

~~\$12.95~~

YOUR COMPLETE Citrus Guide



FUN FACT - Florida oranges are greener than California oranges. The warm evening climate in Florida causes the chlorophyll pigments to migrate into the orange peel making it more greener.

Profit while promoting good health.

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Citrus

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CITRUS JUICER TYPES

There are
now over
600 varieties
of oranges
worldwide!



Citrus

Origin

ORANGES

It is believed that oranges originated from Southeast Asia and were first cultivated in China around 2500 BC. The sweet orange didn't spread to Europe until the 1400's and it wasn't long before it was one of the most popular fruits. From here it quickly spread to the rest of the world.

This fruit is grown in many subtropical and tropical regions of the world. The largest producer of oranges is Brazil. Other large producers of oranges includes the United States, India, Mexico, China and Spain.

Oranges are the most widely grown fruit trees!

LEMONS

Unlike many other fruits, scientists are unsure about the exact origins of the lemon. The most widely accepted theories are that the lemon was first grown in India, Burma or China. As of 2015, the countries with the highest levels of lemon production were India, Mexico and China.

LIMES

Wild limes probably originated in the Indonesian archipelago or the nearby mainland of Asia. Limes are highly sensitive to cold weather and are grown exclusively in tropical climates. As of 2015, the countries with the highest levels of lime production were India, Mexico and China.

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FUN FACT - Other less popular oranges for juicing are the Chinese Navel, Seville and Blood oranges.

Orange Types

VALENCIA



Photo source: www.unsplash.com

Don't confuse the Valencia orange with the Navel orange which looks almost identical from the outside. The characteristic that can help you tell them apart most easily is the feature that gives navel oranges their name: the navel! Valencias don't have one. Unlike Valencias, Navels produce less juice, have a shorter shelf-life and are better eaten fresh rather than juiced because the juice can turn bitter within 30 minutes.

Valencia's are the best for juicing!

Valued for their high juice content and availability outside of the typical citrus season, Valencia oranges are usually thin-skinned and have very few seeds. **They are best known as the "orange juice orange."** They are considered one of the best oranges for juicing yielding juice deep orange in color and is often sweet and delicious. Worldwide, Valencia oranges are prized as the only variety of orange in season during summer.

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Orange Types

HAMLIN



Photo source: www.briteleaf.com

Hamlin oranges are a sweet, cold tolerant orange variety that is mainly grown in Florida. Hamlin oranges are seedless and very juicy, making them a good juicing orange.

Hamlin is the most cold-tolerant!

Hamlin oranges are round and smooth-skinned with a dark yellow to dull orange color and thin peel. Its thin skin makes this orange difficult to peel by hand.

Its juice color score is also low, so the juice is blended with that of other varieties to meet color standards. You will find the most juice in mid-size fruit -- about 2 1/2 inches in diameter. Smaller and larger fruits yield a higher ratio of peel to flesh. The best Hamlin should feel heavy for its size. It's common, late in the season, for it to be a bit soft. This is fine as long as the skin retains elasticity and the fruit maintains a weighty feel.

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Orange Types

PINEAPPLE



Photo source: www.growcitrus.com

This orange variety was first propagated about 1873 under the name of Hickory and about ten years later was renamed Pineapple because of its delicate fragrance and its characteristic rind color of a pineapple.

The fruit flesh is light orange, tender, sweet and juicy, with mid-season maturity in November to early January. The texture and the sweet and spicy

flavor of this variety make it attractive for juice production. The pineapple orange tree is less frost tolerant compared to other orange varieties. The flesh is quite seedy.

**Pineapple
has 15-25
seeds per
fruit!**

Citrus

Nutrition Facts

Oranges

SERVING SIZE: 1 CUP OF JUICE

Amount Per Serving	
Calories 112	
	% Daily Value*
Cholesterol 0mg	0%
Sodium 2.5mg	0%
Carbohydrates 26g	9%
Dietary Fiber 0.5g	2%
Sugars 21g	
Protein 2g	
Vitamin A 10% • Vitamin C 207%	
Calcium 3% • Iron 3%	

*Based on a 2,000 calorie diet.

Lemons

SERVING SIZE: 1 CUP OF JUICE

Amount Per Serving	
Calories 54	
	% Daily Value*
Cholesterol 0mg	0%
Sodium 2.5mg	0%
Carbohydrates 17g	6%
Dietary Fiber 0.7g	3%
Sugars 6g	
Protein 1g	
Vitamin A 0% • Vitamin C 157%	
Calcium 1% • Iron 1%	

*Based on a 2,000 calorie diet.

Limes

SERVING SIZE: 1 CUP OF JUICE

Amount Per Serving	
Calories 61	
	% Daily Value*
Cholesterol 0mg	0%
Sodium 5mg	0%
Carbohydrates 20g	7%
Dietary Fiber 1g	4%
Sugars 4g	
Protein 01g	
Vitamin A 2% • Vitamin C 121%	
Calcium 3% • Iron 1%	

*Based on a 2,000 calorie diet.

Pink Grapefruit

SERVING SIZE: 1 CUP OF JUICE

Amount Per Serving	
Calories 96	
	% Daily Value*
Cholesterol 0mg	0%
Sodium 2.5mg	0%
Carbohydrates 23g	8%
Dietary Fiber 0.7g	3%
Sugars 6g	
Protein 1g	
Vitamin A 22% • Vitamin C 156%	
Calcium 2% • Iron 3%	

*Based on a 2,000 calorie diet.

TIP - In addition to providing grams and daily values, nutrient content descriptors can inform consumers if a nutrient level is considered high or low. When using a nutrient content descriptor, FDA labeling laws state that the descriptor should be used, as in this example: Broccoli- a low-sodium food. Or Broccoli- low in sodium. The statement low-sodium broccoli implies that the broccoli is different or specially prepared. Do not use that type of misleading statement. Nutrient content descriptors allow for oranges to include: fat-free, saturated fat-free, sodium free, cholesterol-free, high in fiber, and high in vitamin C.



Citrus

Health Benefits

- As most people do not eat enough fresh fruit and vegetables daily, freshly squeezed juices are a quick and enjoyable way of getting missed vitamins and minerals necessary to maintain health and wellness.
- The vitamins and minerals from freshly-squeezed juices are absorbed as quickly as 15 minutes within the body, but whole fruits can take up to 6 hours in which time a considerable amount is by-passed as waste.
- Pasteurized juice is essentially cooked which severely reduces nutritional value by killing enzymes and “washing away” vitamins and minerals. Fresh juice is “raw” and high in nutritional value.
- Freshly squeezed juices have enzymes which aid digestion. Enzymes are not present in “pure” juices as they are pasteurized.
- Raw juices are better for you than soft drinks, tea, and coffee.
- Pure orange juice from concentrate can be 6 months to 12 months old. Typically concentrates are reconstituted by using ordinary tap water.
- Vitamin C is necessary for healing the body from ordinary cuts to infections such as the common cold.
- Most people know that Vitamin C is present in citrus fruit. What they don't normally know is that citrus also has pectins which can reduce the risk of heart disease, and flavonoids which are thought to reduce the risk of cancer.
- The body cannot store Vitamin C or B-Complex, yet the body requires a minimum amount every day.

Boost
your
immune
system!

Citrus

Selecting Citrus

1. LOOK 2. TOUCH 3. SMELL

ORANGES

Oranges are classified into two general categories: sweet and bitter. Bitter oranges (*Citrus aurantium*) are often used to make jam or marmalade. Commercial oranges are often bright orange because an artificial dye, Citrus Red Number 2, is injected into their skins at a concentration of 2 parts per million. Don't be deterred if you see a tinge of green on Valencia oranges—it doesn't mean that the fruit is unripe. Because Valencia oranges grow in the warmer seasons, they're exposed to more sunlight, which can trigger the production of chlorophyll in the peel to help protect the fruit from sunburn. The process is called "re-greening." Use point-of-purchase materials to explain that to shoppers. Cut a "re-greened" Valencia in half to show consumers the nice orange interior.

85% of all oranges are used for juice!

LEMONS

Choose a lemon that's heavy for its size and has a pleasant scent. As long as it isn't rock hard, it should be ripe. The skin should be bright yellow with no wrinkling. Any greening indicates an immature fruit, that will never develop to its full potential had it not been picked and left on the tree to ripen. A thinner-skinned lemon will yield more juice. Be sure to check that the lemon is not too soft and has no signs of white or green mold. Small blemishes and spots won't affect the juice. To increase the amount of juice you can squeeze, the lemon should be room temperature or warmer. If need be, place in hot water for a few minutes. Then roll the lemon firmly on the counter-top with the pressure of your palm until it feels softened. Lemons will become juicier with this method as the membranes inside start to break down, releasing the juice more easily.

Citrus

Selecting Citrus

1. LOOK 2. TOUCH 3. SMELL

LIMES

Select limes that are heavy for their size and have a pleasant scent. As long as it isn't rock hard, it should be ripe. With limes, avoid the brown spotty ones. They're old and will produce a bitter juice. Limes are extremely sour until they are mature, so it is important to understand when a lime is ready to be juiced. First, look for a nice light green color. Limes turn yellow once they spoil, and the juice becomes bitter and undesirable. Check the skin of the lime. You want limes with a smooth, unwrinkled skin. Limes that have wrinkled have already begun drying out and will not produce a sufficient amount of juice. Surface blemishes on the skin are no problem, as you will not be using the skin.

Heavier
citrus
is often
juicier!

GRAPEFRUITS

A ripe grapefruit will be slightly reddish in color. The deeper the color, the more intense the flavor will be. Gently push in at the ends, if it gives slightly, it's juicy and delicious. If the fruit is dented heavily, it's been sitting in a box squished for some time. At room temperature, you may be able to detect a mildly sweet fragrance, but it won't be apparent if the fruit is chilled. If you can, avoid grapefruit that are yellow as this is a tipoff that they have been exposed to gas, a favorite practice of some large commercial growers.

Citrus

TIP - Food Service Packs: Oranges count high among fruits most used by food service. Operators can order California citrus in sizes 48-163, or 64-125 for Florida citrus.

Selecting Oranges

Oranges can be likened to wine grapes in the way they vary; dramatic differences can be found in sugar content, juice content, color, flavor, number of seeds, fiber or pulp content, etc. Oranges picked at a particular time from one growing region may vary considerably from another region or a different period in the growing season. Avoid navel oranges because of poor juice yield and short juice shelf life.

Orange
Suppliers
Peak
Dec-May

Florida Standards:		California, Texas & Arizona Standards:	
Count	Diameter	Count	Diameter
#163	2-8/16	#163	2-1/4
#125	2-11/16	#138	2-7/16
#100	2-15/16	#113	2-5/8
#80	2-15/16	#88	2-3/4

Juice Variety Oranges (Normal Shipping Seasons)													
Origin/Variety	Jan	Feb	Mar	Apr	May	June	July	July	Aug	Sept	Oct	Nov	Dec
CALIFORNIA													
Valencia													
FLORIDA													
Hamlin													
Pineapple													
Valencia													
TEXAS													
Hamlin													
Pineapple													
Valencia													
MEXICO													
Pineapple													
Valencia													

Questionable Sweetness Levels
 Acceptable Sweetness Levels

Citrus

Storing

Cold oranges yield cool juice. Both the Florida Department of Citrus and Sunkist Growers recommend that oranges be stored in a cool, well-ventilated area, at a temperature of between 45 and 48 degrees. Ideally, store them in the cooler, refrigerator crisper or in a cool, dark place such a basement where they will keep up to two months.

*Susceptible
to chilling
injury.*

The shelf life of boxed oranges can be extended when they are stacked so air can freely circulate around the box. Once oranges have been chilled internally and then removed from cold storage, the skin will act as an insulator, thus keeping the inside cool for many hours without refrigeration.

HANDLING

Temperature: Florida: 32-34°F
California: 45-48°F
Arizona & Texas: 32-48°F

Typical Shelf Life: AZ + CA: 21-56 days
FL + TX: 56-84 days

Relative Humidity: 85%-90%

Mist: No

Moderately sensitive to freezing injury

Susceptible to chilling injury

Odor Producer

Citrus

Measuring Flavor & Quality

Refractometers are a simple optical instrument that measure the amount of light refracted in a liquid. Refractometers measure on a "Brix" scale. Measuring the brix level of fruits and vegetables is very important because it is a great indicator of flavor and quality.

The higher the brix level of your fruits juices, the higher the dissolved solids in food juices such as sucrose, fructose, vitamins, minerals, amino acids, proteins, hormones and all the other goodness that the plant puts into the food. It is estimated that in a healthy fruit or vegetable, approximately 80% of the brix is represented by the natural sugars which gives the food its great flavor and goodness. It is believed by many people to be the best indicator of quality available in one quick and simple test.

Refractometers are a standard piece of equipment for many Agronomists and are a standard tool used in the fruit and citrus industries. Juice factories and vineyards especially use refractometers so they can measure the level of flavors in the juices and blend them to consistent brix level every time. Many companies are also now offering big bonuses to farmers who can produce high brix fruits because it means they have to add less artificial sweetener to the juices which are devoid of any nutritional value (unlike natural sugars).

**Mix
oranges
for custom
flavors!**



Citrus

Merchandising

DISPLAYS

Oranges may be hand-stacked in a waterfall cascade using similar sizes or gently dumped into bins for fairly massive displays. Display oranges at end aisles. Displays that incorporate a variety of in-season citrus fruits are workable and visually appealing. Keep them neat, clean, and attractive, and make sure all produce is top-quality. Check displays frequently to ensure there is no damaged or poor quality produce visible. Fresh fruit baskets are good gift suggestions and great for attractive displays. Include an orange sliced in half with one half of the butt end up and one down and then shrink wrap it so the customer can see the interior.

Setup a
loyalty
program!

IMPULSE-BUYING

Squeezing orange juice in view of shoppers helps to generate impulse sales. Glass pitchers show off the juice. Use bulk and bagged product to add impulse sales. According to marketing studies, most orange purchases are impulse sales.

VALUE-ADDED SERVICES

Offering additional benefits, rewards cards or future discounts to customers when ordering juice, are value-added services needed for customer retention. Keep in mind that resources you utilize in a loyalty program will most likely pale in comparison to the expense of finding new customers. More value-added offers to promote is a free nutritional juice guide, a company branded calendar or free item on their next visit. Your customers will be delighted!

Citrus

Juice Bar Launching Tips

- Promote animation: customers should be able to see employees working in the department, squeezing the juice.
- Have a display area that is free-standing. By having the bar on the floor, customers are able to see the employees preparing the juicer.
- Stay away from a production-style operation where the employees produce the juice, put it out and then go away. Studies have shown the juice sells better when the customer can see the person working during peak times.
- In-store sampling is critical. You just can't do enough sampling, whether it's a hired demonstrator or a juice bar operator suggestively selling.
- The best time to have in-store sampling is 3:00 – 8:00pm Friday night and 11:00am – 5:00pm on Saturdays and Sundays.
- Have self-serve modules with juice samples and a sign indicating to customers what it is and that they are free to help themselves.
- Display the juice on ice to create a "proof point of freshness."
- Using chillers with agitation is an excellent way to merchandise fresh juice.
- Invest in the right equipment for your business. It may be tempting to save money and buy cheap equipment, but you will lose out on labor costs and wasted produce, costing you more money in the end. Your juice equipment may be the most important investment you will make. Look for juicers that give you the highest yield and the lowest peel oil!

Choose
the right
fruit!