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October 9, 2009

## All Oranges 136.0 Million Boxes

The 2009-10 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 136.0 million boxes. This forecast is 16 percent less than the final production of 162.4 million boxes last season and 20 percent less than the 170.2 million boxes produced in 2007-08. The forecast is comprised of 67.0 million boxes of the late maturing Valencia oranges and 69.0 million boxes of the non-Valencia oranges (early, midseason, Navel, and Temple varieties). Navel orange production is forecast at 2.3 million boxes, which is 3 percent of the non-Valencia total.

The hurricane seasons of 2004-05 and 2005-06 have been excluded from the usual 10-year regression analysis and from comparisons of the current season to previous seasons. For those previous 8 seasons, average actual production is 200.0 million boxes. The October forecast has deviated from final production by an average of 5 percent with 5 seasons above and 3 below, with differences ranging from 9 percent below to 8 percent above.

Weather conditions during early 2009 were characterized by a series of cold fronts, freezing temperatures, and below average rainfall in many citrus producing areas. In mid-March, the start of the 2009-10 crop began with a full citrus bloom. Drought conditions worsened throughout April and May. Heavy afternoon rains and typical Florida weather patterns returned in late May and continued into the harvest season.

Orange Production by Type and State - United States: 2006-2007, 2007-2008, 2008-2009, and Forecasted October 1, 2009

| Crop and State | Production |  |  | Forecast |
| :---: | :---: | :--- | :---: | :---: |
|  | $2006-2007$ | $2007-2008$ | $2008-2009$ | $2009-2010$ |
| $(1,000$ boxes $)$ |  |  |  |  |$(1,000$ boxes $)(1,000$ boxes $)(1,000$ boxes $)$.

NON-VALENCIA ORANGES ${ }^{1}$

| Florida | $\mathbf{6 5 , 6 0 0}$ | $\mathbf{8 3 , 5 0 0}$ | $\mathbf{8 4 , 6 0 0}$ | $\mathbf{6 9 , 0 0 0}$ |
| :--- | ---: | ---: | ---: | ---: |
| California | 34,500 | 45,000 | 34,500 | 40,000 |
| Texas | 1,600 | 1,600 | 1,300 | 1,250 |
| Arizona $^{2}$ | 200 | 230 | 150 |  |
| United States | 101,900 | 130,330 | 120,550 | $\mathbf{1 1 0 , 2 5 0}$ |
| VALENCIA ORANGES |  |  |  |  |
| Florida | $\mathbf{6 3 , 4 0 0}$ | $\mathbf{8 6 , 7 0 0}$ | $\mathbf{7 7 , 8 0 0}$ | $\mathbf{6 7 , 0 0 0}$ |
| California | 11,500 | 17,000 | 14,000 | 15,000 |
| Texas | 380 | 196 | 159 | 200 |
| Arizona | 100 | 150 | 100 |  |
| United States | 75,380 | 104,046 | 92,059 | 82,200 |
| ALL ORANGES |  |  |  |  |
| Florida | $\mathbf{1 2 9 , 0 0 0}$ | $\mathbf{1 7 0 , 2 0 0}$ | $\mathbf{1 6 2 , 4 0 0}$ | $\mathbf{1 3 6 , 0 0 0}$ |
| California | 46,000 | 62,000 | 48,500 | 55,000 |
| Texas | 1,980 | 1,796 | 1,549 | 1,450 |
| Arizona | 300 | 380 | 250 |  |
| United States | 177,280 | 234,376 | 212,609 | 192,450 |

${ }^{1}$ Early, midseason, Navel, and Temple varieties.
${ }^{2}$ Estimates discontinued beginning with the 2009-2010 crop year.

# 2009 Forecast Dates 2009-2010 SEASON 

November 10, 2009 December 10, 2009

For the 2009-10 season, the number of bearing trees is estimated to be 59.4 million, down 2 percent from last season. Trees planted in 2006 and earlier are considered bearing this season. Field work for the latest Commercial Citrus Inventory was completed in June 2009. 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 average fruit per tree is down 19 percent from the revised 2008-09 figure for all oranges. Decreases in fruit per tree ranged from 17 percent for Valencia oranges to 24 percent for Navels. Projected sizes are larger for all orange varieties except the Navels.

Average fruit per tree includes regular bloom and the first late bloom. Limb Count survey records indicate that less than 1 piece of fruit per tree was considered first late bloom compared with 2 pieces last season. Second late bloom fruit is negligible this season and is never included in the forecast.

Fruit samples were collected from all citrus producing areas September 21-22. Maturity tests were performed September 23-25. Results of these maturity tests appear on pages 3 and 4 .

The procedures used in this forecast are the same as used in past seasons. The methodology is described on page 6 of this report.

## FCOJ Yield 1.63 Gallons per Box

The projection for frozen concentrated orange juice (FCOJ) is 1.63 gallons per box of $42^{\circ}$ Brix concentrate. Last season's final all orange yield was 1.664452 gallons per box, down slightly from the record of 1.672737 set in 2007-08. Figures for the components will be published in January. Record yields are 1.597195 gallons per box for the early-midseason category (set last season) and 1.790343 gallons per box for Valencias which occurred in 2007-08.

## Orange Forecast Components, by Variety - Florida: October 2009

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

| Type | Bearing <br> trees | Fruit <br> per <br> tree | Droppage | Fruit <br> per <br> box |
| :--- | :---: | :---: | ---: | ---: |
| $(1,000$ trees) |  |  |  |  | (number) | (percent) |
| :--- | (number)

## Non-Valencia Oranges 69.0 Million Boxes

Forecast of the non-Valencia oranges (early, midseason, Navel, and Temple varieties) is 69.0 million boxes. The Navel portion of the forecast is 2.3 million boxes. If realized, this forecast would be 18 percent less than last season's production.

Non-Valencia bearing trees are estimated to be 25.7 million, down 2 percent from last season's total of 26.2 million trees. For the early-midseason oranges (excluding Navels and Temples), trees planted from 1986-95 account for 48 percent, while the youngest bearing trees (planted in 2004-06) account for only 9 percent of total bearing trees. Production areas containing the largest number of bearing early-midseason trees are the Western with 7.7 million ( 32 percent) followed by the Southern with 7.0 million (29 percent).

Average fruit per tree for early-midseason oranges is estimated to be 862 which is 220 pieces of fruit lower than last season and below the average of seasons used in the regressions.

Early-midseason oranges were small initially, but showed an above average rate of growth during September. Fruit size is expected to be nearly average at harvest, requiring 249 pieces of fruit to fill a 90 -pound equivalent box. Current droppage is below average. The projection of 8 percent droppage at harvest is slightly below average.

The Navel orange forecast of 2.3 million boxes is down 23 percent from last season's crop. During the last 10 seasons, 74 percent of the Navel production has been packed as fresh fruit. Overall production has been trending downward since the high of 6.4 million boxes in 1996-97. The current season forecast is the lowest since the 2.05 million boxes of 1985-86 which occurred in a decade marred by severe freezes.

Estimated Navel bearing trees have declined steadily from the high of 3.16 million in 1996-97 and now total 1.2 million, down 7 percent from last season. Average fruit per tree is estimated to be 365 pieces, which is 24 percent less than the 2008-09 season. Current size measurements are below average and are projected to remain below average through harvest, requiring 137 pieces of fruit to fill a box. Loss from droppage is currently near the minimum of seasons used in the regressions and projected to be 10 percent at the end of the growing season. Harvest of Navel oranges has begun in limited quantities. Historically, the heaviest movement occurs during the months of November and December.

## Valencia Oranges 67.0 Million Boxes

The initial forecast of production of Valencia oranges is 67.0 million boxes, 14 percent below the previous season, and 23 percent below the 2007-08 season. This forecast is only 6 percent above the 63.4 million boxes produced in 2006-07 season, which followed the two most recent hurricane seasons.

There are an estimated 33.7 million bearing trees, down 2 percent from the previous season and 4 percent from the 2007-08 season. For the Valencia oranges, trees planted from 1986-95 account for 54 percent, while the youngest bearing trees (planted in 2004-06) account for only 6 percent of total bearing trees. Production areas containing the largest number of Valencia trees are the Southern with 12.3 million ( 37 percent) followed by the Central with 9.3 million ( 28 percent).

The average number of fruit per tree, estimated to be 478, is down 17 percent from last season and 115 pieces of fruit less than the average of the 8 seasons used in the regressions.
Current size measurements are very close to average and projected to remain about average through harvest, requiring 207 pieces of fruit to fill a box. This compares to 219 last season and an average of 206 over the eight previous non-hurricane seasons. Current droppage is below 7 of those 8 seasons and is forecast to be 13 percent, which is below the average.

## Orange Production and Prorated Forecast, by Production Area - Florida: 2008-2009 and 2009-2010

[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 <br> Area | 2008-2009 Production |  | 2009-2010 Forecast |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Non-Valencia | Valencia | Non-Valencia | Valencia |
|  | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ |
| Indian River | 4,300 | 5,400 | 2,500 | 4,500 |
| Southern | 19,300 | 26,600 | 16,900 | 20,200 |
| Other | 61,000 | 45,800 | 49,600 | 42,300 |
| Florida Total | 84,600 | 77,800 | 69,000 | 67,000 |

## Tangelos 1.0 Million Boxes

The tangelo forecast of 1.0 million boxes is 13 percent less than last season's 1.15 million boxes and, if realized, would tie the recent low of 2003-04. Bearing trees are down nearly 2 percent and are estimated to be 647 thousand. Estimated fruit per tree is 525 pieces, down 30 percent from last season and the lowest since 2003-04. With fruit sizes below average, it will take 260 pieces of fruit to fill a box. Droppage is projected to be below average at harvest.

| Type | 1,000 boxes |
| :---: | :---: |
| Non-Valencia Oranges | 1,000 |
| Valencia Oranges | 500 |
| White Grapefruit | 200 |
| Colored Grapefruit | 500 |
| Tangelos | 100 |
| Tangerines | 300 |

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 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Early-midseason |  | Valencia |  |
|  | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 |
| (percent) |  | (percent) | (percent) | (percent) |
| Indian River | 5 | 4 | 7 | 7 |
| Northern | 7 | 7 | 3 | 3 |
| Central | 29 | 32 | 30 | 35 |
| Western | 33 | 33 | 24 | 25 |
| Southern | 26 | 24 | 36 | 30 |
| 3-5 years | 3 | 3 | 3 | 3 |
| 6-8 years | 7 | 7 | 7 | 6 |
| 9-13 years | 11 | 10 | 16 | 15 |
| 14-23 years | 54 | 53 | 55 | 55 |
| 24 yrs \& over | 25 | 27 | 19 | 21 |
| Areas and age groups | Seedless Grapefruit |  |  |  |
|  | White |  | Colored |  |
|  | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 |
|  | (percent) | (percent) | (percent) | (percent) |
| Indian River | 72 | 74 | 64 | 71 |
| Northern | 1 | 1 | 4 | 2 |
| Central | 15 | 15 | 9 | 11 |
| Western | 2 | 2 | 4 | 3 |
| Southern | 10 | 8 | 19 | 13 |
| 3-5 years | 1 | (Z) | 3 | 3 |
| 6-8 years | 3 | 2 | 3 | 3 |
| 9-13 years | 7 | 7 | 4 | 4 |
| 14-23 years | 47 | 47 | 52 | 50 |
| 24 yrs \& over | 42 | 44 | 38 | 40 |

$(Z)$ Less than half of the unit shown.

Citrus Unadjusted Maturity Tests — Florida: 2008-2009 and 2009-2010
[Averages of regular bloom fruit from sample groves. Juice and solids per box are unadjusted and not comparable to juice processing plant test results. 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. The beam settings are also identical to past tests and no restrictors are used]

| Fruit type (number of groves) test date | Acid |  | Solids (Brix) |  | Ratio |  | Unfinished juice per box |  | Solids per box |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 | 2008-2009 | 2009-2010 |
|  | (percent) | (percent) | (percent) | (percent) | (percent) | (percent) | (pounds) | (pounds) | (pounds) | (pounds) |
| ORANGES |  |  |  |  |  |  |  |  |  |  |
| Early (120-120) |  |  |  |  |  |  |  |  |  |  |
| Sep 1 | 1.45 | 1.54 | 9.25 | 9.25 | 6.51 | 6.11 | 46.91 | 42.04 | 4.34 | 3.89 |
| Oct 1 | 1.07 | 1.14 | 9.63 | 9.31 | 9.14 | 8.34 | 48.90 | 46.11 | 4.71 | 4.29 |
| Mid (55-55) |  |  |  |  |  |  |  |  |  |  |
| Sep 1 | 1.66 | 1.72 | 9.00 | 9.23 | 5.49 | 5.45 | 45.09 | 42.79 | 4.06 | 3.95 |
| Oct 1 | 1.29 | 1.31 | 9.41 | 9.24 | 7.47 | 7.23 | 50.76 | 47.16 | 4.78 | 4.36 |
| Late (150-150) |  |  |  |  |  |  |  |  |  |  |
| Sep 1 | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) | (NA) |
| Oct 1 | 2.48 | 2.41 | 8.86 | 8.86 | 3.62 | 3.73 | 47.40 | 43.46 | 4.20 | 3.85 |
| GRAPEFRUIT |  |  |  |  |  |  |  |  |  |  |
| White Seedless (49-50) |  |  |  |  |  |  |  |  |  |  |
| Sep 1 | 1.70 | 1.75 | 9.53 | 9.79 | 5.61 | 5.60 | 30.92 | 31.48 | 2.95 | 3.08 |
| Oct 1 | 1.59 | 1.53 | 10.03 | 9.76 | 6.36 | 6.39 | 36.57 | 36.53 | 3.67 | 3.56 |
| Colored Seedless (50-50) |  |  |  |  |  |  |  |  |  |  |
| Sep 1 | 1.70 | 1.75 | 9.79 | 10.06 | 5.80 | 5.78 | 32.52 | 31.49 | 3.18 | 3.17 |
| Oct 1 | 1.53 | 1.54 | 10.12 | 10.23 | 6.64 | 6.69 | 36.77 | 36.60 | 3.72 | 3.74 |

(NA) Not available.

Orange Unadjusted Maturity Tests, by Variety — Florida:
October 1, 2001 through 2009
[Averages of regular bloom fruit from sample groves]

| Orange <br> variety | Groves <br> sampled | Acid | Solids <br> (Brix) | Ratio | Unfinished <br> juice per <br> box | Solids <br> per box |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (number) |  |  |  |  |  | (percent) | | (percent) |
| :---: |

## Maturity

Regular bloom fruit samples were collected September 21-22 and tested at the laboratory of the National Agricultural Statistics Service (NASS), Florida Field Office.

Sample size for all types has remained relatively constant for the past several seasons. The orange sample size is 325, collected from 120 early, 55 midseason, and 150 Valencia (late) groves. The grapefruit sample size is 100 , evenly divided between white and colored groves.

Samples are selected from groves on routes in all five major citrus producing areas in the State. Early and midseason oranges were tested in September and October. The first test of Valencia oranges was in October.

Acid levels for early and midseason oranges are higher than last season but the Brix is lower than the previous 4 seasons, resulting in lower ratios than last year. Acid levels for Valencia oranges are lower than any of the past 5 seasons but the Brix is equal to last season at this time. The Valencia orange ratio of 3.73 is higher than any of the past 5 seasons.

Juice levels and solids per box are below the average of the previous 8 seasons on all varieties.
Several fresh fruit packers and four processing plants opened during the month of September. Varieties being shipped include Ambersweet and Navel oranges.

Citrus Fruit Maturity Test Averages, by Areas — Florida: October 1, 2009

| Fruit type | Groves sampled | Acid | Solids (Brix) | Ratio | Unfinished juice per box | Solids per box |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (number) | (percent) | (percent) |  | (pounds) | (pounds) |
| ORANGES |  |  |  |  |  |  |
| Early |  |  |  |  |  |  |
| Indian River | 9 | 1.19 | 9.52 | 8.07 | 48.67 | 4.64 |
| Other Areas | 111 | 1.14 | 9.30 | 8.36 | 45.90 | 4.26 |
| Midseason |  |  |  |  |  |  |
| Indian River | 11 | 1.43 | 9.37 | 6.69 | 47.12 | 4.42 |
| Other Areas | 44 | 1.27 | 9.20 | 7.36 | 47.17 | 4.34 |
| Late |  |  |  |  |  |  |
| Indian River | 27 | 2.56 | 9.00 | 3.54 | 44.58 | 4.01 |
| Other Areas | 123 | 2.37 | 8.83 | 3.77 | 43.21 | 3.81 |
| GRAPEFRUIT |  |  |  |  |  |  |
| White Seedless |  |  |  |  |  |  |
| Indian River | 38 | 1.56 | 9.88 | 6.35 | 37.04 | 3.66 |
| Other Areas | 12 | 1.45 | 9.35 | 6.50 | 34.90 | 3.27 |
| Colored Seedless |  |  |  |  |  |  |
| Indian River | 40 | 1.55 | 10.27 | 6.66 | 36.72 | 3.77 |
| Other Areas | 10 | 1.49 | 10.08 | 6.83 | 36.12 | 3.64 |

## All Grapefruit 19.8 Million Boxes

The forecast of grapefruit production is 19.8 million boxes. If attained, this will be 9 percent less than the 21.7 million boxes produced last season. Other than the hurricane-affected seasons of 2004-05 and 2005-06, this forecast would be the lowest crop since the 22.3 million boxes in the 1944-45 season. The total is comprised of 5.8 million boxes of white grapefruit and 14.0 million boxes of colored grapefruit.

## Citrus Production by Type and State - United States: 2006-2007, 2007-2008, 2008-2009, and Forecasted October 1, 2009

| Crop and State | Production |  |  | Forecast |
| :---: | :---: | :---: | :---: | :---: |
|  | $2006-2007$ | $2007-2008$ | $2008-2009$ | $2009-2010$ |
| $(1,000$ boxes $)$ |  |  |  |  |
| $(1,000$ boxes $)$ | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ |  |  |

GRAPEFRUIT

| Florida-All | 27,200 | 26,600 | 21,700 | 19,800 |
| :---: | :---: | :---: | :---: | :---: |
| White | 9,300 | 9,000 | 6,600 | 5,800 |
| Colored | 17,900 | 17,600 | 15,100 | 14,000 |
| California | 5,500 | 5,200 | 5,600 | 4,700 |
| Texas | 7,100 | 6,000 | 5,500 | 5,300 |
| Arizona ${ }^{1}$ | 100 | 100 | 25 |  |
| United States | 39,900 | 37,900 | 32,825 | 29,800 |
| LEMONS |  |  |  |  |
| California | 18,500 | 14,800 | 22,000 | 20,000 |
| Arizona | 2,500 | 1,500 | 3,000 | 2,500 |
| United States | 21,000 | 16,300 | 25,000 | 22,500 |
| TANGELOS |  |  |  |  |
| Florida | 1,250 | 1,500 | 1,150 | 1,000 |
| TANGERINES |  |  |  |  |
| Florida-All | 4,600 | 5,500 | 3,850 | 4,900 |
| Early ${ }^{2}$ | 2,400 | 2,600 | 2,550 | 2,600 |
| Honey | 2,200 | 2,900 | 1,300 | 2,300 |
| California ${ }^{3}$ | 3,500 | 6,700 | 6,700 | 7,000 |
| Arizona ${ }^{3}$ | 300 | 400 | 250 | 350 |
| United States | 8,400 | 12,600 | 10,800 | 12,250 |

${ }^{1}$ Estimates discontinued beginning with the 2009-2010 crop year.
${ }^{2}$ Fallglo and Sunburst varieties.
${ }^{3}$ Includes tangelos and tangors.
The white grapefruit forecast of 5.8 million boxes is 12 percent less than the 2008-09 season. The number of bearing trees continued the steady decrease that began in the late 1990s. The average fruit per tree increased 6 percent from last season to 430, but remained below the average of the years used in the regressions. Size and drop are both expected to be below average at

## Grapefruit Production and Prorated Forecast, by Production

## Area - Florida: 2008-2009 and 2009-2010

[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 <br> Area | 2008-2009 Production |  | 2009-2010 Forecast |  |
| :--- | ---: | ---: | ---: | ---: |
|  | White | Colored | White | Colored |
|  | (1,000 boxes) | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ | $(1,000$ boxes $)$ |
| Indian River | 4,500 | 10,100 | 4,300 | 9,900 |
| Southern | 500 | 2,100 | 500 | 1,900 |
| Other | 1,600 | 2,900 | 1,000 | 2,200 |
| Florida Total | 6,600 | 15,100 | 5,800 | 14,000 |

harvest.
The colored grapefruit forecast of 14.0 million boxes is 7 percent less than last season's 15.1 million boxes. Tree numbers continued the decline that began in the 1996-97 season. The average fruit per tree decreased 4 percent from last season to 410 , lower than 7 of the 8 years used in the regressions. Colored grapefruit size and drop are both expected to be slightly below average at harvest.

Grapefruit Forecast Components, by Variety — Florida: October 2009
[January data is considered final]

| Type | Bearing <br> trees | Fruit <br> per <br> tree | Droppage | Fruit <br> per <br> box |
| :--- | :---: | :---: | :---: | :---: |
| $(1,000$ trees) |  |  |  |  | | (number) |
| :--- |

## All Tangerines 4.9 Million Boxes

The forecast of all tangerines is 4.9 million boxes, 27 percent more than last season's production. The total is made up of 2.6 million boxes of the early varieties (Fallglo and Sunburst) and 2.3 million boxes of the late maturing Honey variety. All tangerine bearing trees are estimated to be 2.1 million, down 5 percent from last season.

Record production for the varieties included in the early category is 4.2 million boxes in 2001-02. Production of the early varieties has been below 3.0 million boxes the past 5 seasons.

The Fallglo tangerine forecast of 650,000 boxes is 5 percent higher than last season's final production. The number of bearing trees is down 2 percent from the previous season. Fruit per tree, estimated to be 848 pieces, is well above the average of the seasons used in the regressions. Both fruit size and droppage are projected below average.
The Sunburst tangerine forecast of 1.95 million boxes is 1 percent higher than last season. Fruit per tree, estimated to be 884 pieces, is well above 7 of the 8 seasons used in the regressions. Fruit size is expected to be below average while droppage is expected to be near the maximum.
The Honey tangerines forecast of 2.3 million boxes is nearly 77 percent higher than last season. Fruit per tree increased 62 percent to 1,059 pieces and is the primary reason for the increased production forecast. Estimated bearing trees are down nearly 8 percent from last season. Severe weather events last season warranted a special tree inventory and increased quality control measures were implemented during this season's limb count survey. Projected size and droppage at harvest are expected to be below average.

## Forecast Procedures for the 2009-2010 Season

All citrus forecasts are based on actual fruit counts and measurements. The objective count methods uses three 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 and loss from the fruit measurement and drop surveys.
These measurements are used in the forecast models, which use data from the 1998-99 through 2008-09 seasons, excluding the hurricane seasons of 2004-05 and 2005-06.

The latest tree inventory is used to determine estimated tree numbers. All trees planted in 2006 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.
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.
Fruit size and loss surveys were conducted in August and September. Results of these surveys are used in the models to project the fruit size at harvest and the fruit population expected to be available for harvest.

The chart below compares the fruit size measurements of early and midseason oranges taken in September 2009 with those taken in September 2008. The diameter measurements shown are the minimum values of each $1 / 8$-inch range, except for the smallest values.

Fruit Size Frequency Measurements, Early and Midseason Oranges, by Diameter - Florida: September
[Excludes Navels and Temples]

## Diameter <br> (Inches)



Size frequency distributions developed from the September size survey are shown in the following table. The distributions are by percent of fruit falling within the size range of each $4 / 5$-bushel container. These frequency distributions relate to fruit from regular bloom and exclude summer bloom in all years.

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

| Type and number of fruit per <br> $4 / 5$-bushel containers | 2007 | 2008 | 2009 |
| :--- | :---: | :---: | :---: |
| (percent) |  |  |  | (percent) $\quad$ (percent)

EARLY AND MIDSEASON ORANGES ${ }^{1}$

| 64 or less | - | 0.3 | 0.1 |
| :---: | :---: | :---: | :---: |
| 80 | 0.8 | 1.8 | 1.2 |
| 100 | 7.1 | 11.7 | 11.4 |
| 125 | 20.8 | 31.6 | 30.1 |
| 163 or more | 71.3 | 54.6 | 57.2 |
| NAVEL ORANGES |  |  |  |
| 64 or less | 15.2 | 16.6 | 14.2 |
| 80 | 27.5 | 29.5 | 30.5 |
| 100 | 34.4 | 37.1 | 36.4 |
| 125 | 16.1 | 12.3 | 14.0 |
| 163 or more | 6.8 | 4.5 | 4.9 |
| VALENCIA ORANGES |  |  |  |
| 64 or less | - | - | - |
| 80 | 0.7 | 1.4 | 0.7 |
| 100 | 5.9 | 12.7 | 8.5 |
| 125 | 19.8 | 34.5 | 27.4 |
| 163 or more | 73.6 | 51.4 | 63.4 |
| WHITE SEEDLESS GRAPEFRUIT |  |  |  |
| 32 or less | 0.3 | 3.7 | 2.7 |
| 36 | 2.8 | 11.6 | 5.2 |
| 40 | 4.8 | 15.7 | 8.6 |
| 48 | 11.1 | 20.5 | 18.4 |
| 56 | 12.5 | 14.4 | 16.3 |
| 63 or more | 68.5 | 34.1 | 48.8 |
| COLORED SEEDLESS GRAPEFRUIT |  |  |  |
| 32 or less | 0.3 | 2.6 | 0.6 |
| 36 | 1.4 | 5.1 | 2.7 |
| 40 | 3.1 | 10.5 | 5.7 |
| 48 | 7.5 | 17.1 | 9.6 |
| 56 | 10.1 | 14.7 | 11.7 |
| 63 or more | 77.6 | 50.0 | 69.7 |
| FALLGLO TANGERINES |  |  |  |
| 80 or less | 5.0 | 37.5 | 2.5 |
| 100 | 17.0 | 32.5 | 30.0 |
| 120 | 32.0 | 16.2 | 22.5 |
| 176 | 21.0 | 5.0 | 17.5 |
| 210 or more | 25.0 | 8.8 | 27.5 |
| SUNBURST TANGERINES |  |  |  |
| 100 or less | 0.9 | 2.2 | 0.3 |
| 120 | 3.9 | 7.2 | 2.2 |
| 176 | 4.3 | 10.6 | 8.3 |
| 210 or more | 90.9 | 80.0 | 89.2 |
| TANGELOS |  |  |  |
| 80 or less | - | 3.0 | 0.6 |
| 100 | 5.2 | 10.6 | 6.6 |
| 120 | 12.7 | 24.8 | 20.4 |
| 156 or more | 82.1 | 61.6 | 72.4 |

- Represents 0.
${ }^{1}$ Excludes Navels and Temples.

