

Grapefruit



Lemon



Tangerine



Citrus

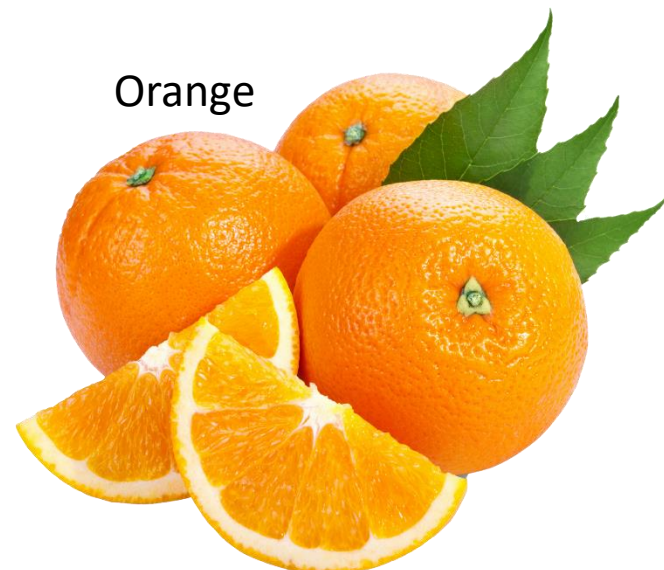
Mandarin



Lime



Orange



Citrus Overview

- Commercial production in Texas mostly limited to Lower Rio Grande Valley
- Use to be small planting all along Texas Gulf Coast, most have disappeared because of economics and recurring freezes

Citrus – Climate

- Citrus trees are subtropical to tropical in nature
- They may suffer severe damage or even death because of freezing temperatures
- Lemons are most cold sensitive of all citrus
- For optimum growth and production, plant in full sun

Citrus – Soil Requirements

- All citrus require deep soil having both good surface and internal drainage
- Most grow will in a soil pH range from 6 to 8
- Avoid soils with a high caliche content or are excessively salty

Citrus – Site Selection

- Avoid planting near septic tank lines to prevent future clogging of lines by roots
- Plant trees on the south and southeast side of the house to provide some cold protection
- Plant at least 6 to 8 feet from structures, allow 12 feet or more for grapefruit

Citrus - Varieties

- Wide selection of citrus varieties
- Seedling citrus are grown from seed rather than grafted
- Some seed come true-to-type
- Seedlings which are not true to type are usually thorny, slow to come into production, frequently produce seedy fruit

Citrus - Rootstocks

- Most types and varieties do not perform well on their own root systems
- T-budded onto a more desirable rootstock
- Sour orange – most common rootstock in Texas; recommended for lower coast and south Texas
- Trifoliolate orange – more cold-hardy and produces a smaller tree; preferred for upper Gulf Coast

Citrus – Selection and Planting

- Plant during fall to late winter as the tree can become better established before the onset of hot, dry weather of late spring and summer
- When transplanting container trees, wash off about an inch of soil all around root ball before planting to place peripheral roots in intimate contact with soil
- Dig the planting hole 1 inch less than the root ball depth

Citrus – Selection and Planting

- Cover root ball with ½ to 1 inch of soil to prevent rapid drying of root ball
- Build a water ring atop the ground around the tree, about 5 to 6 inches high and 6 to 8 inches thick, slightly wider than the planting hole



Citrus – Young Tree Care

- Newly planted trees require watering 2-3 times the first week and 1-2 times per week for the next few weeks, depending upon soil type, rainfall and time of year
- Apply water when soil begins to get dry an inch or so down – fill water ring
- Water ring should erode in 4-6 months at which time tree can be considered established

Citrus – Young Tree Care

- Do not apply fertilizer until tree begins new growth after planting
- Nitrogen usually the only fertilizer element required in most Texas soils
- Amount of nitrogen needed increases as tree gets older

Citrus – Young Tree Care

- Good weed control is essential for rapid establishment and vigorous growth of young citrus trees
- Avoid using organic mulches to control weeds because of potential for foot rot disease
- Herbicides do a good job of keeping weeds under control

Citrus – Young Tree Care

- Citrus trees are sold already properly shaped and pruned to develop naturally
- Shoots from below the scaffold limbs should be removed as soon as they are noticed

Citrus – Young Tree Care

- Can get some cold protection by banking soil as high on the tree as possible around the trunk and lower scaffold limbs
- Put up around Thanksgiving and take down first of March
- While unprotected area may freeze, tree will resprout from protected area



Citrus – Established Tree Care

- Pruning is rarely necessary
- Most soils hold 3 to 7 inches of water in the upper 3 feet of depth, with sandy soils at the low level and clay soils at the upper level
- Water more in warmer months, less in cooler months

Citrus – Established Tree Care

- Fertilize with a high nitrogen fertilizer – applied once during the year, usually February
- One pound of dry fertilizer = 2 cups
- Make sure fertilizer is watered in well once applied

Citrus – Established Tree Care

- Control weeds and grass beneath trees to reduce competition for fertilizer and water
- Weeds and grass may also harbor pests
- Organic mulches are not recommended because of foot rot disease

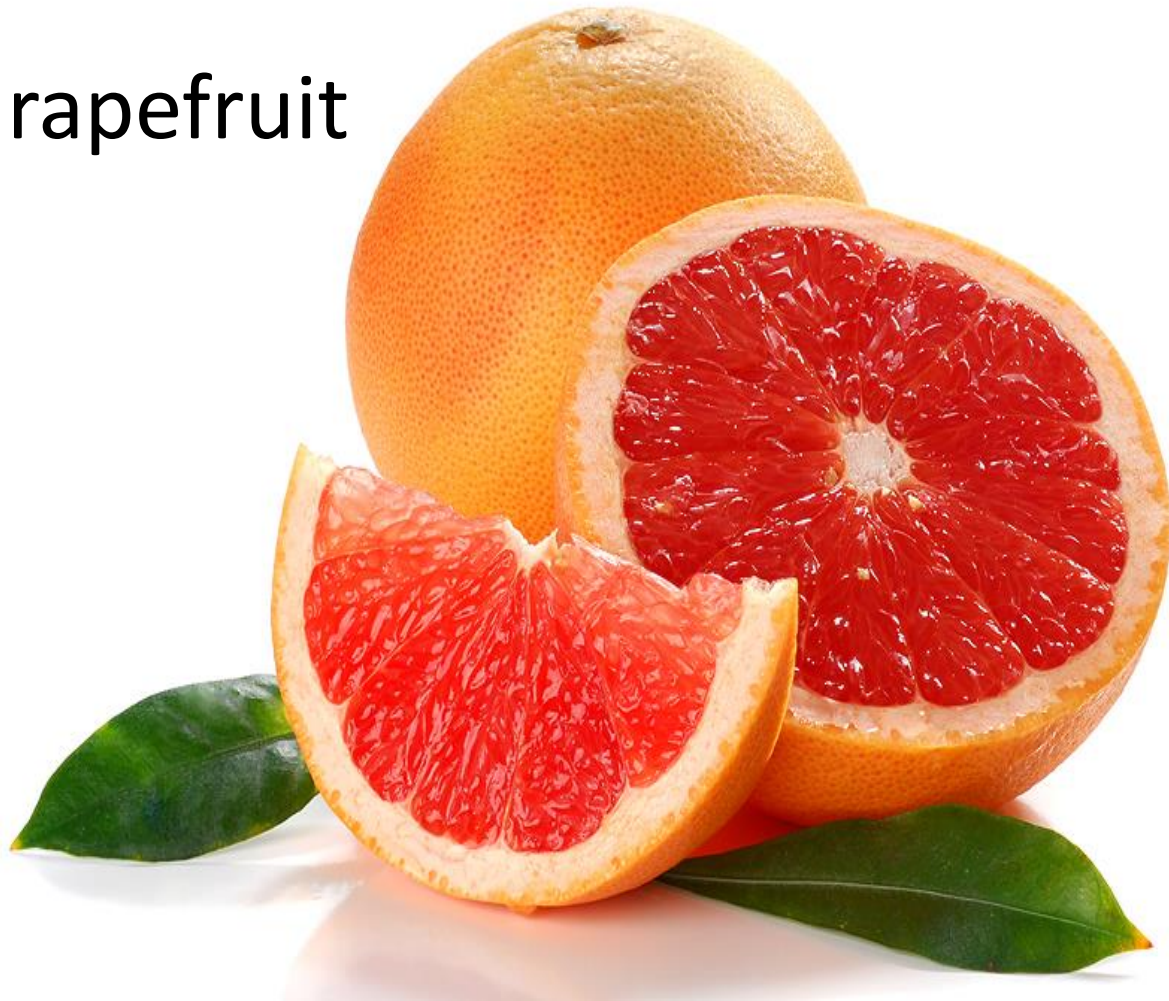
Citrus – Established Tree Care

- Citrus are pruned primarily to control tree size and to remove dead, diseased, or damaged wood
- Trees should be allowed to grow naturally without pruning

Citrus – Pest and Disease Control

- Tristeza – virus that kills quickly, especially on sour orange rootstock
- Foot rot – fungal disease, sour orange and trifoliate rootstocks have some resistance
- Aphids, mites, and whiteflies are major insect pests
- It is illegal to import citrus trees, budwood or other tree parts from other states or countries to prevent spread of disease

Grapefruit



Grapefruit

- Should bear in the third season after transplanting
- Remove fruit that sets in the first and second year
- First production could easily exceed 25 pounds per tree; should increase to over 250 pounds by tenth season

Grapefruit

- Matures in mid-to-late October (peel likely still be green)
- Natural degreening occurs over the next couple of months
- Longer the fruit stays on the tree, the larger and sweeter it becomes
- Fruit can be harvested as needed October through May

Grapefruit

- Primarily eaten fresh, although juice is also popular
- Can be frozen for later use – remove sections from cut halves, place in freezer bag and freeze

Lemon



Lemons

- All varieties can have some fruit practically anytime
- At maturity, fruit will turn yellow on the tree
- May be sufficiently juicy to use before they change color
- Use for flavoring beverages, cakes, pies, candies, marinades
- Mature fruit will store well on tree for months, juice can be frozen for later use

Lime



Limes

- Primary production is in summer months, but some fruit can be borne year round
- Mexican lime achieves maximum flavor and juiciness when rind becomes yellow
- Tahiti lime are best just before they become completely yellow
- Limes drop after rind becomes yellow
- Use similar to lemons
- Juice can be frozen for later use

Tangerine



Mandarin

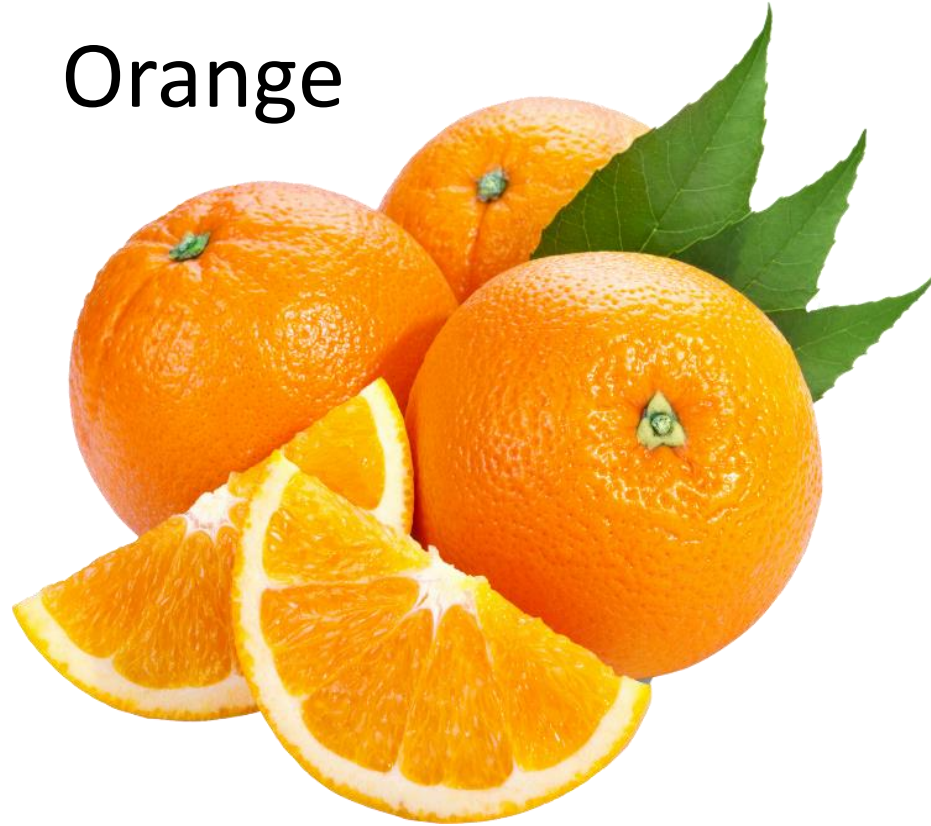
Mandarins

- All tangerines are mandarins but not all mandarins are tangerines
- Separated into 4 groups
 - Mediterranean
 - King
 - Satsuma
 - Common Tangerines
- Satsumas and Tangerines are of most interest in Texas

Mandarins

- Highly productive tree, alternate bearing
- Most fruit do not store well on-tree after reaching maturity
- Noted for bright peel color
- Maturity based on eating quality, not peel color
- Usually matures September-November
- Mainly eaten fresh, can be canned, juiced or frozen

Orange



Oranges

- Should bear in third season after transplanting
- Remove fruit that sets in the first or second year
- First production could approach 10-15 pounds in the third season; increasing to 150-250 pounds per tree by the tenth season

Oranges

- Do not “ripen”, instead they mature to good eating quality
- Peel color is no indicator of maturity
- Varieties classified by their season of maturity
 - Early
 - Midseason
 - Late

Oranges

- Do not hold well on the tree – as they become overmature, they soften and drop
- Within limits, the longer the fruit stays on the tree, the sweeter it becomes
- Eaten fresh, juiced, frozen
- Navel oranges can be juiced for immediate consumption, but juice becomes bitter after a few hours

Miscellaneous Citrus

- Pummelo
- Kumquat
- Citron
- Calamondin
- Citrangequat
- Trifoliate Orange
- Sour Orange