Indian River County
CITRUS TREE
4-H Project Manual
2024-2025

Photo: https://goodfruitguide.co.uk/product/tango-tangold/

Tango Tangerine

Index

History of Citrus

Citrus has been mentioned in history since the days of Greek Mythology. Mighty Jupiter gave an orange to his love, Juno and ever since orange blossoms have been a symbol of eternal love.

It may have even been an orange that Eve tempted Adam with, because oranges were called "golden apples" in the early days.

Oranges originated in China and spread throughout the world. Grapefruit originated in the West Indies. Lemons from the Orient and Tangerines from Tangier.

Charles the 8th of France had the first orangery - an elaborate indoor grove of citrus trees in pots and for the next 200 years orangeries were status symbols of European royalty, each trying to outdo the other.

In Queen Victoria's day oranges were a highly treasured Christmas gift in England.

Christopher Columbus brought citrus to Haiti on his second visit in 1493. The Spanish explorer Ponce De León and his men brought the first citrus to Florida during their explorations. The first citrus in Florida was planted between 1513 and 1565, when St. Augustine was founded. It seems probable that, as the Spanish explorers searched for the Fountain of Youth, they dropped seeds from fruit that had made the journey across the ocean with them - litterbugs, and very lucky for us!

In Florida, the earliest groves developed around two important seaports - St. Augustine and Tampa. At the time, central Florida was an unmapped wilderness. The orange came to Florida first, followed by the tangerine, lemon, lime and a host of other varieties as they developed. Grapefruit remains somewhat of a mystery to both historians and scientists - until modern times, as they were not well thought of as a food item.

The Indians carried the seeds across the state of Florida. Some citrus grew wild in North and Central Florida. Explorers and visitors often found trees naturalized along the St. Johns River, loaded with golden fruit. By the Revolutionary War, Florida oranges were already being shipped to Europe for sale. Formal cultivation began sometime in the early 1800s.

The Count Odette Phillip grove in the Tampa Bay area was the first grapefruit grove in Florida. It was planted in 1823.

The first navel orange groves in Florida were destroyed by soldiers during the first Seminole war because the owner, Mr. Thomas Hogg, had collaborated with the Indians. Valencias were introduced by Mr. E. H. Hart in 1870. His grove was at Federal Point, near Palatka.

Two severe freezes in 1894 and 1895 destroyed many of the original trees and since that time, a number of additional freezes have gradually pushed the citrus industry towards south Florida.

Some of the names that are still associated with Indian River Citrus are from the first groves in Indian River County in the early 1900's when Vero Beach was still part of St. Lucie County. These Indian River County Citrus pioneers included Sam Monroe, Eli Walker, O.O. Helseth, Waldo Sexton and Charles McKee.

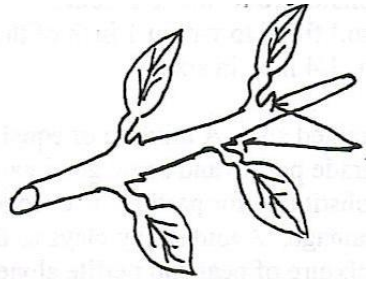
Adapted from: "History of Florida Citrus" in Florida Citrus Cookbook. and "Welcome to the Land of Citrus" from the Florida Department of Citrus and University of Florida Fruit Crops Fact Sheets.

Planting Your Citrus Tree

Stephen H. Futch
Extension Agent IV, Ph.D.
Citrus

Most varieties of citrus can be grown in containers such as pots or tubs with a fair degree of success. The amount of care which you provide your tree will affect the growth and quality of the tree.

Since the Citrus Tree project will supply you with a budded citrus tree you should be aware of a few concepts about growing a citrus tree. First of all, your tree (just like the majority of trees used in the citrus industry) is a budded tree. Even though you can grow citrus from seeds, budding works best and will produce a higher quality tree. Budding is a process where a grower has combined parts of two trees to make a single tree. These trees are better adapted to Florida conditions and more productive than growing a tree from seed. **The budded tree has two parts, the rootstock and scion.** The rootstock is the portion of the tree which is grown in the soil and is generally grown from seeds. The scion is the part of the tree which will produce the desired variety of fruit. Budding involves removing a small rectangular patch of bark which includes a bud eye from the scion plant and inserting this bud eye into the rootstock. There are many reasons for budding the tree. Budded trees will produce fruit crops earlier than trees grown from seeds. Trees grown from seeds are taller, vigorous in growth, and very thorny. Citrus rootstocks will vary in their tolerance to different soil factors, pests, disease and environmental stress thus allowing the grower to select the best rootstock for a given site. Rootstock and scion combination will affect the quality of the fruit, growth and productivity of the combination. You can usually tell where the union between the rootstock and scion is by looking at the trunk of the tree and seeing where a size difference occurs. This union is usually several inches above the soil line.



Location of bud eyes

Figure 1. Stem from a scion tree with location of bud eyes noted. Bud eyes are used in budding citrus trees.

The University of Florida's AskIFAS website, powered by EDIS, the electronic data information source, has a topic page with links for more information on citrus for both commercial and homeowner growers: https://edis.ifas.ufl.edu/entity/topic/citrus

The **scion**, which has been selected for the project this year (2024-2025), is **Tango Tangerine, *Citrus reticulata*** 'Tango' Other common names are: Tango Mandarin, Tangold

The rootstock is: US-942
Rootstock Parentage:
Sunki Mandarin (*Citrus reticulata*) and
Flying Dragon Trifoliate Orange, (*Poncirus trifoliata*)
known for HLB tolerance and minimal branching

Tango Tangerine

Description:

The Tango tangerine is a relatively new variety of medium-sized mandarin. Fruit is characterized by easily peeled thin smooth rind, seedless flesh, sweet intense flavor with good acidity balance, color and juiciness. Branches and stems are thornless, and the fruit is used for all purposes (juice, hand eating, sections, cooking). The season is Mid to Late (late winter to early summer) with peak maturity from February to March. The fruit turns bright orange as it ripens but some green on the rind may be present.

A product of selective breeding of the University of California's Riverside's Citrus Breeding Program in the early 21st century, named and registered in 2000. Released to licensed California growers in 2006 and Florida in 2009. Tango tangerine was developed from W. Murcott mandarins to create a seedless fruit with rich flavors. The self pollinating tree has a large dense crown, with height between 8 to 12 feet, fragrant blossoms, is considered fairly tolerant to HLB (compared to grapefruit and sweet oranges) and is cold tolerant to 32°.

Tangerines do not ripen once picked so should be harvested when fully mature and Tango tangerines are generally less inclined to alternate years of heavy/light fruit bearing especially if harvest is prior to full flowering period (best in mid-late March). Mature fruit holds well to the tree for 3 to 4 months and up to 2 weeks in the refrigerator.

For more information on citrus types, care and management see publication #HS-867
Citrus Culture in the Home Landscape: https://edis.ifas.ufl.edu/publication/HS132

Planting Your Tree in Your Pot:

You will want to be very careful to be sure that you are planting the tree properly to maximize the potential tree growth. The pot usually used is a 7 gallon plastic pot with holes in the bottom or the side of the container to provide ample water drainage. Clay pots are less satisfactory because the soil in them dries very rapidly and watering problems are greatly increased.

Repotted Citrus tree

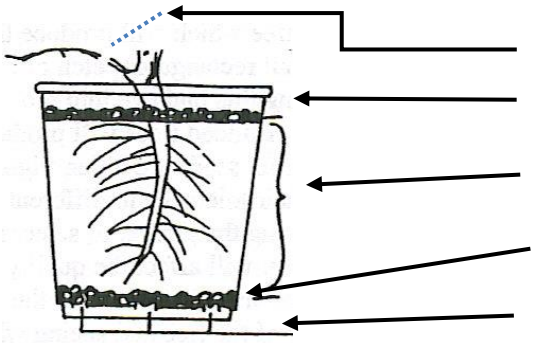


Fig. 2. A typical soil arrangement when plants are repotted includes 1 inch of gravel in the bottom of the container, then potting soil filled to within 1 inch of the top of the container. Drainage holes should be 1/8 to 1/4 inch in size.

Citrus can be grown in almost any well-drained soil. A mixture of equal parts (by volume) of Canadian peat, horticultural grade perlite and some good garden loam makes a superior medium. Wood chips can be substituted for perlite. The wood chips or perlite will assist with providing adequate soil drainage. Avoid sticky clays as they tend to hold too much water and reduce drainage. A mixture of peat and perlite alone is unsatisfactory. This mixture is so light the plants tend to blow over. Also, nutritional problems often develop in this mixture.

IF YOU ARE SHOWING YOUR TREE AT THE FAIR
DO *NOT* REMOVE THE VARIETY ID TAGS!

If you are recycling a used plastic pot:

- Scrape off old dirt, any accumulated salts and minerals
- Using a scouring pad, wash with hot soapy water and rinse
- Soak in 1 part chlorine bleach to 9 parts water for at least 10 minutes to one hour
- Let completely air dry preferably in sunlight

When transplanting, you will need to break up the root mass prior to repotting. This is especially important if the seedling is pot bound. The reason for breaking up the root mass and then spreading the roots out is to allow for better root development and contact with the soil. Breaking up the rooting mass will help mix existing soil on the plant roots with the new soil and improve water distribution between the soils.

Place the plant into the new pot or container that has been partially filled with soil or a rooting medium such as described above. Spread the roots out and add soil. Be sure to pack the soil around the roots to remove any air pockets.

After filling the pot to within 1 inch of the top of the container, add water to thoroughly saturate the soil and to improve the compaction of the soil. You may need to add an additional amount of soil to bring the top of the soil to within 1 inch of the top of the container. Do not add more than one inch as this may rot the trunk of your tree, if more is needed, you have planted it too deep. Do not fill the container to the top of the pot with soil as this makes it very difficult to provide adequate space to hold water.

Growing:

Citrus thrives best out of doors in direct sunlight or no more than half shade for maximum tree growth. Trees grown in shade will not develop as well and will generally produce uneven growth. **Never move a plant that has been kept in little or no sun into direct sun for more than 15 minutes. Start in outdoor shade, gradually increase periods of full sun over one to two weeks until a full day of sun can be tolerated.**

A temperature range of 70^{o} to 95^{o} F is desirable. Citrus does not grow at temperatures below 55 degrees. Temperature below 32 degrees F. can damage the mature foliage. In some cases frost can occur at air temperatures above 32 degrees but when the temperature of the plant tissue drops below 32 degrees it will result in frost forming on the foliage and damage may result, especially if new tender growth is present. You may want to move your tree indoors or cover it in the event of severe cold.

You will need to water the plant as needed, thoroughly wetting the soil and allowing any excess water to freely drain out of the container. As the seasons change from warmer to cooler temperatures the need for water will be reduced. Excess water will damage or kill the plant as quickly as too little water. When the soil feels damp, you do not need to add additional water.

It is a good idea to occasionally wash off the leaves with a water spray or damp cloth. Dusty leaves usually result in mite and scale infestations.

Potted citrus as well as all citrus will require fertilization. This is more often overdone than underdone. A good rule of thumb is to **fertilize sparingly and frequently**. A small amount of water-soluble fertilizer could be applied every few weeks according to label directions. If you choose to use a dry granular fertilizer, evenly apply the fertilizer to the soil surface and then work the fertilizer into the soil. If manure is used as fertilizer, care must be taken that it is *thoroughly* composted before adding to soil mix or as top dressing to avoid damage.

The first application of dry granular fertilizer should be applied about two weeks after planting and repeated at approximately every six to eight weeks. If the mature foliage is deep green, the tree is receiving ample fertilizer. Excess fertilizer may result in high salt concentration in the soil and death of the plant. Even light over fertilization results in excessive vigor and less flowering. Do not use a formula higher than 8-8-8 for young trees.

Suggested fertilization rates for young potted citrus trees from 1 to 2 years old

For First Year:

Applications per year	Pounds of Fertilizer per application*	Pounds of Nitrogen per application
6 – 8	0.3 (approx. 5 tablespoons)	0.08

*Use 8-8-8 (8 percent nutrient per pound of material)
Mature fruit bearing trees over 3 years old will use 12-0-12 or 15-0-14

Understanding the fertilizer label:

All fertilizer sold in the State of Florida will have important information as to the analysis or the amount of plant materials which is available from each pound of fertilizer. The analysis is generally stated in percent. By law the first three numbers on the label will always be in the order of nitrogen, phosphorus and potash. The order of additional numbers are not in any specific order but will be clearly identified on the label. Thus, from the example above - a material which contained an eight percent analysis would contain 0.08 pounds of that mineral. From the above example each pound of fertilizer would contain the following nutrients: 0.08 pound of nitrogen, 0.08 pound of phosphorus and 0.08 pound of potash. For more specific information please see the publication SL 3, ***The Florida Fertilizer Label*:** https://edis.ifas.ufl.edu/publication/ss170 by Dr. J.B. Sartain & W.R. Cox with the University of Florida.

Pests:

Florida's climate is conducive to many different insects, diseases and other disorders which may be found on the fruit, leaves, stems or roots. The proper identification of the problem is important in determining the proper course of action which must be taken to minimize the pest damage to the tree. Some of the problems may be solved by washing the leaves with water spray, a mixture of water and non-detergent soap, or a mixture which may contain general use insecticide. These insecticides are generally available from a local lawn and garden center. One of the most common pests, the Leafminer, is the tiny larva of a small moth and does little actual damage to the tree but can be unsightly, especially on young trees. Control by spraying a light horticultural oil mixture on new leaf growth (flushes) every 2 weeks. University of Florida/IFAS publication EENY038, ***Citrus Leafminer:*** https://edis.ifas.ufl.edu/publication/IN165 has more information.

If insecticides are to be used read the directions and follow the directions very carefully. Parental supervision and assistance are very important as injury to the tree or even death could occur if the spray is improperly applied or mixed. To aid you with identification of possible problems please see the publication HS876, ***Citrus Problems in the Home Landscape*:** https://edis.ifas.ufl.edu/publication/hs141

Insect damage can be seen as spots, holes or chewed leaf edges (don't forget to look underneath leaves too!). For more information on diseases, insect problems and their control on citrus you can print fact sheets with color pictures from the AskIFAS topic page **Citrus Pest Management**: https://edis.ifas.ufl.edu/topics/citrus_pest_management

There are many other publications concerning citrus available using AskIFAS but keep in mind that may be written for controlling pests in the groves - not for one tree - so the pesticide recommendations are per acre. Make note of those publications listed for use by homeowners and growing citrus as a "dooryard fruit" on a small scale. These will be the most helpful for your citrus project.

Citrus Canker and Citrus Greening Disease:

Up until the spring of 2006, Florida's Department of Agriculture program against the disease of citrus canker had been a combination of eradication (tree removal) and quarantine. The USDA withdrew eradication program funding due to the impacts of legal constraints and the 2004/2005 hurricanes that caused canker to spread so far that eradication was no longer possible. Also, Citrus Greening disease has been spreading from the initial site in Miami-Dade to become another threat.

There are preventative measures to lessen chances of infestation of healthy trees. Both diseases have an insect associated with its spread: The Asian Citrus leafminer in canker, and the Asian Citrus Psyllid in Greening. More information on Citrus Canker and Greening is available at these websites:

- https://edis.ifas.ufl.edu/publication/CG040 ***FL Citrus Production Guide: Citrus Canker***
- https://edis.ifas.ufl.edu/publication/CG086 ***FL Citrus Production Guide: Citrus Greening***
- https://crec.ifas.ufl.edu/ **Citrus Research and Education Center** website
- https://edis.ifas.ufl.edu/entity/topic/asian_citrus_psyllid Ask IFAS **Asian citrus psyllid** topic page

Pruning:

Occasionally you may need to prune your tree. Some reasons may be to remove crossed branches that are rubbing against one another, or to encourage the tree to grow taller or bushier. A good reference for pruning is the publication HS1372, ***Hand Pruning & Training of Tropical & Subtropical Fruit Trees:***
https://edis.ifas.ufl.edu/publication/hs1372

If you are showing your tree at the Fair, check with your club leader if any specifications apply to pruning before making any trims or cuts!

Providing Your Plant's Basic Needs:

All living things have basic needs and plants are no different. To thrive and grow, plants need:

- light

- water
- mineral nutrients
- air (carbon dioxide and oxygen), and
- adequate temperature range

Mineral nutrients come from rocks and other material in the earth breaking down. Plants take these minerals from the soil (dissolved in water) or through fertilizers applied by humans.

Basic need	Purpose
Light	Required for photosynthesis so plants can make sugar (food), and to trigger certain changes, such as flowering in certain plants
Water	To carry dissolved nutrients into the plant through the roots Required in photosynthesis Helps plant release energy from stored food when needed (in respiration)
Mineral Nutrients	Used for growth, repair, and proper functioning
Air	Required in photosynthesis (carbon dioxide is necessary to make food) Required in respiration (oxygen is necessary to release energy from food)

Too much of a good thing can be as harmful as too little:

Too much water can prevent necessary oxygen from reaching roots. Too much fertilizer can "burn" plants (either by using too much in quantity or by using too high a rate), or cause plant cells to grow too quickly, resulting in weak, spindly plants or dead leaves.

Water

Most container-grown plants that do not thrive are usually in poor condition due to faulty watering practices, usually **too much** water. Water is the main component of plant cells, it keeps the plant turgid (stiff), it's used in photosynthesis and it transports nutrients throughout the plant.

Plants growing in containers should be watered only as needed. The frequency of watering depends upon such variables as type and size of plant, type and size of container, temperature, humidity, potting medium and others. For most plants, the upper surface of the soil should be

allowed to become dry to the touch before watering. Then water thoroughly by slowly filling the container. Good drainage of excess water from the container is essential.

The soil in plastic pots generally stays wet longer than it would in a wood or clay pot. Cool weather generally slows plant growth and thus reduces the plant's need for moisture, so watering should be less frequent during cool weather.

Soil

Soil is composed of living and non-living materials. Soil provides plants with:

- Support
- Nutrients
- Water
- Air

Soil is made up of rocks that have broken down into tiny particles over thousands of years. Here on the east coast of Florida our natural soil is made up mainly of sand. Nutrients wash away with water quickly in sand. Using potting soil provides some food from organic matter and allows the soil to hold the water longer so the plant doesn't dry out so fast.

What is organic matter? Organic matter includes the remains and waste products of living things. Plants and animals are being continuously decomposed by bacteria, fungi, and other decomposers in the soil.

The once-living remains of plants and animals must be returned to the Earth to provide nutrients for new life. When completely decomposed, these materials form humus. Humus is dark, crumbly, and spongy-textured. Its functions are:

- Loose, crumbly structure for plant roots to grow and thrive in
- Provide the majority of the nutrients used by plants
- Help retain soil moisture
- Provide good aeration
- Drainage

Fertilizer

Plants need minerals to grow. Although potting soil has some organic matter in it that helps provide food for your tree, some of it is washed away by watering. To provide the food the plant needs we add fertilizer. The plant needs them dissolved by water in order to use them.

Do not fertilize your tree when you plant it. It will use the food in the potting soil at first. There should be new growth evident before it is fertilized. After new growth is visible, then feed your plant.

Plants get Carbon (C), Hydrogen (H) and Oxygen (O) from water and air. The other nutrients it

needs must come from the soil or from fertilizer.

On the fertilizer label it will have three numbers with dashes between them. These stand for the percent of the three primary nutrients in fertilizers: N-P-K.

- The first number tells the percent of Nitrogen (N) - Nitrogen is needed for healthy foliage.
- The second number tells the percent of Phosphorus (P) - Phosphorus is needed for flower development.
- The third number tells the percent of Potassium (K) - Potassium it is needed for root growth.

Secondary elements in fertilizers in smaller amounts that plants need include Magnesium (Mg), Sulfur (S) and Calcium (Ca).

Fertilizers can have other nutrients that plants need in even smaller amounts. These are called the Micro-nutrients. They include Iron (Fe), Manganese (Mn), Boron (B), Chlorine (Cl), Zinc (Zn), Copper (Cu), Molybdenum (Mo), and Nickel (Ni).

The rest of the fertilizer is made up of fillers so the plant won't get burned with too much of the Nitrogen, Phosphorus and Potassium.

Young Citrus trees like balanced fertilizers - all three numbers are the same. 6-6-6 fertilizer is a basic fertilizer and is fine for Citrus. Do not go any higher than 8-8-8 for trees 1-3 years old.

Citrus trees also need smaller amounts of other minerals such as Magnesium, Iron, Manganese, Zinc and Copper. The label would say the fertilizer has "Minor Elements"

A fertilizer with the following proportions of minor elements is good for potted citrus:

4% Magnesium
.75% Manganese
.25% Copper

For citrus trees planted in the ground, a higher rate of Magnesium (5-6%) is used to compensate for the Florida soils which are usually poor in nutrients.

What is Soil pH?

Citrus trees (and many other plants) grow best in soil that is slightly acid. What does this mean? Just like our foods, soil can be acid (sour), or neutral or anywhere in between.

What is pH? The term pH stands for *potential hydrogen.* Soil pH tells how much hydrogen is in the soil. It indicates whether the soil is too:

Acidic
Alkaline (or basic)
Neither acidic or basic

Look at this illustration for the pH values of common foods.:

pH Scale:

1	7	14
ACIDIC	**NEUTRAL**	**ALKALINE**
lemon juice	eggs, milk, fish, meat	cocoa
other citrus	chicken, melons	rice
pickled foods		ammonia
vinegar		

The words *acid* and *base* and *neutral* describe chemical characteristics of nearly all substances in our environment. Acidity can be measured by the pH scale which runs from 0 (mostly acidic) to 14 (mostly basic or alkaline); 7 is considered neutral.

The lower the number, the stronger the acid. Think of the pH scale as a measure of acidity. Anything with a pH higher than 7 is considered base.

Citrus and many other plants like to grow in soil that is slightly acidic to neutral – 6.0 to 7.0 pH. Soil pH can be tested for free at the County Extension Office and at other laboratories to determine its pH.

Why is soil pH important to plants? Plant roots absorb nutrients such as nitrogen and iron when they are dissolved in water. If the soil is too acidic or basic, some nutrients won't dissolve easily; the nutrients become unavailable to plant roots as if they were "locked" into the soil. Nutrient deficiencies may result.

For example, when soil has a:
* pH below 6.0, nutrients like nitrogen and phosphorus, and potassium as less available; or
* pH greater than 7.5, nutrients like iron, manganese, and phosphorus are less available.

If a soil is too basic (pH is too high) adding organic matter such as compost, "cured" manure or humus will bring the pH of soil closer to neutral which creates better nutrient holding capacity.

An application of limestone or dolomite can be used to bring up the pH if it is too low (acid).
Source: *Take Your Pick* 4-H827 Level 4-H Gardening Project - Purdue University

Getting to know the Citrus Fruit

Citrus fruit are covered with a rind to protect the pulp or edible portion of the fruit. The **flavedo** or thin outer peel contains numerous oil sacs or glands filled with an aromatic essential oil. It is used for flavoring.

A white spongy portion, known as the **albedo**, lies under the flavedo and contains substances that can be recovered in the form of citrus pectin. The membrane that covers each section is also rich in pectin. Pectin has a water-binding property that retains the moisture content in food, thus being good for the digestion. It is used commercially to make a jelly. When pectin is mixed with the proper proportion of acid and sugar a jell is formed. All fruit do not have enough pectin to form jells so it is added to other fruit juices in the jelly and jam making process.

Each segment of the citrus fruit contains juice and juice sacs.

About 45 percent of the fruit is juice, 22 percent flavedo and albedo, and 33 percent pressing residue.

Source: UFL, *Enjoying Florida Oranges*

Citrus By-Products

Besides the pulp and juice from citrus that we eat and drink, the citrus fruit provides a wide variety of other products.

The colored part of the citrus skin (the flavedo) contains aromatic oils. These are used to make the following:

Perfumes	Soaps	Lotions	Medicines
Cleaning products	Insecticides	Paints	Rubber

The white spongy part of the skin contains pectin. Not all fruits contain pectin. When pectin is cooked with acid and sugar in the right proportions it forms a jell. The pectin in citrus is removed and used to make a wide variety of fruit, vegetable and meat jellies, as well as jams and jelly candy.

The pulp left over from squeezing the juice from the fruit is dried and used for cattle food.

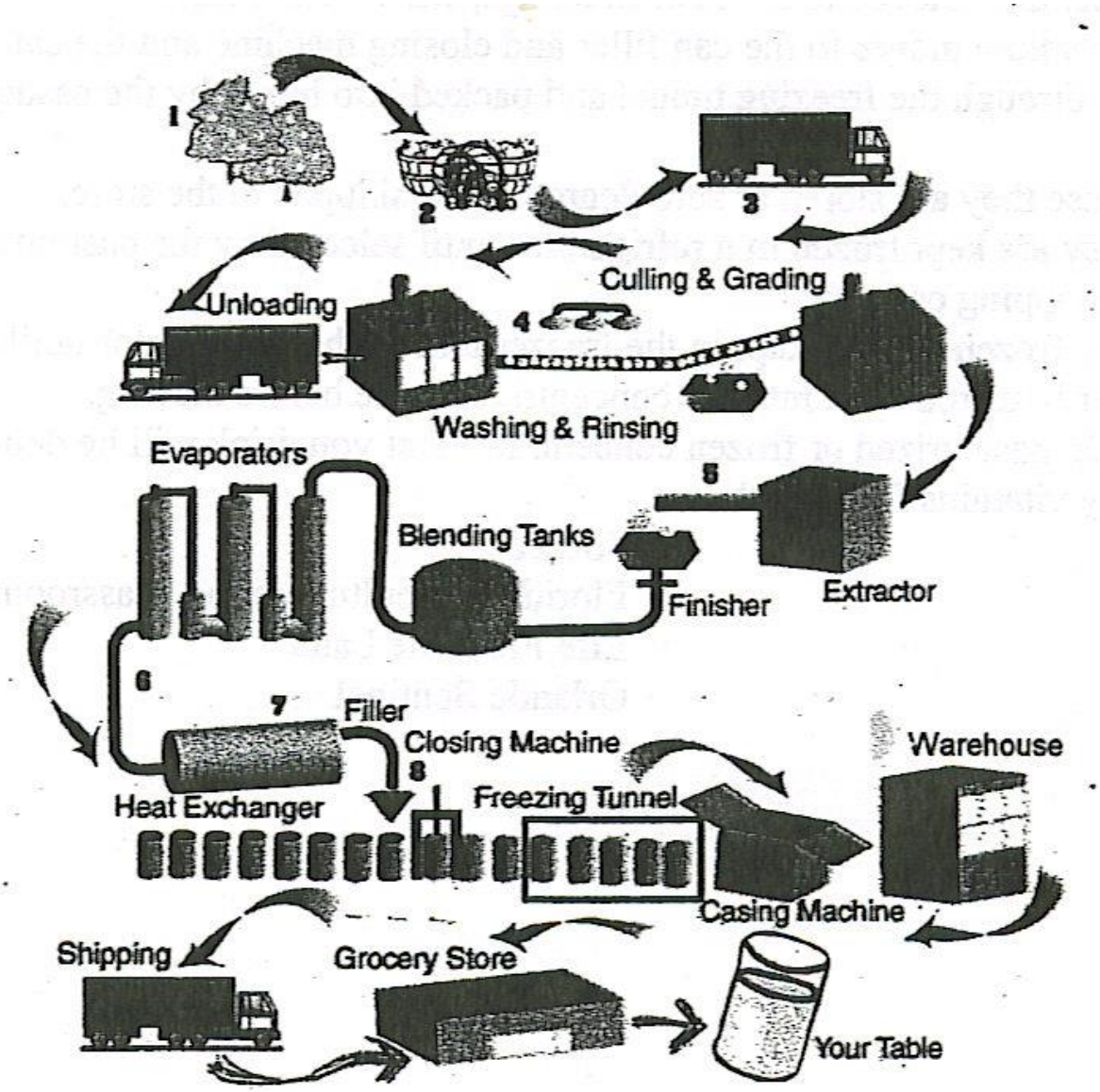
Other by-products of citrus pulp include citrus molasses which is used to make alcohol and D - Limonene, a clear oil used in adhesives, paint, varnish and medicines.

Oil from citrus seeds is used in some cooking and salad oils.

From Grove to You

Florida has the ideal climate for growing citrus - warm, sunny days, enough rain, and sandy soil which drains well. The warm humidity of our air makes for a juicy, thin peeled orange, and about the time the fruit is ready for picking Florida nights turn cooler which brings out the orange color.

The next page explains this process in numerical order from start to finish



From Grove to You Process

1. Since citrus does not ripen off the tree, the Brix measurement test for sugar content is done prior to picking the crop to make sure the juice is sweet enough.
2. Picking crews move into the groves. An experienced person can pick 7,000 fruit in a day. **Once fruit is picked it will no longer ripen.**
3. The fruit is carried by truck to the packinghouse where they are washed, cleaned and checked for quality. Five percent of the crop will be boxed and sold for fresh fruit. The rest will be squeezed into orange juice. Fresh juice has a short shelf life of 2-3 days, so

some of juice will be bottled or canned, but most will be concentrated (some of the liquid is removed) into a thick juice, then frozen. It was three Florida scientists who invented the way to concentrate and freeze orange juice in 1945.

4. After the fruit is cleaned, conveyer belts carry the fruit to where hundreds of oranges are squeezed every second.
5. Pipes carry the juice to the finisher where a screen removes any seeds or extra pulp (the soft, juicy part of the fruit). It is at this point that some juice is bottled for fresh juice. The rest of the juice continues through other processes.
6. Pasteurized (heated to destroy bacteria) and concentrate juice continue to the blending tanks where the Brix measurement is taken to guarantee a set level of sweetness.
7. Frozen juice concentrate will leave the blending tanks to be heated quickly and concentrated in the tall evaporators.
8. The thick concentrate moves to the heat exchange, where it is cooled.
9. The thick concentrate moves to the can filler and closing machine and the can is sealed before moving through the freezing tunnel and packed into boxes by the casing machine.
10. At the warehouse they are stored at zero degrees until shipped to the store.
11. At the store they are kept frozen in a refrigerator until selected by the customer and placed in the shopping cart.
12. Once home, the frozen juice is kept in the freezer unit of the refrigerator until needed. Water is stirred back into the concentrated juice before serving.
13. The juice (fresh, pasteurized or frozen concentrate) that you drink will be delicious and provide healthy vitamins for growth.

Source: Florida Agriculture in the Classroom, *Life From the Land*, Orlando Sentinel