UNIVERSITY OF FLORIDA
EXTENSION
Institute of Food and Agricultural Sciences

HS149

Mandarin Scions[1]

C.J. Hearn and A.H. Krezdorn[2]

CLEMENTINE

Type and Parentage: Mandarin

Average Diameter: 2 - 2 1/2 inches

Seeds per Fruit: 6 - 12

Commercial Harvest Season: Dec - Jan

Characteristics

The Clementine has been used widely as the mother parent for many hybrids because it produces only zygotic progeny and because it is a high quality, early maturing fruit. Clementine attains very fine quality in the hot, humid climate of Florida. It requires cross-pollination for satisfactory crops. The tree is cold resistant but the fruit is susceptible. It is known in Europe and the Mediterranean as the Algerian mandarin.

Commercial Uses

Unfortunately, the extremely small sizes characteristic of the Clementine preclude its use as a commercial variety in Florida. This variety has poor natural color break and needs long ethylene treatment, which often causes problems. Fruit and foliage are somewhat susceptible to sour orange scab.

DANCY

Type and Parentage: Tangerine

Average Diameter: 2 1/4 - 2 1/2 inches

Seeds per Fruit: 6 - 20

Commercial Harvest Season: Dec - Jan

Characteristics

The Dancy tangerine is one of the first varieties grown commercially in Florida. It is thought to have been introduced into Florida about the mid-1800's, possibly from Morocco. It was the most important tangerine variety grown in Florida but is being replaced by Sunburst.

Fruit sizes range from 2 1/4 to 2 1/2 inches and its shape is slightly flattened. Peel color at maturity is a deep orange-red. Its smooth peel is easily removed. Seed number may vary from 6 to 20. The Dancy, like

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2. C. J. Hearn, United States Department of Agriculture, Agricultural Research Service, Orlando, and Adjunct Professor, Horticultural Sciences Department; A. H. Krezdorn, Emeritus Professor, Horticultural Sciences Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Dancy tangerine.

many mandarins, has a tendency to overbear and the typical brittle mandarin wood, a combination often resulting in limb breakage. Fruit size of Dancy is often inadequate so rough lemon is the most common rootstock used. One of the disadvantages of this variety is its tendency to produce large crops of small fruit. However, experimental evidence indicates that chemical thinning sprays may alleviate this problem or thinning the crop early in the season by pruning will allow the remaining fruit to size satisfactorily.

Dancy has a very high heat requirement and is well suited to the hot, humid climate of Florida. Irrigation will reduce acidity and thereby advance fruit maturity. This variety is susceptible to Alternaria brown spot disease. The Dancy tree is quite hardy to cold but the fruit is not. Moreover, the Dancy tree recuperates poorly following freeze injury.

Dancy does not serve well as a pollinizer because it blooms quite late and because there are years in which it does not bloom at all. Like Ponkan, it is a good dooryard variety. There have been few new plantings of Dancy, possibly because of its many problems; however, Dancy is a very profitable variety when managed, handled, and marketed properly.

Commercial Use

Dancy is the main source of tangerine oil in the industry. Although it frequently passes minimum maturity requirements in November, it has become popular due to its availability and spicy flavor during the winter holiday season, especially in December.

Adequate orange peel color develops even in tropical areas but is greatly affected by light, the best color developing in full sunlight. In Florida, Dancy is commonly spot picked for both size and color. Most Dancy fruit is shipped fresh. It does not compete well with Temple, which follows it and Dancy stores poorly on the tree. Thus, it is necessary to market Dancy within a relatively short period of time. The peel tears easily at harvest causing rapid fruit decay during postharvest handling. Degreening with ethylene increases susceptibility to stem end rot and handling damage. Further problems may be encountered with diphenyl pads and restricted ventilation in transit. The fruit may be refrigerated without problems at 38°F to 40°F and stored for 2 to 4 weeks at 40°F and a relative humidity of 87% to 92%. For more information see Fact Sheet HS-169, Dancy Tangerine.

FALLGLO

Type and Parentage: Bower citrus hybrid X Temple

Average Diameter: 3 - 3 1/4 inches

Seeds per fruit: 30 - 40

Commercial Harvest Season: Oct - Nov

Characteristics

Fallglo trees are moderately vigorous, thornless, upright, and slightly spreading with a fruit crop and fairly dense foliage. The leaves resemble Temple, but are resistant to sour orange scab. Field tests indicate that Fallglo is adapted to central and south ridge areas of Florida.

Field observations indicate that Fallglo has only moderate cold hardiness, less than that of Orlando and Sunburst. Trees are susceptible to twig dieback, but the problem has not been severe on large trees but has been severe on some small trees.

Fruit of Fallglo are large in size, approximately 3-3 1/4 inches in diameter. The oblate-shaped fruit is flattened at the apex and usually has a small depressed navel 1/16-1/2 inch in diameter. The stem end is flattened and some fruit have inconspicuous rind furrows radiating from the calyx. The calyx usually remains on the fruit when picked.

The rind surface is smooth, but has prominent oil glands. The rind is about 1/8-3/16 inch thick, easily

Fallglo.

removed and Mikado orange to Salmon orange in color at maturity. The 12-13 segments are readily separable and the axis is hollow. The flesh color is zinc orange, the fruit is juicy and has a pleasant flavor. There are about 30-40 seeds in the presence of maximum cross-pollination. Hand pollination results indicate that cross-pollination is not required for fruit set. For more information see Fact Sheet HS-173, Fallglo Tangerine .

Commercial Use

Fallglo fruit usually attain favorable taste and quality standards by the third week of October and can be marketed through late November. The juice has an excellent, very dark orange color, and a pleasant flavor, and may be used for juice blending.

The average fruit production is essentially the same for trees propagated on Carrizo, sour orange, Cleopatra, and Swingle rootstocks and may be slightly less on Rusk and rough lemon. Fruit size is the same for trees on these rootstocks. Fruit quality is poorest from trees on rough lemon rootstock, and large fruit from trees on this rootstock are prone to granulation at the stem end.

Fruit ripens very early in the season, earlier than any other fruit of its type. The fruit resembles that of Temple but is two months earlier, and has a better rind appearance. The tree and fruit are much more resistant to sour orange scab than Temple. The fruit are large with good rind color and appearance and have excellent taste and quality. Fruit can be picked without clipping at harvest. Fruit rind tends to show creasing when overripe and the rind color of the inside fruit may be delayed with large fruit crops. Fruit should not be degreened more than 36-40 hours to minimize postharvest decay.

A limited supply of budwood of Fallglo is available from trees that were indexed and found free of psorosis, xyloporosis and exocortis virus. Requests for budwood should be addressed to:

Bureau of Citrus Budwood Registration

DPI, 3027 Lake Alfred Road

Winter Haven, FL 33881/(813) 294-4267

Information on production and quality is available on request from the address below.

Dr. C.J. Hearn

U.S. Horticultural Research Lab

2120 Camden Road

Orlando, FL 32803

LEE

Type and Parentage: Citrus hybrid (Clementine X Orlando)

Average Diameter: 2 3/4 - 3 inches

Seeds per Fruit: 10 - 25

Commercial Harvest Season: Nov - Dec

Characteristics

The Lee was released in 1959 by the USDA Horticultural Field Station in Orlando. It was the result of a citrus breeding program and had the same parentage as Robinson.

Lee.

The fruit are generally oblate, sometimes slightly necked, with a smooth peel of medium thickness that can attain a deep orange color at full maturity. It is moderately seedy with 10 to 25 seeds embedded in orange colored flesh.

Commercial acreage is less than that of the Robinson, although its importance may increase as a pollinizer for Robinson. Orlando and Page may serve as pollinizers for Lee, however, recent evidence indicates that satisfactory crops may be obtained without pollinizers.

Commercial Use

Internal maturity may be reached during October, however, its rind color development is later than Robinson. Best eating qualities are attained in November, while in the warmer areas this variety, because of its naturally low acid content, often reaches legal maturity before full color break. In the cooler areas this is not as much of a problem.

As a result of its late color break, excessive degreening with ethylene is tempting, however, this leads to excessive stem end rot. Off-flavors develop in the juice during processing but concentrated juice of this variety may be added to frozen concentrate orange juice up to 10% by volume.

Trees are relatively cold hardy but the fruit, as in the case of most mandarin types, is susceptible. For more information see Fact Sheet HS-172, Lee Citrus Hybrid.

MINNEOLA (HONEYBELL)

Type and Parentage: Tangelo (Duncan X Dancy)

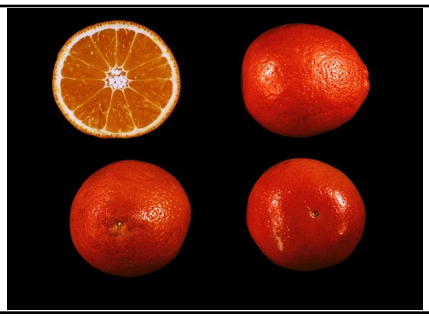
Average Diameter: 3 - 3 1/2 inches

Seeds per Fruit: 7 - 12

Commercial Harvest Season: Dec - Jan

Characteristics

The Minneola is another citrus variety that resulted from the USDA breeding program. It is of the same parentage as the Orlando tangelo (Duncan grapefruit and Dancy tangerine).



Minneola.

The shape of the Minneola fruit is quite distinct because of the prominent neck at the stem end. It is thin skinned, peels easily, and attains a bright reddish-orange color at maturity. The internal quality is pleasing, combining a bright orange-colored, tender flesh with an aromatic and tangy flavor.

The seed content varies from 7 to 12.

The trees are vigorously growing and productive. The large, long pointed, somewhat cupped leaves are quite characteristic. Fruit production is enhanced by cross-pollination by another variety such as Temple or Sunburst.

The trees are as cold hardy as the Orlando tangelo, however, the fruit are quite cold susceptible. It is also susceptible to scab.

Commercial Use

Minneola degenerates quickly if left on the tree and consequently has a rather short marketing period, which may be increased by a postharvest fungicidal treatment and cold storage. The pronounced neck at the stem end causes handling problems.

Minimum maturity requirements are frequently attained in late December, however, optimum eating quality is not realized until January and February.

The Minneola is a popular fresh fruit variety in Florida, however, commercial production at present is limited. The peel oil is not at present commercially produced but its quality is such that it offers an excellent potential for mandarin-type oil. For more information see Fact Sheet HS-171, Minneola Tangelo.

MURCOTT (HONEY TANGERINE)

Type and Parentage: Probably a hybrid of a Tangerine and Sweet Orange

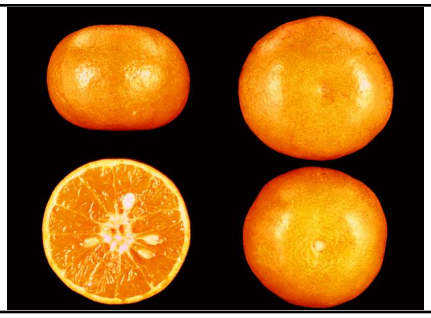
Average Diameter: 2 3/4 inches

Seeds per Fruit: 10 - 20

Commercial Harvest Season: Jan - Mar

Characteristics

The origin of the Murcott is unknown, however, it is believed to be a hybrid of a mandarin or tangerine and a sweet orange developed in a citrus breeding program conducted by the USDA. The name Murcott takes precedence over several others, including Murcott Honey and Honey Tangerine.



Murcott.

The trees are normally very cold-hardy but can be very susceptible to cold damage when heavy laden. The fruit are very susceptible to freeze damage, wind scarring, and sunburn, the latter problem being due to their habit of terminal bearing on long willowy branches. This variety is also plagued by seasonal fruit splitting and outbreaks of scab. For the efficient control of scab, correct timing of the fungicide applications is essential.

Although the external pale orange color and seediness of this fruit are disadvantages, the deep red-orange color of the flesh and the high sugar content are very desirable. Best eating quality is attained about February and may extend into early summer. However, minimum maturity requirements are frequently reached in December.

The Murcott has as great a tendency to alternate bearing as any commercially grown variety we have. As such, a year of a very light crop may be followed by one in which the trees are burdened with an excessive number of fruit. In these "on" years the fruit have been found to severely deplete the trees of nutrients and in general put a severe strain on its reserves. As a result, trees may show symptoms of die-back, limb breakage, and general collapse. A tree's bearing capacity may be set back several years or it may actually die. Courses of action open may include the following:

- thinning of the crop during the "on" years by pruning or the use of the chemical thinner NAA,
- hedging and/or topping programs during the "on" years, or
- nutritional adjustments.

Commercial Use

In the mid-1950's the Murcott was extensively planted throughout the state and is now a widely accepted fresh fruit variety especially favored by the gift fruit packers.

The peel oil per se is not of high quality but may be blended with that from the Dancy tangerine to give an excellent product. The fruit store satisfactorily for a period of 6 to 8 weeks at temperatures of 33°F to 35°F and a relative humidity of 87% and 92%. For more information see Fact Sheet HS-174, Murcott (Honey Tangerine).

NOVA

Type and Parentage: Tangelo (Clementine X Orlando)

Average Diameter: 2 3/4 - 3 inches

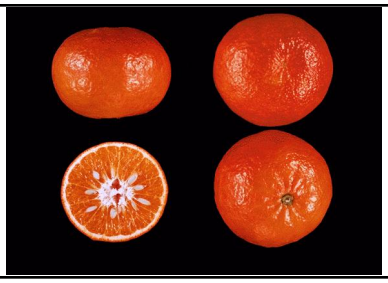
Seeds per Fruit: 1 - 30

Commercial Harvest Season: Nov - Dec

Characteristics

The Nova is a hybrid arising from the USDA citrus breeding program. It is a hybrid of Clementine mandarin and Orlando tangelo. It was released in 1964 and was quickly planted in relatively large acreages; however there are not a large enough

number of mature plantings from which to draw firm conclusions.



Nova.

The fruit is similar in many respects to the Orlando, however, its quality is considered to be superior. Accordingly, it is expected to compete with the latter on the market. It develops a superior deep red-orange color and its pebbly thin rind is peeled more easily than the Orlando. Heavy crops of large fruit are produced. However, an undesirable amount of fruit loss has been experienced from sun damage.

Nova trees are quite cold hardy and its compact habit of growth makes it a suitable candidate for close planting.

This variety is self-incompatible and slightly parthenocarpic. All such varieties can have anywhere from 1 to 30 seeds. The pollinizer situation is anything but clear, however, Orlando, Temple, or Lee may be used.

Commercial Use

Maturity requirements for Nova are met in November, however, eating quality is best during late November and December.

Although fruit sizes are good in the first few years of production, fruit quality may be poor. This usually improves with age. The fruit ship well and hold up satisfactorily during degreening, but packers should avoid excessive degreening with ethylene. See Fact Sheet HS-177, Nova Tangelo for more information.

ORLANDO

Type and Parentage: Tangelo (Duncan X Dancy)

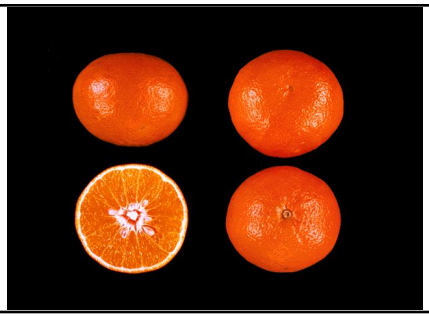
Average Diameter: 2 3/4 - 3 inches

Seeds per Fruit: 0 - 35

Commercial Harvest Season: Nov - Jan

Characteristics

The Orlando tangelo is one of the first citrus varieties resulting from a planned breeding program. It was developed by Dr. Swingle at the USDA in 1909 and released in 1931. It is a hybrid between what is now thought to be Duncan grapefruit and Dancy tangerine.



Orlando tangelo.

The leaves of Orlando tangelo trees are characteristically cupped. Fruit ranges in size from 2 3/4 to 3 inches and is round with pale to deep orange rind color. The thin, smooth to pebbly skin is easily removed. Seed number ranges from 0 to 35 with an average of about 20 depending on whether pollenizer varieties are present in the planting.

The Orlando tangelo is self-incompatible and requires a pollinizer variety such as Temple, Nova or Sunburst for satisfactory fruit set. In the absence of pollinizers, fruit set may be enhanced by girdling or with gibberellic acid sprays applied between full bloom and 2/3 petal fall. Trees tend to exhibit chronic nitrogen starvation symptoms, especially in winter and higher fertilization rates than those for round oranges are recommended. This variety is very susceptible to the virus xyloporosis. The trees are cold hardy.

Commercial Use

The Orlando is a relatively early maturing variety and may reach its minimum maturity requirements in November. Highest quality for eating purposes is usually attained during the December to January period.

At present most of the crop is marketed as fresh fruit with more than one-third diverted to processing. Its potential for mandarin-type peel oil is excellent. This is a very popular variety as the fruit is ready when specialty fruit are in great demand prior to Christmas.

After harvesting fruit may be satisfactorily stored for 4 to 6 weeks at 40°F and a relative humidity of 87% to 92%. For more information see Fact Sheet HS-175, Orlando Tangelo .

OSCEOLA

Type and Parentage: Citrus hybrid (Clementine X Orlando)

Average Diameter: 2 1/2 - 2 3/4 inches

Seeds per Fruit: 15 - 25

Commercial Harvest Season: Oct - Nov

Characteristics

The Osceola arose from the same cross, Clemetine x Orlando, that produced Robinson, Lee, and Nova in the USDA citrus breeding program. It was released in 1959 but was never planted extensively.

Osceola.

Fruit tend to be oblate in shape with a thin, easily removed deep red-orange peel. Fifteen to 25 seeds are embedded in the deep red-orange colored flesh. Osceola is unfruitful if not cross-pollinated. Cross-pollination also tends to improve the size of the inherently small fruit. Orlando and Lee are very good pollinizers for this variety. The trees are very cold hardy but the fruit quite susceptible. Both fruit and leaves are quite susceptible to scab.

Commercial Use

Maturity requirements for Osceola are often met in October and best eating quality in November. It is earlier maturing than the Dancy and may compete to some extent with Robinson and Sunburst.

The fruit should not be degreened for periods exceeding 36 hours. Off-flavors develop in the juice during processing, but concentrated juice may be added in amounts up to 10% to improve the color of frozen concentrate orange juice. For more information see Fact Sheet HS-180, Osceola Citrus Hybrid .

PAGE

Type and Parentage: Citrus hybrid (Minneola X Clementine)

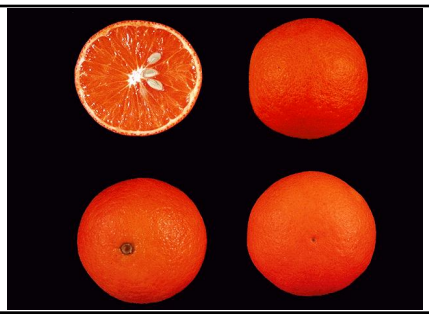
Average Diameter: 2 - 2 3/4 inches

Seeds per Fruit: 0 - 25

Commercial Harvest Season: Oct - Feb

Characteristics

This variety was released in 1963 by the USDA. As with the other hybrids, it was a product of the breeding program carried out at the Orlando Horticultural Field Station. The Page resulted from a cross between Clementine mandarin and Minneola tangelo.



Page.

At maturity it can be a very attractive fruit with a pebbly textured skin of dark red-orange color and medium thickness which is easily removed by hand. Its internal quality is outstanding and has been used as a standard of excellence in fruit quality ratings. The fruit reaches maturity during October and hold

their excellent quality for about 2 months. It holds and retains its taste well on the tree. This variety is highly parthenocarpic and requires a pollinizer only for the influence seeds have on fruit size.

The trees are quite cold hardy but the fruit are susceptible. Both fruit and foliage are very susceptible to scab and susceptibility will vary with location. The Page may lose a large number of leaves during the winter, thereby exhibiting a rather thin look.

In summary, the excellent quality of the fruit of this variety warrants research attempts to improve fruit size. Adequate pollination, good soil moisture, and fertilization, especially with potassium, at levels somewhat above those for round oranges are suggested as a partial solution to the problem. However, until further research findings are forthcoming, additional plantings of this variety should not be contemplated.

Commercial Use

In contrast to the Robinson, the Page has failed in commercial tests in spite of its superb eating quality. Page trees tend to bear many small fruit that are unacceptable commercially. Cross-pollination by another variety such as Lee, Orlando, or Temple will help to partially alleviate this problem.

Page fruit ships well and holds up satisfactorily under degreening conditions. Off-flavors in juice may develop during processing and storage; however, it may be added to frozen concentrate orange juice in quantities up to 10%. For more information see Fact Sheet HS-179, Page Citrus Hybrid.

PONKAN

Type and Parentage: Mandarin

Average Diameter: 2 3/4 - 3 1/4 inches

Seeds per Fruit: 3 - 7

Commercial Harvest Season: Dec - Jan

Characteristics

The Ponkan, also called the Warnurco tangerine, is of minor importance. It has long been grown in Florida where its low acidity and general high quality, and early season of ripening attracted growers to it. e growth is very upright, and, like other mandarins, the Ponkan has a strong tendency to alternate bearing and suffers severely from limb breakage in years when the crop is heavy. The trees are cold hardy but the fruit is susceptible. Like the Dancy, this variety is a good dooryard variety.

Commercial Use

Ponkan fruit is quite delicious but the tender peel of this variety will not tolerate the handling methods common in modern packinghouses. As a result, fruit ship poorly due to high incidence of decay. Thus, its use is limited primarily as a specialty fruit in roadside stands.

ROBINSON

Type and Parentage: Tangerine (Clementine X Orlando)

Average Diameter: 2 1/2 - 2 3/4 inches

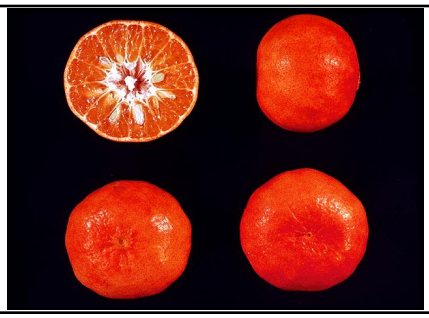
Seeds per Fruit: 1 - 20

Commercial Harvest Season: Oct - Dec

Characteristics

The Robinson tangerine was released for commercial propagation by the USDA in 1959 as a result of their long-term breeding program. It has become well established as a commercial variety and has been quite profitable in spite of a number of problems. It is a cross between the Clementine mandarin and the Orlando tangelo.

Although trees are relatively cold hardy, this should not indicate that they may be planted in cold locations. The fruit are quite susceptible to cold damage. Limb breakage and tree collapse are frequently associated with large crops of fruit, brittle wood and the tendency to bear fruit near the limb extremities. Too great a pollinizer density should be avoided. Although very close spacings should be



Robinson tangerine.

discouraged due to their spreading habit of growth, trees planted moderately close together will result in the formation of a hedgerow in which they tend to support themselves, reducing, if not eliminating, limb breakage.

The fruit are moderately seedy (1-20). Its shape is characteristic, being quite flat and frequently lopsided. The thin, smooth peel, which is easily removed by hand, attains a deep red-orange color at maturity.

The Robinson has been reported to be unfruitful because of self-incompatibility. When grown in solid plantings, some fruit are produced that are virtually seedless. It has little pollen, but that which it has is viable. As such it may be used to pollenize the Orlando. Recommended pollinizers for Robinson include the Temple, Orlando, Sunburst, or Lee.

Rough lemon rootstock is not recommended as it produces a poor quality fruit that dries out prematurely on the tree. Carrizo and Troyer rootstocks are suitable as alternatives as is Cleopatra, which is quite commonly used.

Difficulties, sometimes severe, have been experienced in young plantings with limb dieback, frequently resulting in heavy tree loss. The causal agent has not been identified. The dieback occurs occasionally in mature groves but is generally of no major concern here. Experimental work with new fungicides offers some hope for at least partial control. Indications to date are that hedging and topping practices have not resulted in any aggravation of the dieback problem. The Robinson tree grows so vigorously that it requires pruning at a relatively early age.

Commercial Use

Robinson, the earliest maturing of the six introduced hybrids, meets maturity requirements as early as October and has excellent quality and flavor for approximately 2 months. It has been very favorably accepted by the trade and consumers.

Robinson fruit are susceptible to Diplodia and Anthracnose decay. Degreening with ethylene for more than 36 hours is not recommended as decay problems increase with increased exposure. Therefore, the more mature the fruit is before picking, the less the decay problem. Off-flavors may develop in the juice during processing, however, up to 10% of concentrated juice may be added to improve the color of frozen concentrate orange juice. For more information see Fact Sheet HS-178, Robinson Tangerine.

SATSUMA

Type and Parentage: Mandarin

Average Diameter: 2 1/4 - 2 1/2 inches

Seeds per Fruit: 0 - 6

Commercial Harvest Season: Sep - Nov

Characteristics

The Owari is the major satsuma variety grown in Florida. Satsumas are grown in northern Florida and throughout the lower gulf coast to Texas and once constituted a large fruit industry. Thousands of acres were eliminated as a result of citrus canker and occasional severe freezes, reducing the importance of satsumas to cultivars of minor significance. Satsumas attain satisfactory quality only in regions with cool winters and hot summers. This is a cold hardy variety that produces the best quality fruit in the northern part of the state. Trees have a characteristic open habit of growth with less foliage than is normal in other citrus varieties.

Grown under proper conditions, satsumas are of excellent quality. Satsuma has a late developing peel color that is a brilliant reddish-orange. The fruit is virtually seedless as the result of sterile ovules and sterile pollen. The fruit does not store well on the tree

but it keeps well for long periods of time off the tree. It is used primarily as a fresh fruit. The fruit has 10-12 segments that are loosely separable around a hollow axis. The flesh is orange colored, tender, and juicy. The juice is quite sweet, with moderate sugars and low acid content.

SUNBURST

Type and Parentage: Citrus hybrid (Robinson X Osceola)

Average Diameter: 2 1/2 - 3 inches

Seeds per Fruit: 1 - 20

Commercial Harvest Season: Nov - Dec

Characteristics

Sunburst was developed in the USDA breeding program in Florida and released as a commercial variety in 1979. It resulted from a 1961 cross of sibling hybrids Robinson and Osceola. The trees are highly resistant to snow scale, and both trees and fruit have field resistance to Alternaria disease. Sunburst trees are moderately vigorous, thornless, upright and spreading, with dark green foliage. The trees are precocious and prolific. Sunburst trees are cold hardy and are about equal to Robinson and Osceola in this regard. Tests indicate that Sunburst trees perform well in the Indian River area where tangerines perform poorly. Sunburst trees are susceptible to foliage and twig injury caused by rust mite injury, requiring control of this insect pest.

Sunburst.

Sunburst trees begin bearing within 3 years. They require cross-pollination for good fruit set, and Orlando, Temple, Nova, or Minneola could be used effectively as a pollinizer. They produce high quality, attractive fruit of the mandarin or tangerine type, with good flavor. The rind color is reddish-orange at maturity in a cool climate. The 11 to 14 segments are readily separable, and the axis is hollow. The fruit are juicy and the flesh color is dark orange. Fruit size has been similar from Sunburst on Carrizo, rough lemon, and sour orange rootstocks, and has been slightly smaller for trees on Cleopatra. The size has been satisfactory on all trees.

Commercial Use

In Florida, the fruit ripens in mid-November and would be marketed through December. This desirable marketing period is after that of Robinson and generally before Dancy. At harvest time, the Sunburst fruit have better rind color than do Robinson or Dancy. Its postharvest losses are lower due, in part, to reduced need for degreening as well as less rind tearing (plugging) when the fruit is snapped at harvest. The juice of Sunburst fruit has excellent color and may be used for juice blending. The absence of limonin, a bitter compound, in Sunburst juice is a desirable processing feature. See Fact Sheet HS-168, Sunburst Tangerine for more information.

TEMPLE

Type and Parentage: Temple (probably a hybrid of tangerine X sweet orange)

Average Diameter: 2 3/4 - 3 inches

Seeds per Fruit: 15 - 20

Commercial Harvest Season: Jan - Mar

Characteristics

Although commonly referred to as an orange, the Temple should be correctly classified as a tangor as it is probably a hybrid of a sweet orange and a mandarin. Its origin is not known, however, it was apparently shipped to Florida from Jamaica as budwood from a seedling tree producing fruit of outstanding quality.

The tree is spreading, bushy, and rather thorny. Leaves are medium-sized and pointed. This variety is considered by many to be the most cold-sensitive of all mandarin types.

Temple.

Temple produces fruit of superior quality when grown on sour orange and Cleopatra mandarin rootstocks.

Fruit from trees on rough lemon rootstock tend to be light colored, rough textured, and dry out prematurely. The fruit is quite seedy (15-20) and has a thick, pebbly, rough textured peel. The rind of the mature fruit has an attractive reddish-orange color and is relatively easily removed by hand.

The flesh is deep orange in color, tender, and moderately juicy. This variety may reach its legal maturity in January, however best eating quality is attained through February and March. Juice quality is excellent with a rich, distinct flavor, and the fruit has frequently obtained the highest ratings by taste panels.

The Temple is extremely susceptible to the fungus disease scab and a combination of thorough coverage and precise timing of sprays is essential for satisfactory control.

Commercial Use

Commercial production of this variety is somewhat limited by its high heat requirement for maximum growth and its sensitivity to cold. Fruit drop and deteriorate rapidly following freezing weather.

Fertilizer recommendations for Temple are the same as for round oranges, however, as is customary with fruit destined for the fresh fruit market, higher fertilizer rates, especially nitrogen, should be avoided.

The fruit is very susceptible to rough handling and to ethylene damage in the degreening rooms. Hence, when possible, the fruit should be allowed to attain satisfactory color on the tree. Fruit may lose their characteristic odor in storage. This variety is also very susceptible to the development of sour rot in storage.

An excellent quality oil is produced from this variety. The juice can be mixed with that of round oranges, up to 10%, to improve the frozen concentrate color rating. For more information see Fact Sheet HS-181, Temple Tangor.