



CITRUS OCTOBER FORECAST

MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture and Consumer Services
2290 Lucien Way, Suite 300, Maitland, FL 32751-7058
(407) 648-6013 · (855) 271-9801 FAX · www.nass.usda.gov/fl

October 12, 2017

Florida All Orange Production Down 21 Percent
Florida Non-Valencia Orange Production Down 30 Percent
Florida Valencia Orange Production Down 13 Percent
Florida All Grapefruit Production Down 37 Percent
Florida All Tangerine and Tangelo Production Down 38 Percent

2017-2018 SEASON FORECAST DATES	
November 9, 2017	
December 12, 2017	
January 12, 2018	

Citrus Production by Type and State – United States

Crop and State	Production ¹			Forecasted Production ¹
	2014-2015 (1,000 boxes)	2015-2016 (1,000 boxes)	2016-2017 (1,000 boxes)	2017-2018 (1,000 boxes)
Non-Valencia Oranges ²				
Florida	47,400	36,100	33,000	23,000
California	39,000	47,200	39,300	35,000
Texas	1,170	1,351	1,090	1,350
United States.....	87,570	84,651	73,390	59,350
Valencia Oranges				
Florida	49,550	45,600	35,750	31,000
California	9,200	11,300	11,000	11,000
Texas	282	340	280	300
United States.....	59,032	57,240	47,030	42,300
All Oranges				
Florida	96,950	81,700	68,750	54,000
California	48,200	58,500	50,300	46,000
Texas	1,452	1,691	1,370	1,650
United States.....	146,602	141,891	120,420	101,650
Grapefruit				
Florida-All.....	12,900	10,800	7,760	4,900
White.....	3,250	2,490	1,480	900
Red.....	9,650	8,310	6,280	4,000
California	4,800	3,800	4,000	4,200
Texas	4,250	4,800	4,800	5,300
United States.....	21,950	19,400	16,560	14,400
Lemons				
California	20,600	21,000	20,500	21,000
Arizona	2,000	1,600	1,650	1,600
United States.....	22,600	22,600	22,150	22,600
Tangelos				
Florida	665	390	(NA)	(NA)
Tangerines and Tangelos				
Florida-All ³	2,265	1,415	1,620	1,000
Early ⁴	1,445	785	600	(NA)
Royal	(NA)	(NA)	210	(NA)
Honey.....	820	630	530	(NA)
Tangelo.....	(NA)	(NA)	280	(NA)
California ⁵	18,700	21,700	23,900	23,000
Arizona ⁶	170	(NA)	(NA)	(NA)
United States.....	21,135	23,115	25,520	24,000

NA Not available.

¹ Net pounds per box: oranges in California-80, Florida-90, Texas-85; grapefruit in California and Texas-80, Florida-85; lemons-80; tangelos-90 in 2014-2015 and 2015-2016 and tangerines and mandarins in Arizona and California-80, Florida-95.

² Navel and miscellaneous varieties in California; Early (including Navel) and midseason varieties in Florida and Texas. Includes small quantities of Temples in Florida for 2014-2015 through 2015-2016.

³ Prior to 2016-2017 includes Fallglo, Sunburst, and Honey tangerine varieties only. In 2016-2017, includes Fallglo, Sunburst, Royal, and Honey tangerine varieties and tangelos. Beginning in 2017-2018, includes all certified varieties of tangerines and tangelos.

⁴ Fallglo and Sunburst varieties.

⁵ Includes tangelos and tangors in California.

⁶ Estimates discontinued in 2015-2016.

All Oranges 54.0 Million Boxes

The 2017-2018 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 54.0 million boxes, 21 percent less than last season's final production. The total includes 23.0 million boxes of non-Valencia oranges (early, midseason, and Navel varieties) and 31.0 million boxes of Valencia oranges. The Navel orange forecast, at 600 thousand boxes, accounts for 3 percent of the non-Valencia total.

The estimated number of bearing trees for all oranges is 48.9 million. Trees planted in 2014 and earlier are considered bearing this season. Field work for the latest Commercial Citrus Inventory was completed in June 2017. Attrition rates were applied to the results to determine the number of bearing trees which are used to weight and expand objective count data in the forecast model.

The citrus growing region was drought-free at the start of the 2017-2018 citrus growing season. In January, the region started showing abnormally dry conditions. By February, bloom had begun and was full in some areas. Other areas held off and showed only light and scattered bloom. In March, the Southern citrus growing area was in moderate drought conditions, while the Northern area remained abnormally dry. During these times of dry weather, citrus groves required the use of irrigation systems. Temperatures were above average for the majority of the season. Precipitation returned for the summer months to keep all areas drought-free. In September, Hurricane Irma made landfall in Florida at Marco Island and went up through the Western side of the citrus belt. The hurricane left some areas flooded and extremely wet.

A 10 year regression has been used for comparison purposes. For those previous 10 seasons, average actual production is 124 million boxes. The initial forecast has deviated from final production by an average of 6 percent, with 8 seasons above and 2 below, with differences ranging from 2 percent below to 19 percent above.

The procedures used in this forecast are the same as used in past seasons. The methodology is described on page 5 of this report. All references to "average," "minimum" and "maximum" refer to the previous 10 seasons. Average fruit per tree includes both regular bloom and the first late bloom.

Non-Valencia Oranges 23.0 Million Boxes

The non-Valencia forecast of 23.0 million boxes is 30 percent lower than last season's production. The estimated number of bearing trees (without Navels) is 19.6 million. The estimated fruit per tree for early-midseason oranges is 741, a decrease of 3 percent from last season. Projected fruit size is below average, requiring an estimated 289 pieces of fruit to fill a 90-pound box. At 48 percent, droppage is well above the maximum.

Based on fruit population, the prorated forecast shows a decrease of 4.21 million boxes in the Western area compared to last season. The combined other areas show a decrease of 5.79 million boxes.

The Navel forecast of 600 thousand boxes is 25 percent lower than last season's production. If realized, this will be the lowest in a series dating back to 1979-1980 when separate Navel forecasts began. The estimated number of bearing trees is 913 thousand, down 2 percent from the previous season. The estimated fruit per tree is 252, an increase of 15 percent from last season. Projected fruit size is slightly above average, requiring an estimated 139 pieces of fruit to fill a 90-pound box. Projected droppage is well above maximum at 49 percent.

Valencia Oranges 31.0 Million Boxes

The Valencia forecast of 31.0 million boxes is 13 percent lower than last season's production. The estimated number of bearing trees is 28.4 million, down 2 percent from the previous season. The estimated fruit per tree is 510, an increase of 13 percent from last season. Projected fruit size is below average, requiring an estimated 237 pieces of fruit to fill a 90-pound box. Projected droppage is well above the maximum at 45 percent.

Based on fruit population, the prorated forecast shows a decrease of 3.20 million boxes in the Western area compared to last season. The combined other areas show a decrease of 1.55 million boxes.

Forecast Components, by Type – Florida: October 2017

[Survey data is considered final in December for Navels, January for early-midseason oranges, February for grapefruit, and April for Valencia oranges]

Type	Bearing trees (1,000 trees)	Fruit per tree (number)	Droppage (percent)	Fruit per box (number)
ORANGES				
Early-midseason	19,569	741	48	289
Navel	913	252	49	139
Valencia.....	28,390	510	45	237
GRAPEFRUIT				
White	722	396	53	112
Red.....	2,834	385	54	117

Citrus Production and Prorated Forecast, by Production Area – Florida: 2016-2017 and 2017-2018

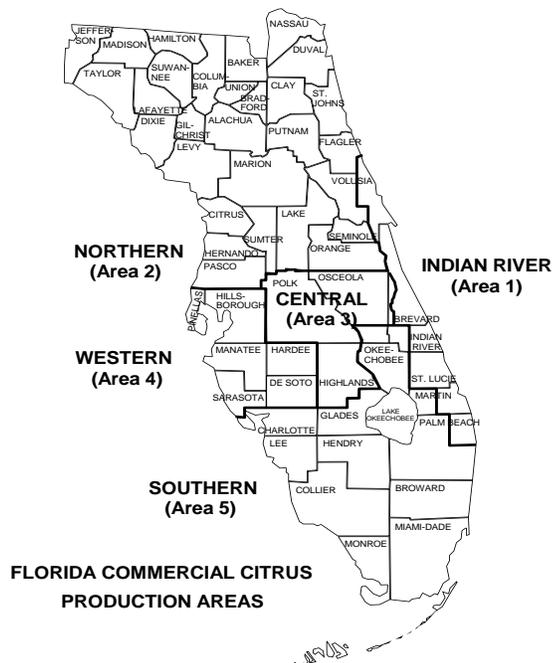
[Forecasts based on fruit populations. The possible differences between growing areas, concerning average fruit size, loss from droppage, and harvest patterns, can alter the prorated estimates]

Production Area	Oranges			
	Non-Valencia		Valencia	
	2016-2017 (1,000 Boxes)	2017-2018 (1,000 boxes)	2016-2017 (1,000 boxes)	2017-2018 (1,000 boxes)
Western.....	12,506	8,300	10,200	7,000
Other ¹	20,494	14,700	25,550	24,000
Florida Total	33,000	23,000	35,750	31,000

Production Area	Grapefruit			
	White		Red	
	2016-2017 (1,000 boxes)	2017-2018 (1,000 boxes)	2016-2017 (1,000 boxes)	2017-2018 (1,000 boxes)
Indian River.....	1,175	740	4,916	2,780
Other ²	305	160	1,364	1,220
Florida Total	1,480	900	6,280	4,000

¹ Includes Central, Indian River, Northern and Southern areas.

² Includes Central, Northern, Southern and Western areas.



Distribution of Estimated Fruit Population, by Type, Area, and Age Groups – Florida: September

[Distribution of fruit population in September as determined by multiplying average fruit per tree from the Limb Count Survey by bearing age trees]

Areas and age groups	Oranges				Grapefruit			
	Non-Valencia		Valencia		White		Red	
	2016-2017 (percent)	2017-2018 (percent)	2016-2017 (percent)	2017-2018 (percent)	2016-2017 (percent)	2017-2018 (percent)	2016-2017 (percent)	2017-2018 (percent)
Indian River.....	1	2	4	4	79	82	66	69
Northern	4	3	1	1	(Z)	(Z)	3	2
Central	30	29	34	36	11	13	10	6
Western.....	37	36	27	23	1	(Z)	3	3
Southern	28	30	34	36	9	4	18	20
3 - 5 years	4	5	4	6	(Z)	(Z)	5	10
6 - 8 years	7	8	5	6	1	1	6	8
9 - 13 years	12	13	9	9	3	2	8	7
14 - 23 years	23	23	32	29	12	11	12	7
24 yrs & over.....	54	51	50	50	84	86	69	68

Z Less than half of the unit shown.

Maturity

Regular bloom fruit samples (322 orange and 96 grapefruit) were collected from groves on established routes in Florida's five major citrus producing areas and tested by the Florida Agricultural Statistics Service (FASS) on September 27-29, 2017.

Citrus Unadjusted Maturity Tests – Florida: 2016-2017 and 2017-2018

[Averages of regular bloom fruit from sample groves. Juice and solids per box are unadjusted and not comparable to juice processing plant test results. For 2016-2017 all samples were run through an FMC 091 machine using mechanical pressure only. This machine utilizes a .040 short strainer and standard 5/8 inch orifice tube on all cups. For 2017-2018, samples were run through an FMC 091B machine using pneumatic pressure. This machine utilizes a 0.025 short strainer and a 1.00 inch orifice tube for the 3 inch cup and a 1.25 inch orifice tube for the 4 inch and 5 inch cups]

Fruit type (number of groves) test date	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early (119-117)										
Sep 1.....	1.39	1.17	9.26	9.10	6.79	7.96	41.37	43.84	3.83	3.99
Oct 1.....	0.98	0.88	9.51	9.22	9.88	10.72	47.20	49.19	4.49	4.53
Midseason (55-55)										
Sep 1.....	1.55	1.27	9.19	8.97	5.99	7.22	41.67	44.70	3.83	4.01
Oct 1.....	1.13	0.95	9.38	9.38	8.46	10.05	47.72	51.51	4.48	4.84
Late (150-150)										
Sep 1.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Oct 1.....	1.99	1.84	8.83	8.74	4.52	4.83	46.02	48.52	4.06	4.24
GRAPEFRUIT										
White Seedless (49-48)										
Sep 1.....	1.77	1.53	10.23	9.75	5.77	6.39	32.06	37.19	3.28	3.63
Oct 1.....	1.52	1.34	9.91	9.48	6.54	7.11	36.77	44.04	3.64	4.18
Red Seedless (48-48)										
Sep 1.....	1.70	1.43	10.15	9.84	5.98	6.88	33.35	36.95	3.38	3.64
Oct 1.....	1.45	1.28	9.91	9.55	6.85	7.50	36.68	43.62	3.64	4.16

NA Not available.

Citrus Maturity Test Averages, by Areas – Florida: October 2016-2017 and 2017-2018

Fruit type (number of groves) test date	Acid		Solids (Brix)		Ratio		Unfinished juice per box		Solids per box	
	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018	2016-2017	2017-2018
	(percent)	(percent)	(percent)	(percent)			(pounds)	(pounds)	(pounds)	(pounds)
ORANGES										
Early										
Indian River (9-9).....	1.07	0.93	9.67	9.31	9.16	10.18	43.48	45.96	4.21	4.28
Other Areas ¹ (110-108)	0.97	0.87	9.50	9.21	9.94	10.77	47.51	49.46	4.51	4.55
Midseason										
Indian River (4-2).....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Other Areas ¹ (51-53)....	1.14	0.94	9.39	9.37	8.43	10.09	47.86	51.53	4.49	4.83
Late										
Indian River (29-29).....	2.04	1.99	9.07	8.91	4.50	4.51	45.51	46.72	4.14	4.16
Other Areas ¹ (121-121)	1.98	1.80	8.77	8.70	4.53	4.90	46.14	48.96	4.05	4.26
GRAPEFRUIT										
White Seedless										
Indian River (38-37).....	1.54	1.34	10.05	9.56	6.54	7.14	35.86	44.46	3.60	4.25
Other Areas ¹ (11-11)....	1.45	1.32	9.41	9.20	6.55	7.02	39.93	42.62	3.76	3.93
Red Seedless										
Indian River (40-40).....	1.45	1.28	9.98	9.56	6.90	7.49	36.68	43.71	3.67	4.17
Other Areas ¹ (8-8).....	1.45	1.26	9.60	9.51	6.63	7.55	35.99	43.18	3.46	4.12

D Withheld to avoid disclosing data for individual operations.

¹ Includes Central, Northern, Southern, and Western areas.

All Grapefruit 4.90 Million Boxes

The forecast of grapefruit production is 4.90 million boxes, 37 percent less than last season's production. The total includes 900 thousand boxes of white grapefruit and 4.00 million boxes of red grapefruit. All grapefruit bearing trees are estimated to be 3.56 million, down 6 percent from the previous season.

The **white** grapefruit forecast of 900 thousand boxes is 39 percent less than last season's production. The estimated number of bearing trees is down 13 percent from the previous season. The estimated fruit per tree is 396, a decrease of 4 percent from last season. Projected fruit size is slightly below average, requiring an estimated 112 pieces of fruit to fill an 85-pound box. Projected droppage at 53 percent would surpass the 43 percent recorded in the 2016-2017 season.

The **red** grapefruit forecast of 4.00 million boxes is 36 percent less than last season's final production. The estimated number of bearing trees is down 4 percent from the previous season. The estimated fruit per tree is 385, a decrease of 3 percent from last season. Projected fruit size is slightly below average, requiring an estimated 117 pieces of fruit to fill an 85-pound box. Projected droppage at 54 percent would surpass the 40 percent recorded in the 2015-2016 season.

Tangerines and Tangelos Total 1.00 Million Boxes

The forecast for the tangerine and tangelos is 1.00 million boxes, 38 percent less than last season's production. This forecast number includes all certified tangerine and tangelo varieties.

Forecast Procedures

All citrus forecasts are based on actual fruit counts and measurements. The objective count method uses four components:

- (1) bearing age trees provided from the latest Commercial Citrus Inventory;
- (2) average fruit per tree obtained from the Limb Count survey using randomly selected trees and limbs;
- (3) fruit size from the fruit measurement survey; and
- (4) fruit loss from the drop survey.

These measurements are used in the forecast models; regression data are from the 2007-2008 through 2016-2017 seasons.

The latest Tree Inventory is used to determine estimated tree numbers. All trees planted in 2014 and earlier are included for the current season. An attrition factor was applied to these tree numbers (by age and area) to account for losses since the inventory period.

The Limb Count survey provided fruit per tree before Hurricane Irma passed through Florida. No adjustments were made to the fruit per tree after the hurricane. Initial size measurements and fruit counts for drop were recorded in August. Following the hurricane, data was collected for the September survey. The drop percentage used includes effects of Hurricane Irma.

Statistically valid procedures are used to provide unbiased estimates of fruit count. Samples are drawn with known probabilities from the Commercial Citrus Inventory, taking into account the variability in fruit per tree. Limbs are randomly selected from sample trees. Fruit on these limbs are counted in the mid-July to mid-September period.

Expected Gift Fruit Shipments Under the 6-R Program and Non-Certified Usage, by Type – Florida: 2017-2018

Type	1,000 boxes
Navel Oranges	100
Early-midseason Oranges (excluding navels)	180
Valencia Oranges	210
White Grapefruit.....	35
Red Grapefruit	150
All Tangerines and Tangelos	70

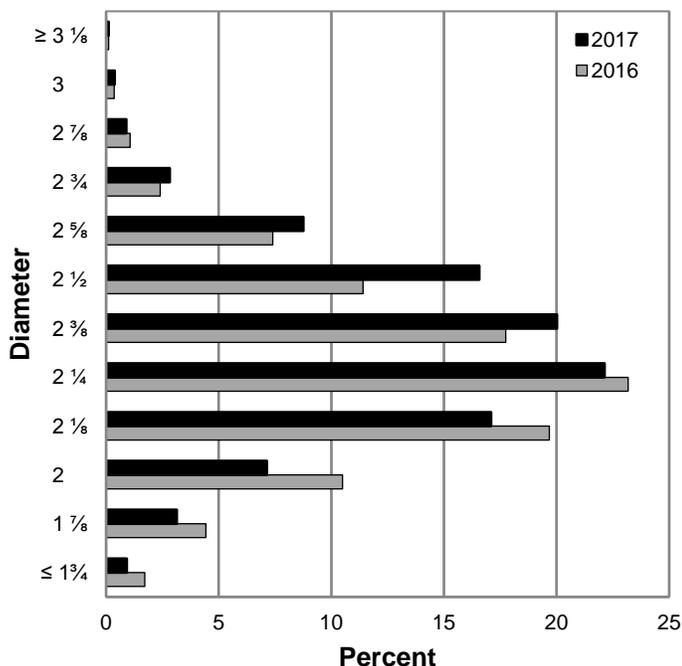
Citrus Size Frequency Measurement Distributions, by Type – Florida: September

Type and number of fruit per 4/5 – bushel containers	2015	2016	2017	Type and number of fruit per 4/5 – bushel containers	2015	2016	2017
	(percent)	(percent)	(percent)		(percent)	(percent)	(percent)
NON-VALENCIA ORANGES ¹				WHITE GRAPEFRUIT ²			
64 or less	0.1	0.1	0.1	32 or less.....	0.1	0.7	0.4
80	1.2	0.9	0.7	36	1.6	2.6	2.8
100	6.6	5.7	6.4	40	5.2	4.1	7.2
125	20.2	16.1	22.4	48	10.4	9.4	13.2
163 or more	71.9	77.2	70.4	56	11.7	13.0	14.1
				63 or more	71.0	70.2	62.3
NAVEL ORANGES				RED GRAPEFRUIT			
64 or less	23.9	24.7	26.6	32 or less.....	1.1	0.4	0.4
80	33.0	28.5	30.8	36	4.3	1.6	3.2
100	25.2	25.6	25.0	40	7.0	5.5	7.3
125	12.0	11.8	12.9	48	11.9	10.4	11.1
163 or more	5.9	9.4	4.7	56	12.9	12.5	12.6
				63 or more	62.8	69.6	65.4
VALENCIA ORANGES				FALLGLO TANGERINES			
64 or less	0.1	0.2	0.1	80 or less.....	12.1	0.3	13.2
80	1.5	1.7	1.3	100	13.7	6.9	18.2
100	9.4	8.9	7.0	120	20.0	21.5	21.5
125	25.4	20.5	24.3	176	12.5	14.7	9.7
163 or more	63.6	68.7	67.3	210 or more	41.7	56.6	37.4
TANGELOS				SUNBURST TANGERINES			
80 or less	3.4	1.9	1.1	100 or less.....	5.2	0.2	0.9
100	11.2	4.4	7.5	120	9.4	4.4	9.4
120	19.8	12.8	23.2	176	10.4	4.2	10.9
156 or more	65.6	80.9	68.2	210 or more	75.0	91.2	78.8

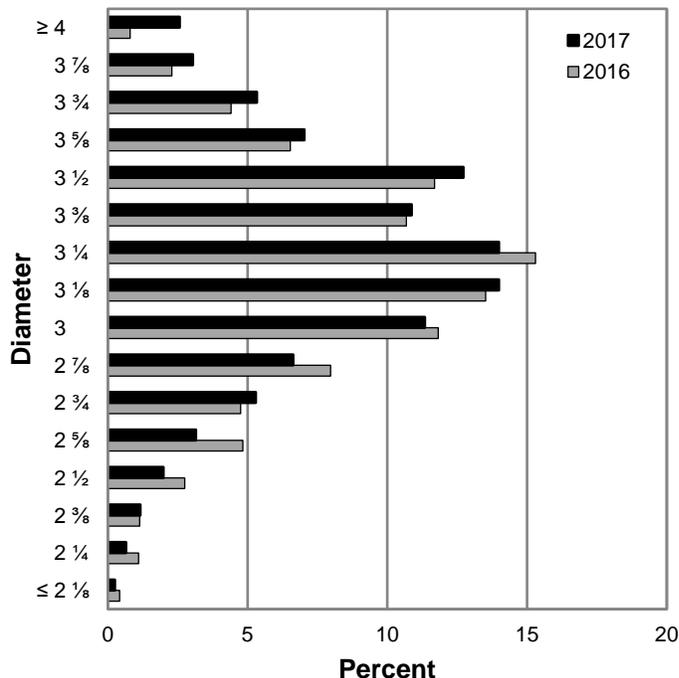
¹ Excludes Navels.

² Excludes seedy variety.

Fruit Size Frequency Measurements, Non-Valencia Oranges ¹, by Diameter - Florida: September



Fruit Size Frequency Measurements, Red Grapefruit, by Diameter - Florida: September



¹ Excludes Navel variety.