Florida Citrus Production Projections and Consumption Scenarios 2014-15 Through 2022-23

Economic and Market Research Department

Florida Department of Citrus

Presented to Florida Citrus Commission

March 20, 2013

MISSION: Maximize consumer demand for Florida citrus products to ensure the sustainability and economic well-being of the Florida citrus grower, the citrus industry and the State of Florida.

TAKE ON THE DAY™

Florida Citrus Production Projections and Consumption Scenarios 2014-15 Through 2022-23

Prepared by:
Matthew J. Salois
Economic and Market Research Department
Florida Department of Citrus
Gainesville, Florida

Presented to:
Florida Citrus Commission
Economic and Market Research Committee

March 20, 2013

Working Paper 2013-2

EMRD Working Papers are generally speeches and research reports to the Florida Citrus Commission and other industry organizations. The content focuses on research results and industry implications. Technical details of the analytical models are presented in other professional and EMRD publication outlets.

ECONOMIC AND MARKET RESEARCH DEPARTMENT

FLORIDA DEPARTMENT OF CITRUS

Web Site: fdocgrower.com

Bartow Office:
605 East Main Street
P.O. Box 9010
Bartow, Florida 33831-9010 USA

Telephone: 863-537-3957
FAX: 877-352-2487

Gainesville Office:
2125 McCarty Hall
P.O. Box 110249
University of Florida
Gainesville, Florida 32611-0249 USA

Telephone: 352-392-1874
FAX: 352-392-8634
E-Mail: msalois@ufl.edu

Table of Contents

Florida Citrus Production Projections and Consumption Scenarios: 2014-15 Through 2022-23

Introduction

This report provides production projections and consumption scenarios for Florida round oranges, grapefruit and specialty citrus for the 2014-15 through 2022-23 seasons. The production projections are based on the Florida Agricultural Statistics Service (FASS) commercial citrus inventory released in September, 2012. The inventory reports number of trees and acres, by age, for different varieties of citrus. These data are combined with FASS yield data on boxes of fruit per tree, by age, to estimate yields per acre. Future production is projected by applying average yields to projected acreage, by age. Both production and consumption in upcoming years will depend on a number of factors difficult to predict. For production, important assumptions are made on acre-loss rates, planting rates, and yields per acre. Consumption scenarios are based on a given production projection and are calculated to provide insight on potential impacts to presumed consumption and on-tree values from a specified production level. Many factors other than supply affect price and consumption, and so a range of alternative scenarios are offered with respect to different rates of market growth.

The projections in this report are intended to indicate possible future trends in production and consumption as opposed to actual production or consumption in any given season. The same average yields, by age, are used in estimating production levels in each season to obtain the projection (many factors determine yields in a given season, and this analysis does not attempt to estimate season-specific yields). Yields, however, can vary significantly from year to year (e.g., for oranges, the 95% confidence interval is about +/- 20% around the trend based on yield variation alone). Hence, for each of the upcoming seasons considered, actual yields could be

significantly different than the average yields used here, with the result that the season's production projection in this report may be significantly different than the actual production that occurs. Given this issue, production projections are not provided for the upcoming 2013-14 season. The first forecasts for 2013-14 will be made in October, 2013, by the USDA, FASS. Results from the consumption scenarios are based on an economic model of supply and demand, the details of which are available in Salois et al. (2012). Both flat (0%) and modest growth (1%) are used in the consumption scenarios to indicate a range of possibilities.

The citrus industry in Florida, as well as a number of other citrus-growing regions in the world, including Brazil, have been struggling with the citrus disease Huanglongbing (HLB) or greening. This disease eventually kills citrus trees and has the potential to devastate the Florida citrus industry. Infection rates of HLB vary significantly across regions in Florida with near 100% infection in some areas and relatively little infection in other areas. An industry estimate of the statewide incidence of HLB in 2009 was 8% to 9%, but the current incidence could be higher, around 18% (http://www.irchlb.org/hlb.aspx). Major research on HLB is ongoing, and grower practices are evolving as more is learned about the disease. The ultimate goal is to develop disease-resistant trees, but it is assumed in this report that fully achieving this goal, including supplying resistant trees to growers and having a significant impact on production, will not occur over the ten-year projection period considered here. Nevertheless, uncertainty exists on HLBs impact over the projection period, and it remains an important factor in the scenarios in this report.

2012 Commercial Citrus Inventory Overview

The 2012 *Commercial Citrus Inventory* shows that Florida's total citrus acreage decreased by 1.8% from 541.3 thousand acres in 2011 to 531.5 thousand acres in 2012 (Table 1). Similarly,

the number of citrus trees decreased by 1.5% from 70.6 million in 2011 to 69.6 million in 2012. Tree density increased from 130.5 trees per acre in 2011 to 130.9 trees per acre in 2012. Acreage and tree inventory data for individual varieties of citrus – round oranges, grapefruit, and specialty citrus – are shown in Tables 2, 3, and 4, respectively. Tree density by tree age group and variety are shown in Figures 1 and 2 for oranges and in Figures 3 and 4 for grapefruit.

The FASS commercial citrus inventory indicates that the population of bearing and nonbearing round-orange trees decreased by 1.4% from 62.5 million trees in 2011 to 61.6 million trees in 2012 (Table 5). As indicated in Table 5, the orange tree population continues to become relatively mature with over 63% of the tree population having an average age over 14 years. The orange tree population may continue to mature in upcoming years, depending on planting levels and loss rates across tree ages.

The total number of bearing and nonbearing grapefruit trees decreased by 1.4% from 5.35 million trees in 2011 to 5.27 million trees in 2012 (Table 6). The grapefruit tree population is also relatively mature, as indicated in Table 6, with over 77% of the trees having an average age over 14 years. The age distribution for grapefruit trees by variety and region (Indian River versus Interior) is shown in Table 7.

The 2012 tree inventory indicates that the number of specialty citrus (tangelos and tangerines) acres and trees decreased by 4.5% and 4.1%, respectively, from 2011 to 2012. Like oranges and grapefruit, the specialty tree population continues to mature with over 80% of the trees having an average age over 14 years.

Methodology and Assumptions

The production forecasts discussed in this report are based on projecting the acreage in 25 tree-age categories for the upcoming ten seasons, by variety. Projections are reported for oranges, grapefruit, and specialty citrus. These projections are based on separate estimates for early and midseason oranges, late oranges, white seedless grapefruit (including a small amount of seedy grapefruit), red and pink seedless grapefruit, tangelos, and tangerines. Assumed annual acreage loss and planting rates are used to project citrus acreage from year to year, and average yields per acre by tree age are applied to the projected acreage to obtain production projections. Yields by age of tree are not reported for specialty citrus (tangelos and tangerines), and so average acreage yields were used to project production in this case.

The orange production projections are made in context of a supply and demand model described in the study by Salois et al. (2012). Key supply assumptions made in applying these models in the present analysis are discussed in the next three sections. The demands underlying the models are largely held constant at 0% growth rate. Alternative consumption scenarios are provided with a modest 1% growth rate in consumption in orange and grapefruit juice as well as fresh grapefruit. See the Salois et al. (2012) study for a more complete discussion of the orange and grapefruit models and other assumptions.

Yield Assumptions

The production estimates were made by multiplying the projected number of acres in each specific age category by the yield or number of boxes per acre for that age category and summing the results across age categories. Average yields over the 2009-10 through 2011-12 period were assumed for all projections. Yields per acre were assumed to more fully reflect the impact of increasing tree densities than yields per tree. The estimated acre yields for the younger age

categories capture, to an extent, the impact of increasing tree densities, as these age categories have experienced increasing densities over the years underlying the estimates. Older-age-category acre yields are assumed to be constrained by the limited space in which trees must compete for sunshine, water and nutrients in the soil. Historical acre yields for the older age categories are assumed to reflect the yield potential for these age categories in upcoming years. A history of tree yields reported by FASS are shown in Tables 11 and 12. Average tree yields by tree age by variety are given in Figures 5 and 6 for oranges and in Figures 7 and 8 for grapefruit.

Planting Assumptions

Production projections are dependent upon assumed future acreage-planting rates. Average planting levels by variety, based on the commercial citrus inventories, are shown in Table 9. Significant declines in planting levels have occurred in recent years with the destruction of nursery trees exposed to citrus canker, re-establishment of the nursery industry in screen houses, and the risk of planting in an HLB environment. In past reports, citrus prices have been important factors in projecting planting levels, but recently the risk of losing new plantings to HLB appears to have become a primary factor underlying many grower planting decisions. Therefore, the planting assumptions for the scenarios considered here are not directly linked to prices. Higher prices, though, can be expected with lower production resulting from HLB (demand constant), supporting the higher planting assumptions made. Three planting scenarios are considered in this report. The first scenario assumes the planting level will be half the replacement level (the number of trees lost). This assumption roughly corresponds to the average planting level in recent years. The second and third scenarios assume planting levels are higher at three-fourths and 125% of the replacement level, respectively. It is assumed nurseries will be able to supply the trees required, although the current number of nursery trees in inventory may not be sufficient to accommodate

some of the high-planting scenarios in the immediate upcoming years. These scenarios, thus, require that nurseries respond relatively quickly to grower demand for trees.

Tree/Acre-Loss Assumptions

Acreage and tree loss rates have declined since the high loss rates that occurred during the first half of the 2000s (Table 10). Major factors underlying the high loss rates included diseases, the canker eradication program, the hurricanes that struck the citrus-growing regions of Florida during that period, and alternative land uses and real estate development. Three orange loss-rate assumptions are considered here: 1) future loss rates are relatively moderate as occurred in the last few years, 2) loss rates are 50% higher than the recent rates, and 3) loss rates are double recent rates. The different assumptions are intended to account for loss-rate uncertainty, given the situation with HLB and other diseases. Loss rates are assumed to be lowest for young trees, highest for middle-age trees and more moderate for older trees as indicated in the footnotes of the tables showing the projections. Figures 9 and 10 show the average planting rates and loss rates for Florida oranges and Indian River grapefruit, respectively. Clearly, tree losses have exceeded tree plantings since 2000 for oranges and even earlier for grapefruit.

Production Projections and Consumption Scenarios

Given the different assumptions on magnitudes of planting and loss rates, nine different scenarios for projecting future production can be defined. These scenarios are summarized in Table 13, along with a description of the key model input parameters. The current situation, or the status quo, is best represented by the upper-left scenario defined as the low/base planting scenario with low/base losses. Alternatively, a worst-case scenario can be defined as one with low planting and high losses (lower-left) and a best case scenario can defined as one with high planting and low losses (upper-right). The remaining scenarios represent a range of in-between possibilities.

The orange and grapefruit production projections are shown in Tables 14 and 15, respectively. The table footnotes describe the assumptions. The scenario with low losses and low plantings (far left column) is the scenario that is most representative of the current situation. As seen, if re-plantings remain at half the replacement, as they have been, total production is on a steady declining trend. Although increasing the planting rate to 75% replacement dampens the decline, the downward trend remains. Only when the planting rate exceeds the loss rate is production growth realized. Moreover, given the time lapse for new trees to become productive, if the planting rate were to become 125% of replacement, production still declines even in the near-term. The higher loss rate scenarios are provided to account for the uncertainty surrounding tree mortality, and indicate the possibility of more severe production declines. Projections for specialty citrus, under the assumption of average losses and planting levels, are shown in Table 16. The projections for specialty citrus are similar to those for oranges and grapefruit.

Scenarios for U.S. presumed consumption of orange juice and grapefruit juice, as well as on-tree values, are shown in Tables 17 and 18, respectively. The table footnotes describe the assumptions. The status quo production projection of low losses and low planting is shown under conditions of a flat market (scenario 1) and a modest growth market (scenario 2). The ideal situation is depicted in scenario 3 which is defined at low losses, high plantings, and modest growth. Patterns in the different consumption scenarios are very similar between oranges and grapefruit and so discussion focuses on the orange situation. In the first scenario on Table 17, both on-tree prices and total on-tree revenue is increasing, reflecting the decreasing supply situation. This is also reflected in the declining presumed consumption level which is concurrent with the increase in price. The second scenario is the same as the first except now the demand for orange juice is assumed to grow at 1%. Both the on-tree price and total on-tree revenue is seen to increase

and be higher than compared to the flat growth scenario. Moreover, presumed consumption is first seen on a downward trend, which is consistent with a dominant price effect in which demand falls at high prices. Lastly, the third scenario envisions market growth in the context of low tree losses and high tree plantings. Although on-tree prices are moderately lower than in the second scenario, total on-tree revenue between scenario 2 and scenario 3 are much closer (albeit slightly lower in scenario 3). In other words, the lower on-tree prices resulting from the high planting rate are offset to some extent by the total number of boxes. Moreover, presumed consumption is first seen on a downward trend and then begins to increase midway through the projection horizon. The increase in presumed consumption is consistent with the demand growth effect dominating the price effect. Overall, scenario 3 represents the ideal situation in which supply is increasing and demand is growing at a modest rate.

Conclusions

Based on this report's production projections, Florida orange, grapefruit, and specialty production is expected to be moderately declining over the next ten years under average yields and recent rates of tree loss and new plantings. On-tree prices and total on-tree revenue is anticipated to be on an increasing trend, reflecting the tighter supply situation. In this case, presumed consumption is expected to continue to decline in light of increasing prices.

As such, the overall long-run outlook of the Florida citrus industry continues to remain in a precarious state. The persistent trend of tree mortality rates exceeding tree planting rates sets a downward course for production levels. Although high on-tree prices can be achieved in the near-term, in the long-run the industry risks losing relevance and economic impact. Long-run

sustainability, relevance, and impact can be realized with reduced tree mortality, new tree plantings, and modest market growth.

Reduced mortality involves sustained efforts to control the psyllid; the application of current/future research to maintain tree health & HLB resistance. Increased plantings will be influenced by on-tree prices high enough to attract investment and an expectation that trees will survive to generate returns over time. Market growth will depend on effective marketing programs by the FDOC and the brands to maintain and grow the market for Florida citrus.

REFERENCES

Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, Various Issues.

Salois MJ, Jauregui CE, Brown MG. 2012. An Economic Model of Long-Run Supply and Demand Forecasts for Florida Round Oranges. Proceedings of the Florida State Horticultural Society, 125: C24.

TABLES

Table 1. Florida citrus acreage and tree numbers by commercial inventory.

Year of Inventory	Number of Acres	Percent Change from Previous Acre Inventory	Number of Trees	Percent Change from Previous Tree Inventory	Tree Density
	- thousand -	- % -	- million -	- % -	- trees/acre -
1968	931.2	8.5	74.4	12.0	79.9
1970	941.5	1.1	76.7	3.1	81.5
1972	878.0	-6.7	72.1	-6.0	82.1
1974	864.1	-1.6	71.3	-1.1	82.5
1976	852.4	-1.4	70.5	-1.1	82.7
1978	831.2	-2.5	69.1	-2.0	83.1
1980	845.3	1.7	70.7	2.3	83.6
1982	847.9	8.5	71.6	1.3	84.4
1984	761.4	-10.2	66.0	-7.8	86.7
1986	624.5	-18.0	57.5	-12.9	92.1
1988	697.9	11.8	69.3	20.5	99.3
1990	732.8	5.0	78.9	13.9	107.7
1992	791.3	8.0	92.0	16.6	116.3
1994	853.7	7.9	103.7	12.7	121.5
1996	857.7	0.5	107.1	3.2	124.9
1998	845.3	-1.4	107.1	NC	126.7
2000	832.3	-1.5	106.7	-0.4	128.2
2002	797.3	-4.2	103.2	-3.3	129.4
2004	748.6	-6.1	97.9	-5.1	130.8
2006	621.4	-17.0	81.9	-16.4	131.8
2008	576.6	-7.2	75.4	-8.0	130.7
2009	568.8	-1.3	74.1	-1.7	130.3
2010	554.0	-2.6	72.1	-2.6	130.3
2011	541.3	-2.3	70.6	-2.1	130.5
2012	531.5	-1.8	69.6	-1.5	130.9

SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 2. Florida round-orange acreage and tree numbers by commercial inventory.

Year of Inventory	Number of Acres	Percent Change from Previous Acre Inventory	Number of Trees	Percent Change from Previous Tree Inventory	Tree Density
	- thousand -	- % -	- million -	- % -	- trees/acre -
1970	715.8	0.3	57.8	2.1	80.7
1972	659.4	-7.9	53.7	-7.0	81.4
1974	642.4	-2.6	52.5	-2.3	81.7
1976	628.6	-2.1	51.6	-1.8	82.1
1978	616.0	-2.0	50.8	-1.5	82.5
1980	627.2	1.8	52.0	2.2	82.9
1982	636.9	1.5	53.5	2.9	84.0
1984	574.0	-9.9	49.9	-6.8	86.9
1986	466.3	-18.8	43.5	-12.9	93.3
1988	536.7	15.1	54.5	25.5	101.5
1990	564.8	5.2	62.6	14.9	110.8
1992	608.6	7.8	72.8	16.3	119.6
1994	653.4	7.4	81.6	12.1	124.9
1996	656.6	0.5	84.2	3.1	128.2
1998	658.4	0.3	85.4	1.5	129.8
2000	665.5	1.1	87.2	2.1	131.0
2002	648.8	-2.5	85.8	-1.7	132.2
2004	622.8	-4.0	83.0	-3.2	132.2
2006	529.2	-15.0	70.9	-14.6	133.9
2008[a]	496.5	-11.3	65.8	-7.2	132.5
2009[a]	492.5	-0.8	65.0	-1.2	132.0
2010[a]	483.4	-1.8	63.8	-1.9	131.9
2011[a]	473.4	-2.1	62.5	-2.0	132.2
2012[a]	464.9	-1.7	61.6	-1.4	132.6

[a] Includes Temples oranges; in prior years, Temple oranges included with specialty citrus.
SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 3. Florida grapefruit acreage and tree numbers by commercial inventory.

Year of Inventory	Number of Acres	Percent Change from Previous Acre Inventory	Number of Trees	Percent Change from Previous Tree Inventory	Tree Density
	- thousand -	- % -	- million -	- % -	- trees/acre -
1968	119.9	16.2	8.50	19.7	70.9
1970	124.1	3.5	8.92	4.9	71.9
1972	124.1	NC	9.01	0.9	72.6
1974	130.3	5.0	9.65	7.0	74.1
1976	137.9	5.8	10.40	7.8	75.4
1978	136.3	-1.2	10.41	1.3	76.4
1980	139.9	2.6	10.77	3.4	77.0
1982	139.9	NC	10.83	0.6	77.4
1984	134.7	-3.7	10.58	-2.3	78.5
1986	117.8	-12.5	9.62	-9.1	81.7
1988	119.6	1.5	10.08	4.7	84.3
1990	125.3	4.8	11.19	11.0	89.3
1992	135.2	7.9	13.12	17.2	97.0
1994	146.9	8.7	15.00	14.3	102.1
1996	144.4	-1.7	15.12	0.8	104.7
1998	132.8	-8.0	14.08	-6.9	106.0
2000	118.1	-2.6	12.67	-2.3	107.2
2002	105.5	-10.7	11.33	-10.6	107.4
2004	89.0	-15.6	9.75	-14.0	109.5
2006	63.4	-28.8	6.97	-28.5	109.9
2008	56.9	-10.3	6.24	-10.5	109.7
2009	53.9	-5.3	5.86	-6.1	108.8
2010	50.2	-6.9	5.45	-7.1	108.5
2011	49.0	-2.4	5.35	-1.8	109.2
2012	48.2	-1.6	5.27	-1.4	109.4

SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 4. Florida specialty citrus[a] acreage and tree numbers by commercial inventory.

Year of Inventory	Number of Acres	Percent Change from Previous Acre Inventory	Number of Trees	Percent Change from Previous Tree Inventory	Tree Density
	- acres -	- % -	- million -	- % -	- trees/acre -
1974	74,446	-3.4	7.0	-2.1	93.84
1976	67,485	-9.4	6.2	-10.9	92.24
1978	62,723	-7.1	5.8	-7.1	92.23
1980	60,360	-3.8	5.6	-3.9	92.07
1982	55,163	-8.6	5.1	-8.8	91.88
1984	34,619	-37.2	3.2	-37.7	91.17
1986	30,155	-12.9	2.9	-7.7	96.60
1988	30,284	0.4	3.0	4.1	100.09
1990	33,347	10.1	3.7	21.1	110.04
1992	37,507	12.5	4.6	24.0	121.36
1994	45,768	22.0	5.9	30.4	129.69
1996	50,950	11.3	7.0	17.1	136.40
1998	48,556	-4.7	6.7	-3.1	138.70
2000	45,355	-6.6	6.3	-6.4	139.00
2002	39,844	-12.2	5.6	-11.0	140.80
2004	33,547	-15.8	4.8	-15.0	142.14
2006	26,098	-22.2	3.7	-22.5	141.59
2008	22,920	-12.2	3.2	-12.3	141.37
2006[b]	23,556		3.4		144.42
2008[b]	20,780	-11.8	3.0	-11.9	144.24
2009[b]	20,233	-2.6	2.9	-3.0	143.64
2010[b]	18,340	-9.4	2.6	-9.8	143.00
2011[b]	17,510	-4.5	2.5	-4.3	143.40
2012[b]	16,725	-4.5	2.4	-4.1	144.05

[a] Temple oranges, tangelos and tangerines; fallglo tangerines not included prior to 1996.
[b] Excludes Temple oranges; beginning in 2008, Temple oranges included with round oranges.
SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 5. Age distribution of Florida round-orange trees by year of inventory.

Year of Inventory	Tree Age						Total Trees	Bearing Trees
	≤2	3-5	6-8	9-13	14-23	≥24		
	- - - - - - - - - - - - - - - - - - % -						- - - - thousand - - - -	
1970	9.1	20.6	17.6	14.8	13.4	24.4	57,801.5	49,404.2
1972	5.5	11.1	20.2	22.0	14.1	27.0	53,731.1	49,786.5
1974	4.0	5.9	16.9	27.8	16.9	28.4	52,521.7	49,466.9
1976	4.0	4.8	7.5	29.7	24.1	29.8	51,595.3	48,373.8
1978	5.2	4.5	4.7	23.4	31.5	30.6	50,843.2	47,454.5
1980	7.2	4.7	3.8	13.0	39.1	32.2	51,977.8	47,366.3
1982	12.0	5.1	3.7	7.2	40.2	31.8	53,504.7	46,078.5
1984	17.5	7.1	4.5	5.8	35.2	29.9	49,884.7	39,777.7
1986	20.0	12.4	6.1	7.1	28.7	25.7	43,461.4	32,708.0
1988	30.7	13.9	7.8	5.7	17.7	24.1	54,536.6	35,537.3
1990	35.1	14.3	10.7	6.7	10.0	23.3	62,613.4	40,666.0
1992	31.9	23.4	9.9	8.4	6.7	19.7	72,826.3	49,577.1
1994	24.4	24.6	16.7	11.0	6.5	16.9	81,614.4	61,707.7
1996	10.5	26.9	24.0	14.7	8.2	15.7	84,155.4	75,286.6
1998	8.0	15.5	26.7	23.0	11.5	15.3	85,430.6	78,586.5
2000	9.7	7.2	21.4	33.7	13.6	14.4	87,200.1	78,721.0
2002	9.5	8.6	9.3	37.0	22.5	13.1	85,751.1	77,595.9
2004	9.1	9.4	8.1	29.0	32.4	12.0	82,987.5	75,391.7
2006	6.9	9.4	10.1	17.1	44.9	11.5	70,849.4	65,954.4
2008[a]	6.1	8.2	10.1	13.3	49.7	12.5	65,775.3	61,740.6
2009[a]	6.6	7.6	9.3	14.7	48.8	13.1	64,992.7	60,752.9
2010[a]	6.6	6.7	9.7	14.6	48.6	13.8	63,776.7	59,560.8
2011[a]	7.0	6.5	8.0	16.2	46.3	16.0	62,528.9	58,160.4
2012[a]	6.8	7.1	7.4	15.5	42.9	20.2	61,640.1	57,460.4

[a] Includes Temple oranges.
SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 6. Age distribution of Florida grapefruit trees by year of inventory.

Year of Inventory	Tree Age						Total Trees	Bearing Trees
	≤2	3-5	6-8	9-13	14-23	≥24		
	- - - - - - - - - - - - - - - - - - % - - - - - - - - - - - - - - - - - -						- - - - - thousand - - - - -	
1970	15.1	21.7	4.2	3.9	14.1	41.1	8,925.4	6,746.5
1972	6.9	21.9	14.0	5.5	10.6	41.1	9,012.7	8,032.1
1974	11.5	8.2	25.1	7.6	8.1	39.4	9,647.2	8,362.6
1976	13.9	7.9	13.3	20.8	6.8	37.2	10,398.1	8,598.9
1978	8.5	13.8	6.8	28.9	7.1	34.9	10,412.5	8,969.7
1980	8.9	10.5	10.7	21.6	15.8	32.5	10,768.7	9,586.2
1982	7.5	7.4	12.8	12.6	29.1	30.6	10,833.2	9,753.9
1984	11.4	6.7	7.5	15.7	32.1	26.7	10,582.9	9,192.8
1986	9.7	7.8	7.9	17.0	35.7	22.0	9,624.0	8,367.7
1988	11.0	9.7	6.5	13.8	38.3	20.7	10,081.2	8,654.7
1990	21.8	6.2	8.0	9.1	31.4	23.5	11,193.2	8,748.5
1992	27.2	14.0	5.5	8.6	19.1	25.6	13,119.2	9,556.9
1994	23.3	21.3	7.6	8.3	16.0	23.5	15,004.0	11,514.1
1996	9.8	25.3	17.8	8.2	15.3	23.6	15,116.9	13,632.8
1998	4.3	16.7	24.6	13.8	14.8	25.8	14,079.1	13,469.6
2000	3.7	6.2	22.7	27.2	13.6	26.7	12,668.6	12,204.1
2002	4.1	4.7	9.7	38.3	16.7	26.5	11,329.2	10,869.7
2004	8.0	4.0	4.9	32.1	27.0	24.1	9,748.3	8,967.9
2006	6.1	5.9	3.8	18.5	41.8	23.8	6,971.4	6,543.2
2008	4.0	6.9	4.3	7.7	50.8	26.2	6,241.0	5,989.7
2009	3.9	6.3	4.8	6.4	49.8	28.8	5,861.0	5,633.8
2010	4.5	5.5	5.5	5.7	50.1	28.8	5,445.9	5,201.0
2011	5.9	4.4	5.4	6.2	48.3	29.8	5,349.6	5,036.4
2012	6.4	4.2	5.7	6.3	44.9	32.5	5,272.3	4,934.6

SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 7. Age distribution of Florida grapefruit trees by marketing district and variety.

District/Variety	Tree Age						Total Trees
	≤2	3-5	6-8	9-13	14-23	≥24	
	- - - - - - - - - - - - - - - - - - %[a] - - - - - - - - - - - - - - - -						- thousand -
Indian River							
White Seedless[b]	0.6	1.2	3.3	7.0	53.9	34.0	1,071
Red & Pink Seedless	8.3	3.5	7.4	5.8	34.8	40.2	2,792
TOTAL	6.2	2.9	6.2	6.1	40.1	38.5	3,863
Interior							
White Seedless[b]	1.4	3.7	2.9	5.5	49.9	36.4	317
Red & Pink Seedless	8.7	9.1	4.5	7.1	60.4	10.3	1,091
TOTAL	7.1	7.9	4.1	6.7	58.0	16.2	1,409

[a]Percentages may not total 100 due to rounding.
[b]Includes seedy grapefruit.
SOURCE: Florida Agricultural Statistics Service, *2012 Commercial Citrus Inventory*.

Table 8. Age distribution of Florida specialty citrus trees by variety.

Variety	Tree Age						Total Trees
	≤2	3-5	6-8	9-13	14-23	≥24	
	- % -						- thousand -
Tangelos	1.2	2.2	6.3	8.1	59.3	22.9	533.7
Tangerines	3.0	2.8	3.4	10.4	68.3	12.1	1,875.5
TOTAL	2.6	2.7	4.0	9.9	66.3	14.5	2,409.2

SOURCE: Florida Agricultural Statistics Service, *2012 Commercial Citrus Inventory*.

Table 9. Average annual citrus plantings by variety.[a]

Variety[c]	Annual Plantings[b]						
	1000 Trees						
	2004	2006	2008	2009	2010	2011	2012
ORANGES							
Early & Midseason	1,250	896	703	698	678	691	692
Late	1,272	762	642	715	727	765	701
TOTAL	2,522	1,632	1,345	1,413	1,405	1,456	1,393
GRAPEFRUIT							
Indian River							
White Seedless[d]	85	19	2	5	4	4	2
Red & Pink Seedless	144	102	53	37	44	70	77
Interior							
White Seedless[d]	7	4	2	3	2	2	1
Red & Pink Seedless	24	18	27	32	32	29	32
TOTAL	260	143	84	76	82	104	113
SPECIALTY							
Tangelos	32	10	4	2	2	1	2
Tangerines	39	20	22	14	13	14	19
TOTAL	79	32	26	16	15	15	21

[a] Based on various *Commercial Citrus Inventories*.
[b] Calculated as non-bearing trees divided by 3.
[c] Orange trees and acres listed as "unidentified" by the FASS were allocated between orange varieties in the same proportions as the identified proportions in calculating the averages. Grapefruit trees and acres listed as "unidentified" by the FASS were allocated between grapefruit varieties in the same proportions as the identified proportions in calculating the averages.
[d] Includes seedy.

Table 10. Historical citrus tree- and acreage-loss rates by variety.[a]

Variety	98-00	00-02	02-04	04-06	06-08	08-09	09-10	10-11	11-12	12-13[b]
	- - - - - - - - - - - - - - - - - Annual Tree Loss Rate (%)[c] - - - - - - - - - - - - -									
ORANGES[d]	2.3	3.8	4.3	9.3	5.6	3.5	3.8	3.3	3.3	3.8
GRAPEFRUIT[e]										
Indian River	4.8	5.8	9.5	17.2	5.7	6.5	10.1	3.1	2.2	3.3
Interior	9.3	9.4	10.8	16.6	8.5	8.2	5.7	6.7	5.1	3.3
SPECIALTY[f]										
Tangelos	5.6	8.3	8.2	16.2	8.8	2.2	10.9	6.6	5.5	NA
Tangerines	5.6	6.6	9.6	10.8	6.5	3.6	10.9	4.7	5.3	NA
	- - - - - - - - - - - - - - - - - Annual Acre Loss Rate (%)[b] - - - - - - - - - - - - -									
ORANGES[d]	2.7	4.2	4.8	9.7	5.2	3.1	3.7	3.5	3.6	NA
GRAPEFRUIT[e]										
Indian River	5.5	6.1	10.2	17.4	5.3	5.7	9.5	3.0	2.2	NA
Interior	9.6	8.8	11.7	16.2	8.9	7.7	5.7	6.7	5.1	NA
SPECIALTY[f]										
Tangelos	5.6	9.2	10.3	15.3	8.4	2.3	10.4	7.4	5.7	NA
Tangerines	5.5	6.7	9.8	10.6	6.4	3.1	10.5	4.9	5.9	NA

[a]Losses due to all factors.
[b]Based on the bearing trees reported in *Citrus October Forecast, Maturity Test Results and Fruit Size*, Florida Agricultural Statistics Service, October 11, 2012.
[c]Based on various *Commercial Citrus Inventories*.
[d]One loss rate for round oranges (early and midseason and late oranges) was estimated due to the unidentified (by variety) young round-orange trees.
[e]One loss rate for seedless grapefruit was estimated due to the unidentified (by variety) young grapefruit trees.
[f]Loss rates based on bearing trees or acres due to unidentified nonbearing specialty citrus.

Table 11. Average orange yields by age.

Season	Early and Midseason Oranges						Late Oranges					
	3-5	6-8	9-13	14-23	24+	wt avg[a]	3-5	6-8	9-13	14-23	24+	wt avg[a]
	- 1-3/5 bushel boxes per tree -											
1992-93	1.8	3.4	4.6	5.0	6.0	4.7	1.4	2.4	3.3	3.9	4.2	3.5
1993-94	1.4	3.2	3.8	4.5	5.2	4.1	1.0	2.0	2.7	3.5	4.0	3.1
1994-95	1.2	3.1	4.1	4.6	5.2	4.2	1.4	2.7	2.5	3.6	4.2	3.3
1995-96	1.3	2.9	3.8	4.1	4.9	3.8	1.2	2.0	2.5	3.2	4.0	2.9
1996-97	1.3	2.8	3.7	5.1	5.3	4.4	1.1	2.3	2.5	3.3	4.2	3.0
1997-98	1.3	2.7	3.8	4.8	5.3	4.2	1.1	2.2	2.6	3.8	4.9	3.4
1998-99	0.8	1.9	2.9	3.8	4.2	3.3	0.8	1.5	1.9	2.2	3.2	2.1
1999-00	0.9	2.1	3.4	4.7	5.2	4.0	0.9	1.7	2.4	3.1	4.5	2.9
2000-01	1.0	2.0	3.2	4.2	4.6	3.6	0.9	1.7	2.3	2.7	3.7	2.6
2001-02	1.4	1.8	3.0	4.2	5.2	3.7	0.9	1.7	2.4	2.8	4.5	2.7
2002-03	0.7	1.8	2.7	3.8	4.3	3.3	1.0	1.6	1.9	2.6	4.0	2.5
2003-04	1.8	1.9	3.2	4.1	5.3	3.7	1.7	2.1	2.5	3.0	5.1	3.0
2004-05	1.2	1.7	2.2	2.9	2.8	2.5	1.1	1.2	1.7	2.0	2.1	1.8
2005-06	1.8	1.8	2.0	2.8	3.7	2.7	0.8	1.8	1.8	2.1	3.0	2.1
2006-07	1.1	1.8	1.8	2.5	3.6	2.4	0.6	1.5	1.5	1.9	2.7	1.8
2007-08	0.8	1.9	2.5	3.4	4.8	3.1	0.7	2.1	2.5	2.5	4.1	2.6
2008-09	1.2	1.8	2.9	3.5	4.7	3.2	0.9	1.8	2.3	2.3	3.4	2.3
2009-10	1.0	1.8	2.1	2.8	4.0	2.7	1.0	1.4	2.0	1.9	2.9	1.9
2010-11	0.8	1.6	2.1	3.0	4.2	2.8	0.5	1.2	2.1	2.2	3.1	2.1
2011-12	0.7	1.8	2.7	3.1	4.2	3.0	0.9	1.4	1.9	2.3	3.0	2.2

[a] Weighted average based on 2011-12 tree distribution.

SOURCE: Florida Agricultural Statistics Service.

Table 12. Average grapefruit yields by age.

Season	White Grapefruit						Colored Grapefruit					
	3-5	6-8	9-13	14-23	24+	wt avg[a]	3-5	6-8	9-13	14-23	24+	wt avg[a]
	1-3/5 bushel boxes per tree											
1992-93	2.3	3.9	7.5	7.1	7.0	6.9	2.5	4.9	5.6	5.7	6.4	5.6
1993-94	2.2	3.6	4.4	6.6	6.7	6.2	2.3	3.7	4.6	4.6	5.4	4.6
1994-95	3.2	2.5	5.2	7.1	6.4	6.4	2.0	3.5	4.9	5.3	5.1	4.9
1995-96	2.0	4.3	3.5	6.3	5.7	5.7	2.7	3.5	5.1	4.0	5.4	4.3
1996-97	2.3	4.8	3.3	6.7	6.3	6.1	1.6	3.8	4.8	5.7	5.6	5.2
1997-98	1.7	4.2	5.2	8.0	5.3	6.6	2.3	2.8	4.2	5.4	5.2	4.9
1998-99	1.5	3.1	4.2	4.8	5.0	4.7	1.7	3.2	3.5	4.7	4.8	4.4
1999-00	1.3	3.1	4.6	5.2	6.3	5.3	1.4	2.9	4.2	5.3	5.7	4.9
2000-01	2.2	2.9	3.8	7.1	5.4	6.0	1.8	3.3	3.6	4.7	4.9	4.4
2001-02	1.3	3.3	3.6	7.0	5.8	6.0	2.0	2.3	3.9	4.7	5.2	4.5
2002-03	1.9	3.0	3.2	4.8	5.3	4.7	1.6	1.8	3.0	4.0	4.8	3.9
2003-04	2.5	3.5	3.5	4.4	6.9	5.1	2.9	3.5	3.6	4.6	6.0	4.8
2004-05	1.0	0.8	1.1	1.4	1.3	1.3	0.8	2.0	2.2	1.9	1.5	1.7
2005-06	1.9	2.5	3.0	2.3	3.8	2.9	0.3	1.2	2.9	3.1	3.8	3.0
2006-07	0.3	2.9	4.0	4.2	5.9	4.6	1.0	2.7	3.4	4.2	5.9	4.3
2007-08	1.6	4.1	3.2	4.5	6.3	4.9	1.6	2.9	3.2	4.0	6.3	4.4
2008-09	1.1	2.3	2.8	3.8	5.1	4.0	1.4	1.3	2.8	3.7	5.2	3.8
2009-10	0.9	1.9	3.3	3.7	5.4	4.1	1.3	3.0	2.8	3.6	5.3	3.8
2010-11	1.6	2.6	2.0	3.7	5.5	4.1	1.8	1.4	3.4	3.5	5.0	3.9
2011-12	1.3	2.6	3.1	3.1	5.5	3.9	1.4	2.2	2.9	4.0	4.4	3.8

[a] Weighted average based on 2011-12 tree distribution.

SOURCE: Florida Agricultural Statistics Service, *Commercial Citrus Inventory*, various issues.

Table 13. Production scenario matrix.

Loss / Planting	Low/Base Planting: 50% replacement	Medium Planting: 75% replacement	High Planting: 125% replacement
Low/Base Loss: Moderate/Average	(-4.0%, 2.0%) Status Quo	(-4.0%, 3.0%)	(-4.0%, 5.0%) Best Case
Medium Loss: 50% higher than base	(-6.0%, 3.0%)	(-6.0%, 4.5%)	(-6.0%, 7.5%)
High Loss: 100% higher than base	(-8.0%, 4.0%) Worst Case	(-8.0%, 6.0%)	(-8.0%, 10%)

Table 14. Florida orange production projections, actual for 2007-08 through 2011-12, FASS estimate for 2012-13, and FDOC estimates for 2013-14 through 2022-23.[a]

	Low Loss[b]			Middle Loss[b]			High Loss[b]		
Season	Low Planting[c]	Middle Planting[d]	High Planting[e]	Low Planting[c]	Middle Planting[d]	High Planting[e]	Low Planting[c]	Middle Planting[d]	High Planting[e]
	million boxes								
2007-08	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2
2008-09	162.5	162.5	162.5	162.5	162.5	162.5	162.5	162.5	162.5
2009-10	133.7	133.7	133.7	133.7	133.7	133.7	133.7	133.7	133.7
2010-11	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5
2011-12	146.6	146.6	146.6	146.6	146.6	146.6	146.6	146.6	146.6
2012-13e	139.0	139.0	139.0	139.0	139.0	139.0	139.0	139.0	139.0
	A forecast for the 2013-14 season will be made in October 2013 by the USDA, Florida Agricultural Statistics Service.								
2014-15	136.1	136.1	136.1	127.5	127.5	127.5	119.4	119.4	119.4
2015-16	134.2	134.5	135.1	123.4	123.8	124.7	113.3	113.9	115.1
2016-17	132.0	132.7	134.2	119.2	120.3	122.6	107.6	109.0	111.9
2017-18	130.1	131.4	134.1	115.6	117.4	121.4	102.6	104.9	110.0
2018-19	128.2	130.1	134.1	112.1	114.8	120.7	98.0	101.3	108.9
2019-20	126.3	128.8	134.5	108.8	112.4	120.6	93.7	98.2	108.7
2020-21	124.3	127.6	135.0	105.6	110.2	120.8	89.7	95.3	108.9
2021-22	122.3	126.4	135.7	102.5	108.1	121.3	85.8	92.7	109.6
2022-23	120.3	125.2	136.5	99.4	106.1	122.2	82.2	90.3	110.7
avg. loss[f]	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	8.0%	8.0%	8.0%
avg. plant.[g]	2.0%	3.0%	5.0%	3.0%	4.5%	7.5%	4.0%	6.0%	10.0%

e = estimate; a final figure will be provided in the September 2013 Production Summary by FASS.

[a] Assumes yields are average from 2009-10 through 2011-12.

[b] Assumes loss rates vary by age, lowest for young trees (0-3 years), highest for middle age tree (4-11 years) and more moderate for older trees (12-24 years), given incidence of HLB. Low losses reflect average losses in recent years. Higher losses may account for tree mortality as well as decreases in yield.

[c] 50% of replacement planting level (roughly average planting level in recent years).

[d] 75% of replacement planting level.

[e] 125% of replacement planting level.

[f] Unweighted average acre loss rate per year (%) over projection period.

[g] Unweighted average planting rate per year (%) over projection period.

Table 15. Florida grapefruit production projections, actual for 2007-08 through 2011-12, FASS estimate for 2012-13, and FDOC estimates for 2013-14 through 2022-23.[a]

	Low Loss[b]			Middle Loss[b]			High Loss[b]		
Season	Low Planting[c]	Middle Planting[d]	High Planting[e]	Low Planting[c]	Middle Planting[d]	High Planting[e]	Low Planting[c]	Middle Planting[d]	High Planting[e]
	million boxes								
2007-08	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
2008-09	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
2009-10	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
2010-11	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8
2011-12	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
2012-13e	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
	A forecast for the 2013-14 season will be made in October 2013 by the USDA, Florida Agricultural Statistics Service.								
2014-15	18.5	18.5	18.5	17.4	17.4	17.4	16.3	16.3	16.3
2015-16	18.0	18.0	18.1	16.6	16.6	16.8	15.2	15.3	15.6
2016-17	17.4	17.6	17.8	15.8	16.0	16.4	14.3	14.5	15.0
2017-18	17.1	17.3	17.7	15.2	15.5	16.1	13.6	13.9	14.8
2018-19	16.7	17.0	17.6	14.6	15.1	15.9	12.9	13.4	14.5
2019-20	16.3	16.7	17.5	14.1	14.6	15.8	12.2	12.9	14.4
2020-21	16.0	16.4	17.4	13.6	14.2	15.7	11.6	12.4	14.3
2021-22	15.6	16.2	17.4	13.1	13.9	15.7	11.0	12.0	14.3
2022-23	15.3	15.9	17.4	12.7	13.6	15.7	10.5	11.6	14.4
avg. loss[f]	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	8.0%	8.0%	8.0%
avg. plant.[g]	2.0%	3.0%	5.0%	3.0%	4.5%	7.5%	4.0%	6.0%	10.0%

e = estimate; a final figure will be provided in the September 2013 Production Summary by FASS.

[a] Assumes yields are average from 2009-10 through 2011-12.

[b] Assumes loss rates vary by age, lowest for young trees (0-3 years), highest for middle age tree (4-11 years) and more moderate for older trees (12-24 years), given incidence of HLB. Low losses reflect average losses in recent years. Higher losses may account for tree mortality as well as decreases in yields

[c] 50% of replacement planting level (roughly average planting level in recent years).

[d] 75% of replacement planting level.

[e] 125% of replacement planting level.

[f] Unweighted average acre loss rate per year (%) over projection period.

[g] Unweighted average planting rate per year (%) over projection period.

Table 16. Florida specialty production projections, actual for 2007-08 through 2011-12, FASS estimate for 2012-13, and FDOC estimates for 2013-14 through 2022-23.[a]

Season	Tangelos	Tangerines	Total
	---------- million boxes ----------		
2007-08	1.50	5.50	7.00
2008-09	1.15	3.85	5.00
2009-10	0.90	4.45	5.35
2010-11	1.15	4.65	5.80
2011-12	1.15	4.29	5.44
2012-13e	1.00	3.70	4.70
	A forecast for the 2013-14 season will be made in October 2013 by the USDA, Florida Agricultural Statistics Service.		
2014-15[b]	0.86	3.55	4.40
2015-16	0.80	3.36	4.16
2016-17	0.74	3.20	3.94
2017-18	0.69	3.05	3.74
2018-19	0.64	2.91	3.55
2019-20	0.60	2.77	3.37
2020-21	0.56	2.64	3.20
2021-22	0.52	2.51	3.03
2022-23	0.49	2.39	2.88
avg. loss[c]	7.1%	6.2%	6.4%
avg. plant.[d]	0.3%	1.5%	1.3%

e = estimate; a final figure will be provided in the September 2013 Production Summary by FASS.

[a] Assumes average acreage loss rates for each variety and average plantings.

[c] Unweighted average acre loss rate per year (%) over projection period.

[d] Unweighted average planting rate per year (%) over projection period.

Table 17. Florida orange juice US presumed consumption and processed orange on-tree price/revenue projections.

		14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23
		Scenario 1: Low Loss, Low Plant, Flat Market[a]								
US Presumed Consumption	mil gal	997	982	969	958	948	938	927	917	906
Processed On-Tree Price	$/box	$9.58	$9.96	$10.31	$10.59	$10.86	$11.12	$11.38	$11.65	$11.92
Processed On-Tree Revenue	mil $	$1,247	$1,278	$1,300	$1,316	$1,328	$1,339	$1,348	$1,357	$1,364
		Scenario 2: Low Loss, Low Plant, Market Growth[b]								
US Presumed Consumption	mil gal	1,006	995	985	977	970	963	956	949	942
Processed On-Tree Price	$/box	$9.90	$10.46	$10.98	$11.43	$11.87	$12.29	$12.72	$13.14	$13.57
Processed On-Tree Revenue	mil $	$1,289	$1,342	$1,384	$1,420	$1,452	$1,480	$1,506	$1,530	$1,552
		Scenario 3: Low Loss, High Plant, Market Growth[c]								
US Presumed Consumption	mil gal	1,006	998	994	994	996	1,001	1,006	1,013	1,020
Processed On-Tree Price	$/box	$9.90	$10.37	$10.74	$11.00	$11.19	$11.34	$11.46	$11.55	$11.62
Processed On-Tree Revenue	mil $	$1,289	$1,340	$1,379	$1,410	$1,436	$1,458	$1,479	$1,499	$1,519

[a] Assumes loss rates are at the average level in recent years (about 4%), planting rates are at the average level in recent years (about 2% or half the replacement level), and a 0% growth rate for US consumption and exports.

[b] Same as scenario 1 except US consumption and exports are projected to grow at 1% per year.

[c] Same as scenario 2 except planting rates are at the 125% of the replacement level (about 5%).

Table 18. Florida grapefruit juice US presumed consumption and grapefruit on-tree price/revenue projections.

		14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23
		Scenario 1: Low Loss, Low Plant, Flat Market[a]								
US Presumed Consumption	mil gal	46.0	45.7	45.3	44.9	44.5	44.2	43.8	43.5	43.2
Processed On-Tree Price	$/box	$4.58	$4.73	$4.95	$5.14	$5.33	$5.51	$5.69	$5.86	$6.03
Fresh On-Tree Price	$/box	$14.27	$15.27	$16.36	$17.16	$18.00	$18.87	$19.74	$20.65	$21.59
Total On-Tree Revenue	mil $	$153.5	$157.6	$162.5	$166.4	$170.1	$173.7	$177.2	$180.5	$183.8
		Scenario 2: Low Loss, Low Plant, Market Growth[b]								
US Presumed Consumption	mil gal	46.4	46.3	46.1	45.9	45.7	45.5	45.3	45.2	45.0
Processed On-Tree Price	$/box	$4.70	$4.93	$5.22	$5.50	$5.78	$6.04	$6.30	$6.55	$6.79
Fresh On-Tree Price	$/box	$14.90	$16.26	$17.74	$18.95	$20.23	$21.55	$22.91	$24.34	$25.83
Total On-Tree Revenue	mil $	$159.3	$166.6	$174.7	$181.9	$189.0	$195.9	$202.6	$209.3	$216.0
		Scenario 3: Low Loss, High Plant, Market Growth[c]								
US Presumed Consumption	mil gal	46.4	46.4	46.3	46.3	46.3	46.4	46.5	46.6	46.8
Processed On-Tree Price	$/box	$4.70	$4.89	$5.10	$5.28	$5.44	$5.58	$5.71	$5.82	$5.91
Fresh On-Tree Price	$/box	$14.90	$15.94	$16.92	$17.54	$18.14	$18.70	$19.17	$19.60	$19.97
Total On-Tree Revenue	mil $	$159.3	$165.4	$171.6	$176.6	$181.2	$185.6	$189.6	$193.4	$196.9

[a] Assumes loss rates are at the average level in recent years (about 4%), planting rates are at the average level in recent years (about 2% or half the replacement level), and a 0% growth rate for US consumption and exports.

[b] Same as scenario 1 except US consumption and exports are projected to grow at 1% per year.

[c] Same as scenario 2 except planting rates are at the 125% of the replacement level (about 5%).

FIGURES

Figure 1. Historical Early-Mid Orange Tree Density, by Age of Tree.

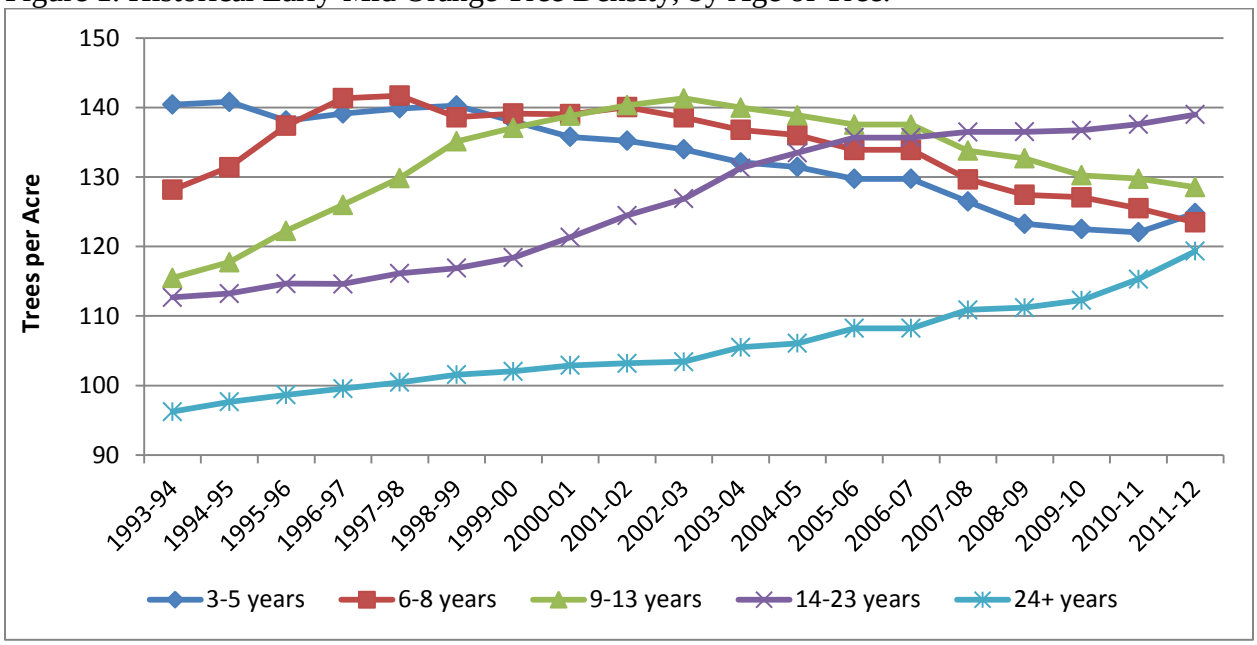

Figure 2. Historical Valencia Orange Tree Density, by Age of Tree.

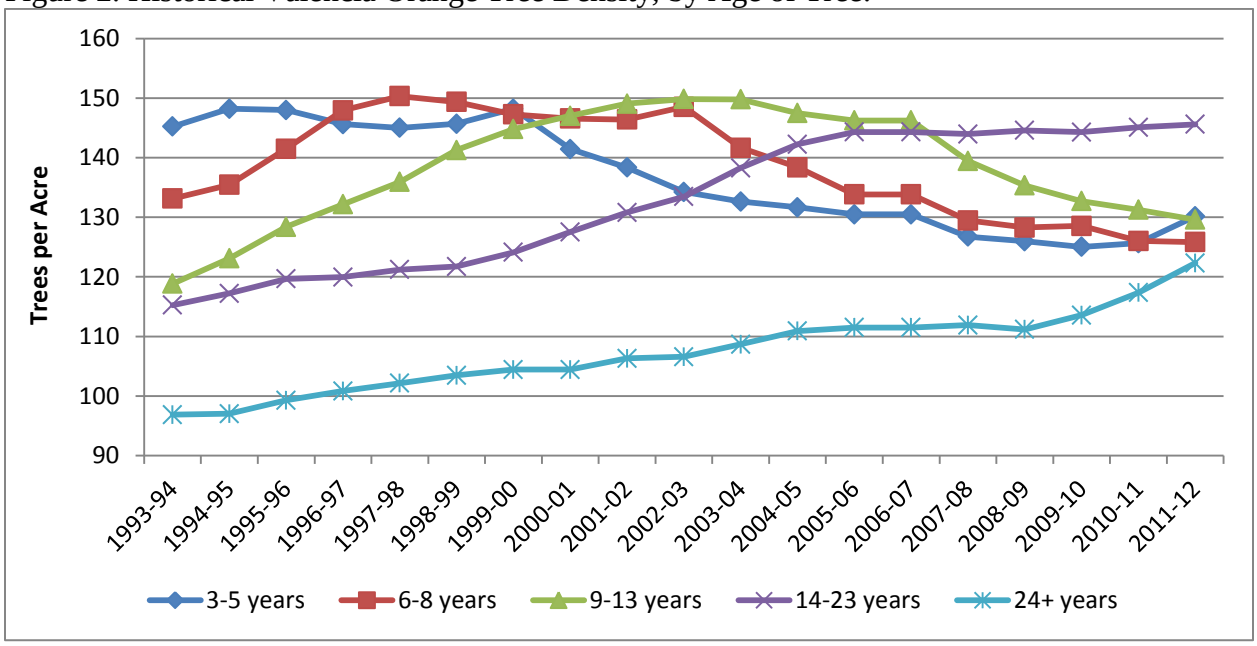

Figure 3. Historical White Grapefruit Tree Density, by Age of Tree.

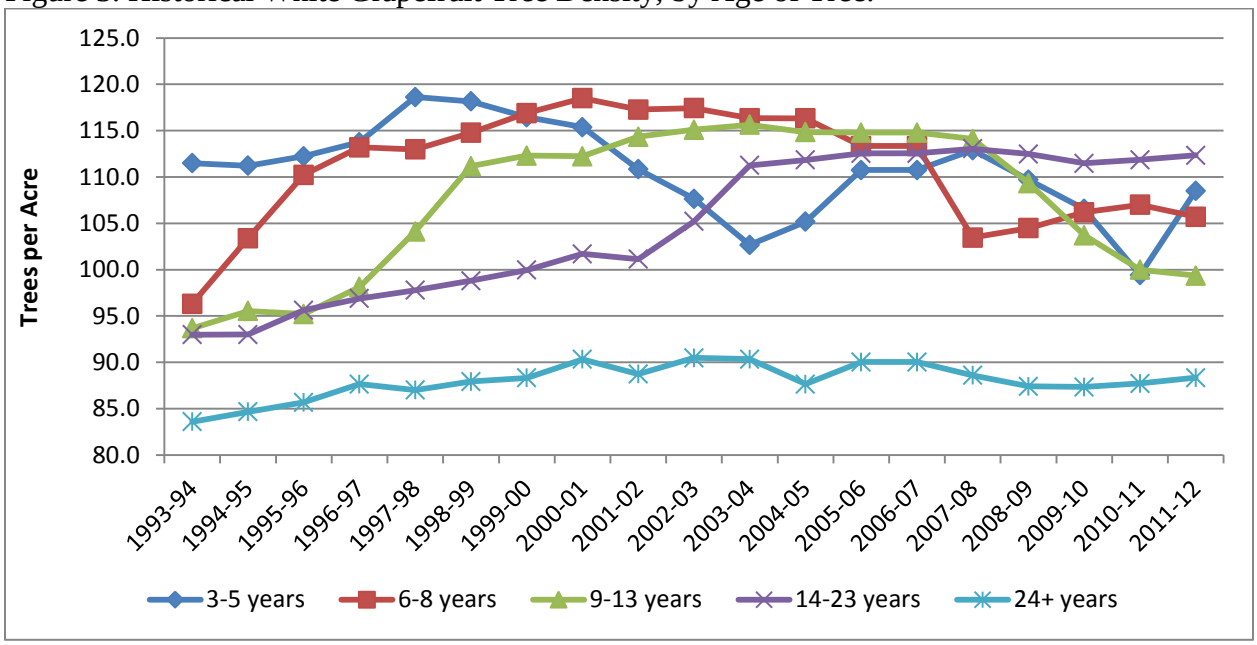

Figure 4. Historical Red Grapefruit Tree Density, by Age of Tree.

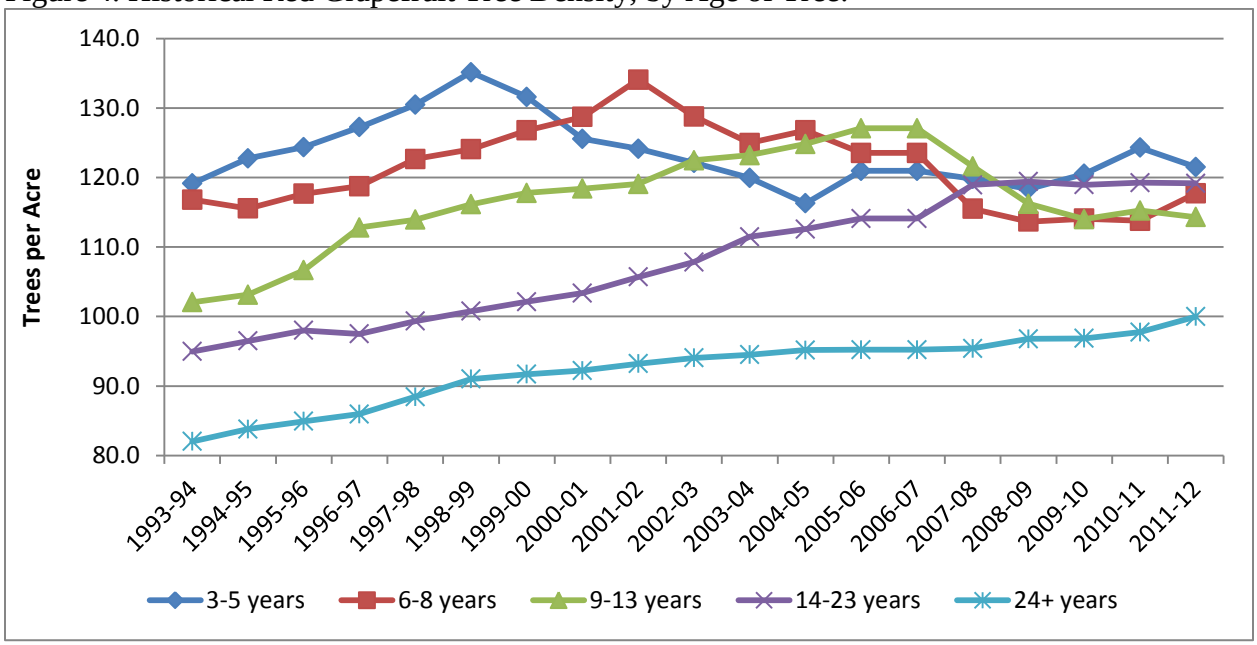

Figure 5. Historical Early-Mid Orange Tree Yields, by Age of Tree.

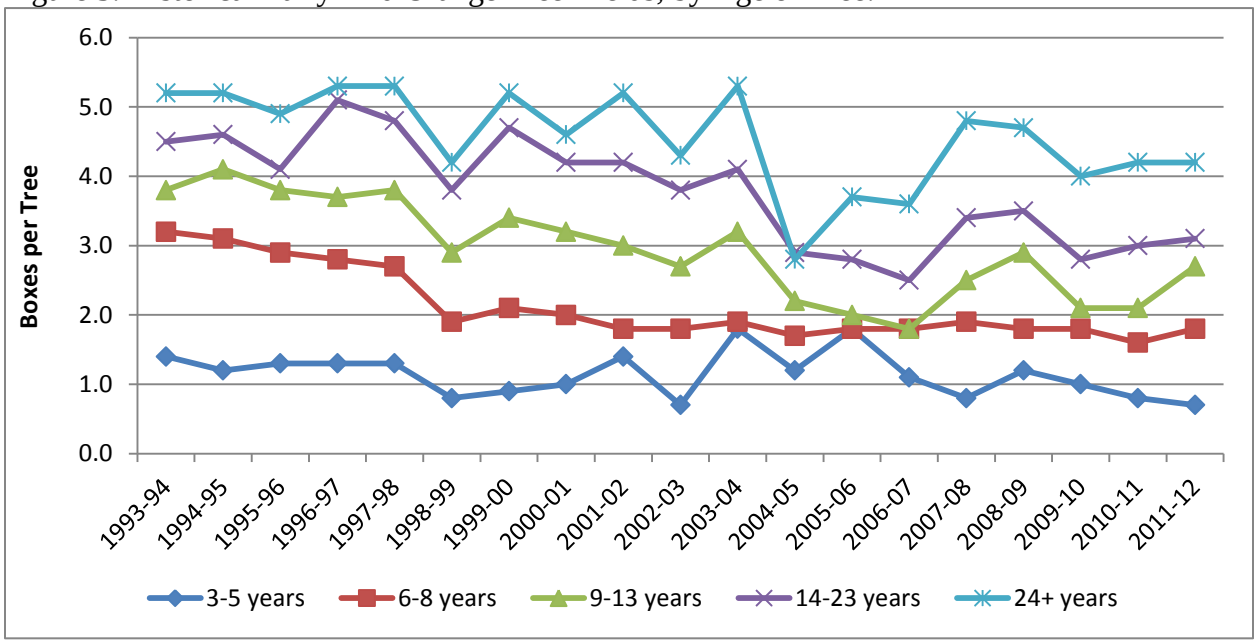

Figure 6. Historical Valencia Orange Tree Yields, by Age of Tree.

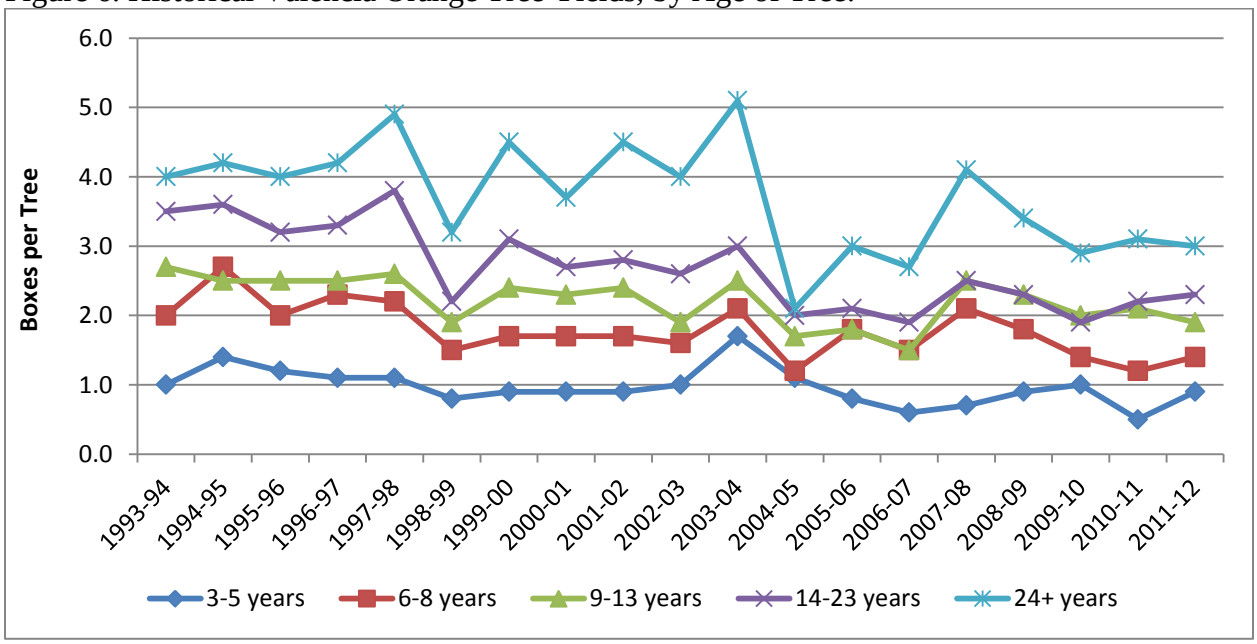

Figure 7. Historical White Grapefruit Tree Yields, by Age of Tree.

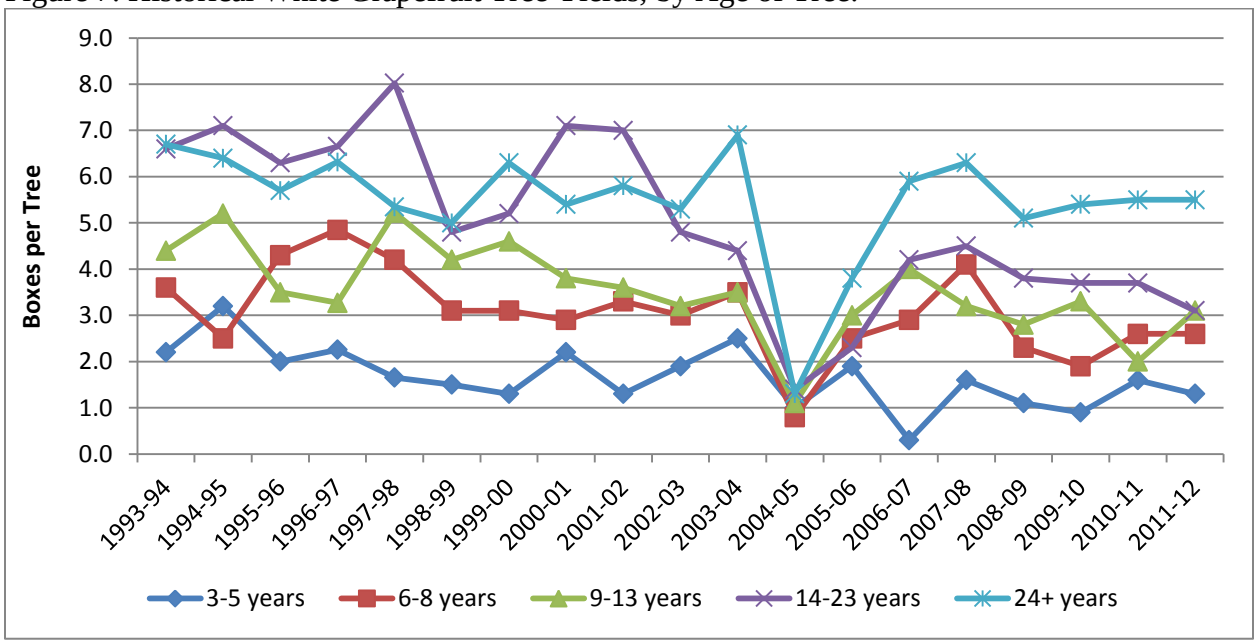

Figure 8. Historical Red Grapefruit Tree Yields, by Age of Tree.

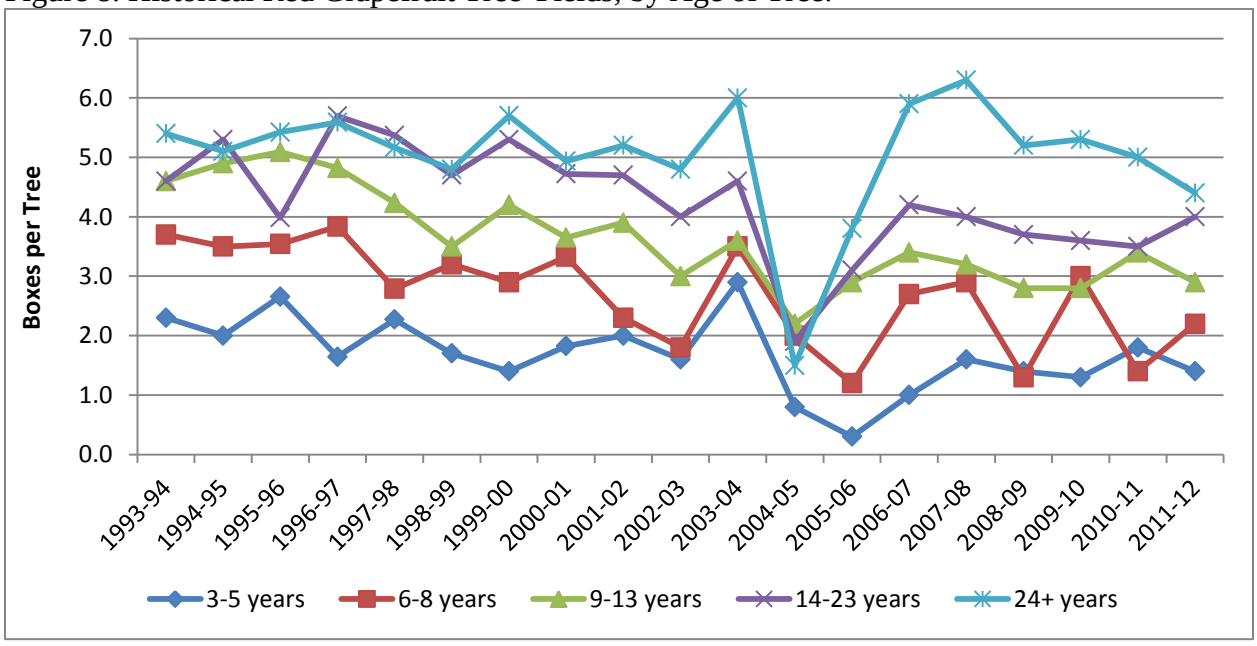

Figure 9. Orange Tree Average Planting and Loss Rates.

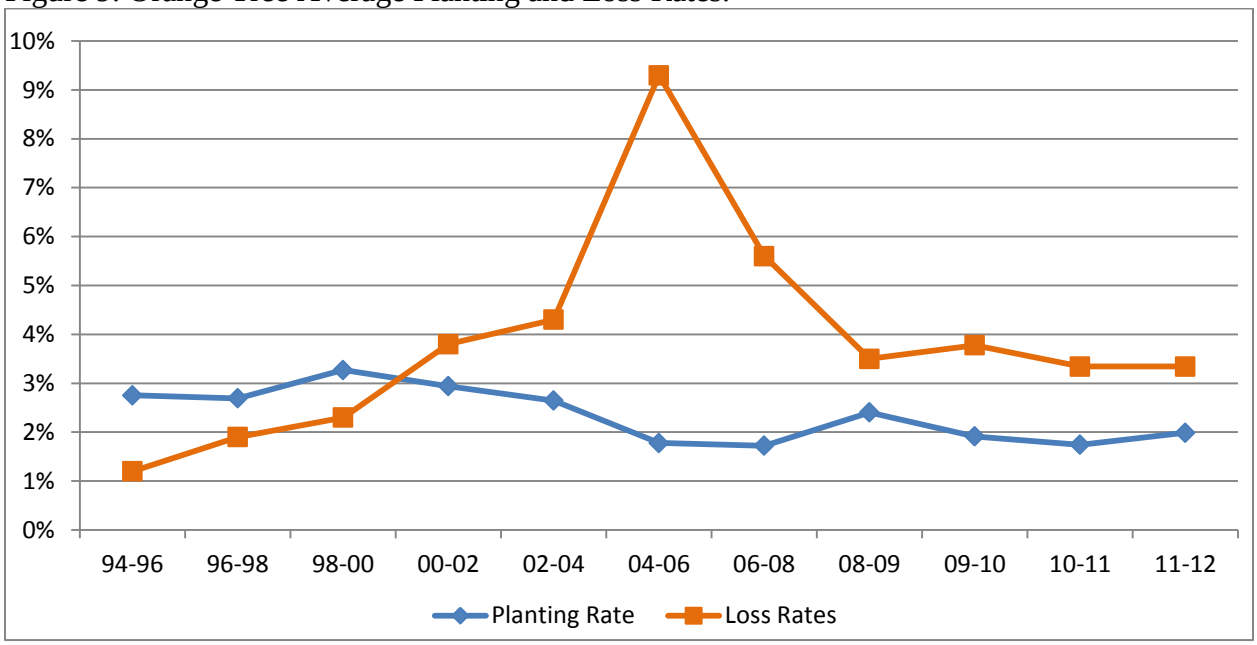

Figure 10. Grapefruit Tree Average Planting and Loss Rates.