 ft. depth
- Don't amend unless extreme soil conditions-adobe clay
- Tender, succulent roots must be protected
- Dig hole at least 2x pot dia.



# Proper Planting

- Adjust hole depth-top of rootball 1" above soil line
- Lower tree into hole
- Slice container on one side
- Backfill up 6-8 inches
- Remove container
- Tamp and fill
- Water in



# Irrigation

- How to water
- When to water
- How often to water
- It depends.....



# Key Irrigation Elements

- Newly planted trees must be watered in immediately
- Never allow the root system of any tree to dry out
- Citrus is more prone to overwatering (under aeration)
- Water demand is high during spring flush until fruit is 1 inch in diameter
- Keep trunk dry

# Root Rot of Citrus



# Lack of Water in Citrus



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# Methods of Irrigation

- Basin-Flooding Young Trees
- Sprinkler Irrigation-not ideal for mature trees
- Drip-Ideal.



# Irrigation Frequency

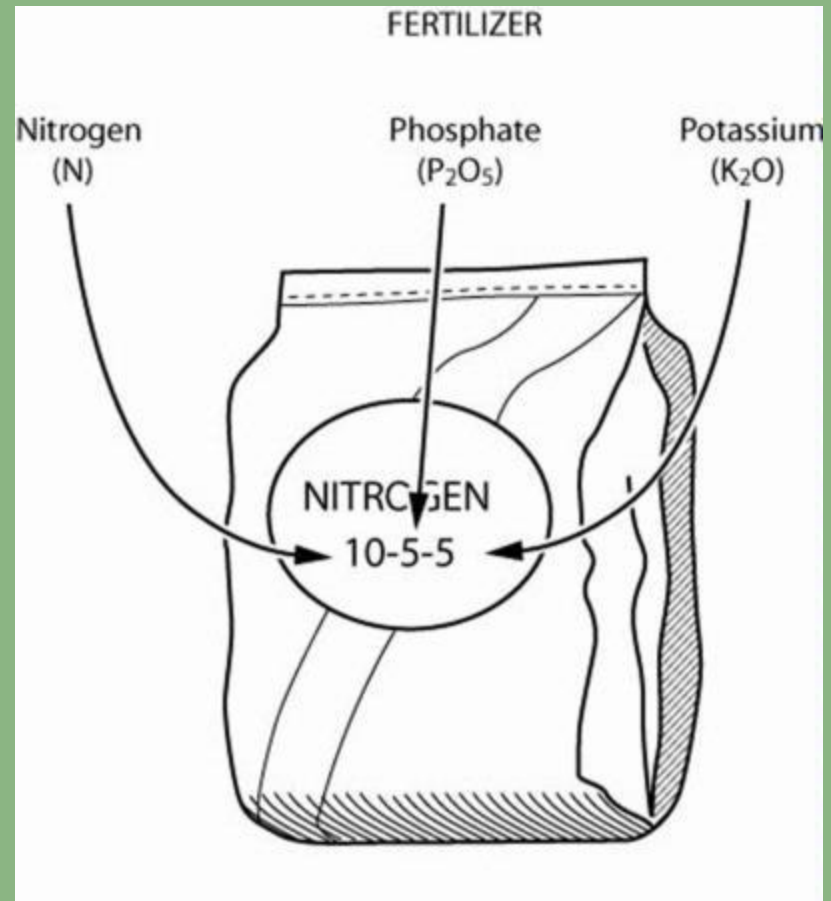
- It depends.....
- On climate zone, season, ET rate, tree age
  - New trees: 2-5 gallons of water per irrigation per tree watered every 5-10 days April/May-September
  - Mature trees: water when top few inches of soil are dry but rest of root system is still moist (not wet); wet to 2 ft.

# Orange Water Requirements in Gallons per Day

Tree canopy Diameter (ft.)	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.4	0.3	0.1	0.1
4	0.3	0.4	0.9	1.3	1.6	2.1	2.4	2.2	1.8	1.0	0.4	0.3
6	0.7	1.0	2.1	3.0	3.6	4.7	5.4	5.1	3.9	2.3	1.0	0.7
8	1.2	1.8	3.7	5.3	6.5	8.4	9.6	9.0	7.0	4.1	1.8	1.2
10	1.9	2.7	5.7	8.2	10.1	13.1	15.1	14.0	11.0	6.4	2.7	1.9
12	2.7	3.9	8.3	11.8	14.6	18.9	21.7	20.2	15.8	9.2	3.9	2.7
14	3.7	5.4	11.3	16.1	19.9	25.7	29.5	27.5	21.5	12.5	5.4	3.7
16	4.8	7.0	14.7	21.0	25.9	33.5	38.6	35.9	28.0	16.4	7.0	4.8
18	6.1	8.9	18.6	26.6	32.8	42.4	48.8	45.5	35.5	20.7	8.9	6.1
20	7.5	11.0	23.0	32.9	40.5	52.4	60.2	56.1	43.8	25.6	11.0	7.5
22	9.1	13.3	27.8	39.8	49.0	63.4	72.9	67.9	53.0	31.0	13.3	9.1
24	10.8	15.8	33.1	47.3	58.4	75.4	86.7	80.8	63.1	36.9	15.8	10.8
26	12.7	18.5	38.9	55.5	68.5	88.5	101.8	94.9	47.0	43.3	18.5	12.7

# Fertilization

- Primary requirement will be Nitrogen

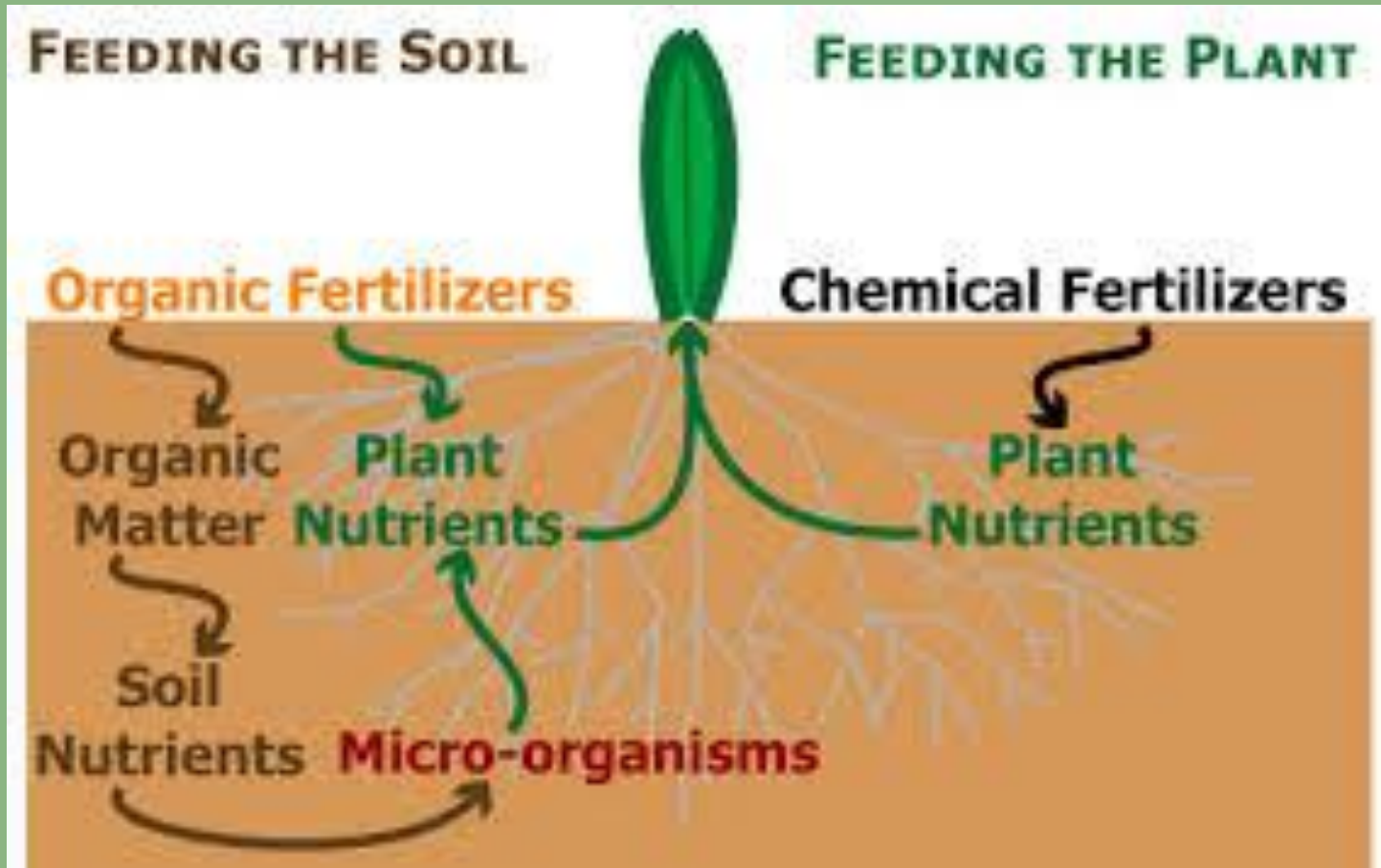


# Sources of N

<http://cmg.colostate.edu/gardennotes/234.pdf>

- Organic Sources
  - Blood meal
  - Bone meal
  - Feather meal
  - Fish meal
  
  - Manures
  - Bat Guano
  - Alfalfa/cotton seed meal
  - Composts
- Chemical sources
  - Ammonium sulfate
  - Urea
  - Ammonium nitrate
  - Etc....

# Fertilizers



# Timing of Fertilizer Applications for Citrus

## In the Non-Bearing years

- *In years 1-2*
  - *1/10 of a pound of N*
- *In year 3*
  - *1/4 of a pound of N per year*
- *In year 4*
  - *1/2 of a pound of N per year*



# Timing of Fertilizer Applications for Citrus

## In the bearing years

- *In years 5 on.....*
- *Average, mature tree (15-20 ft dia.):*
  - *1 pound of actual N per year*
  - *Less (and proportional) for dwarf trees*
  - *Ideally at flowering in early spring, at fruit set and then once again before the end of June.*
  - *Manures should be applied in fall (cautiously)*

# What about Micro-nutrients for Citrus?

– *Zinc, Iron, Magnesium, boron*



# What About Containerized Citrus?

- Slow release
- Complete
- Be aware of micronutrient deficiency, especially boron



# Training, Pruning, Hedging and Espaliered Citrus



# Citrus Pruning Fundamentals

- Maximum stored energy occurs in February to early March in primarily the canopy
- Citrus bloom and bear on new growth
- Some pruning can help to balance between fruiting and vegetative growth for increased fruit size
- Pruning can improve air circulation and light in the canopy

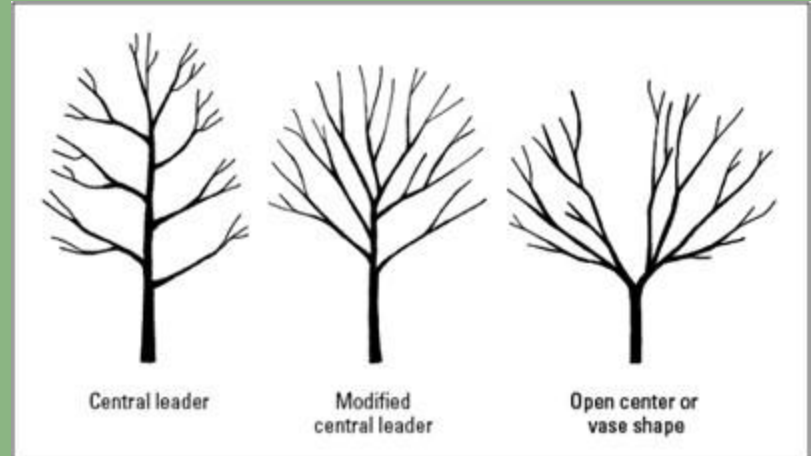
# Citrus Pruning Fundamentals

- The heavier you prune the more it will impact overall growth and fruitfulness
- Ideal time to prune is not really critical-but best in spring after frost danger but before cycle of new growth.
- Avoid late fall pruning to avoid frost injury on new flushes of tender growth
- Summer pruning may be best if crop is still on the tree.

# Training Young Trees

## Select Permanent Scaffold Branches

- Avoid heavy pruning of young trees
- Establish structure in years 2, 3 and 4
- Ideally, a delayed vase or central leader training is preferred.
- Low branching or full skirt is good



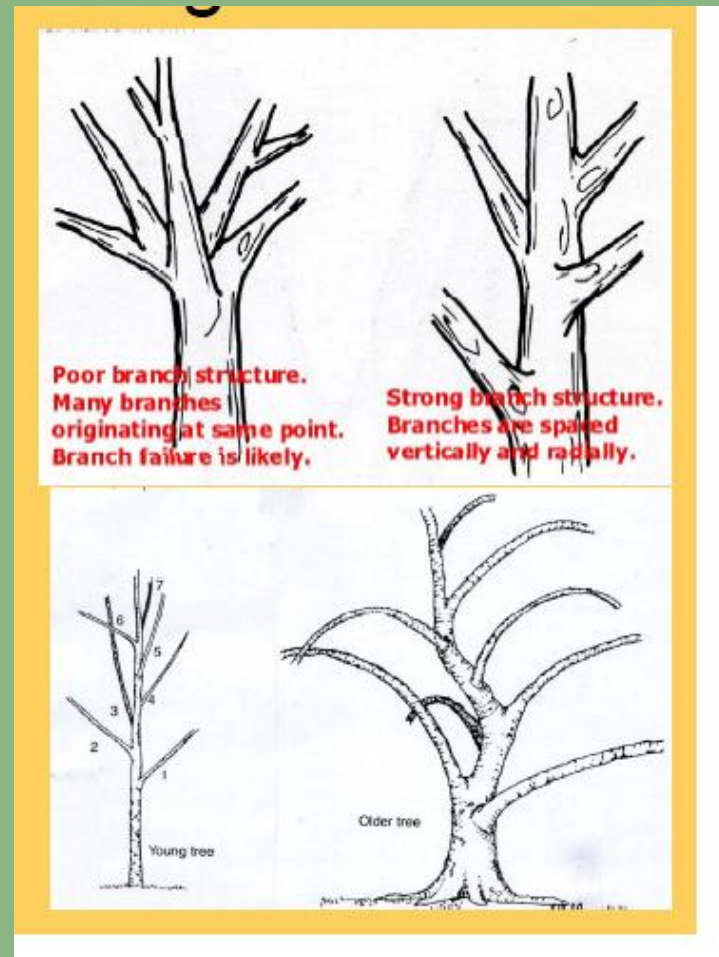
# Understanding Citrus Growth

- Citrus growth occurs in several flushes during each year depending on climate. Two to four growth flushes each year are common.
- The 1<sup>st</sup> growth occurs as straight vertical shoots. No side branches occur on these shoots during this initial growth period. The growth will eventually stop and the tree will enter a resting period.
- Side branching develops on these vertical shoots during the next growth flush. These side branches fill out to produce a rounded canopy.



# Training Young Trees

- Look to develop wide angles of limb attachment
- Select scaffolds that are both vertically and radially well spaced



# Pruning Mature Citrus Goals

- Mature citrus don't require the same intensity of pruning as other fruit trees or ornamentals



# Pruning Mature Citrus

- Prune citrus to eliminate sprouts, remove weak, crossing or dead branches, or to allow more light in the canopy.



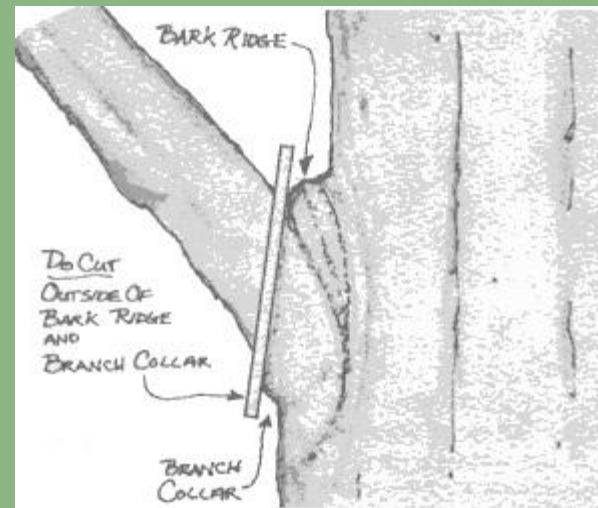
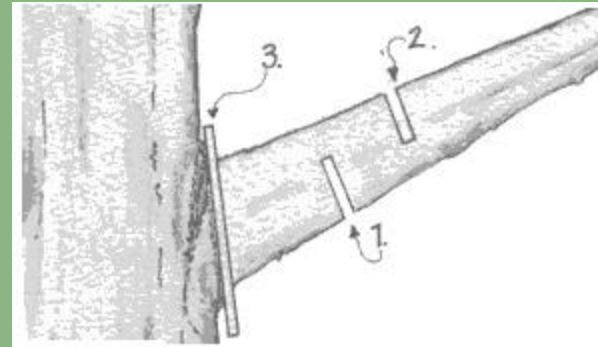
# Pruning Mature Citrus

- Remove all sprouts originating from the trunk. Most sprouts are best removed by hand when they are small.



# Pruning Mature Citrus

- Remove branches at the collar using a three-part cut.
- Do not flush cut to avoid sucker growth



# Pruning Mature Citrus

- Citrus trees need not be skirted except for aesthetical reasons.



# Pruning Mature Citrus

- Protect exposed wood from the sun using latex paint or whitewash

(photo from Villa Ugo)

(Image: Tess Wilson)



# Basic Pruning Goals-Hedging

- Citrus trees may be easily hedged.
  - Essentially select and keep sheared annually



# Tree Shapes

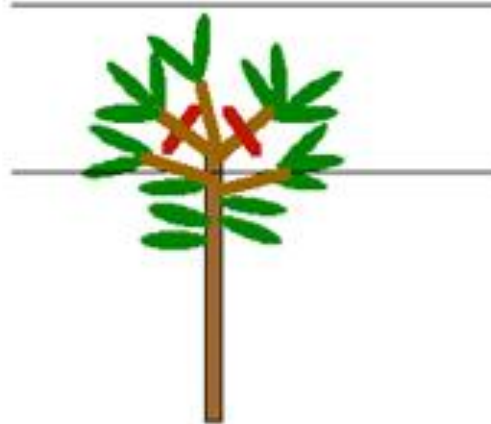
- Citrus can also be pruned or shaped into hedges or espaliers.



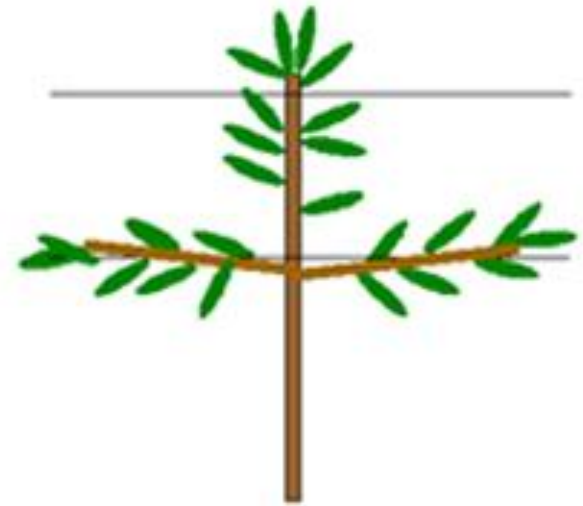
# Creating Espaliered Citrus



Cut the bare root tree to the height of the first cordon wire just above two branch buds.



Wait for new shoots then trim all but 3; train two shoots to lowest cordon and third to grow up to next cordon.



Allow center cordon to continue; prune horizontal shoots except for desired cordons.

*Homestead Revivals*

# Espalier Citrus Trees







From: Ian Barker: <http://www.landscape.net.au/iansblog/?p=737>



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**Thank YOU!**

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