market forces, and the Florida orange juice industry. Citrus Industry 66(9):46-50.
7. Schoulties, C. L., E. L. Civerolo, J. W. Miller, R. E. Stall, C. J. Krass, S. R. Poe, and E. P. DuCharme. 1987. Citrus canker in Florida. Plant Disease 71(5):388-395.
8. Tucker, D. P. H., R. F. Lee, L. W. Timmer, L. G. Albrigo, and R. H. Brlansky. 1984. Experimental transmission of citrus blight. Plant Disease 68:979-980.
9. Wheaton, T. A., J. D. Whitney, W. S. Castle and D. P. H. Tucker. 1986. Tree spacing and rootstock affect growth, yield, fruit quality, and freeze damage of young Hamlin and Valencia orange trees. Proc. Fla. State Hort. Soc. 99:29-32.

Proc. Fla. State Hort. Soc. 100:386-387. 1987.

CURRENT AND FUTURE TRENDS IN NEW CITRUS PLANTINGS

JAMES W. TODD
Florida Agricultural Statistics Service
1222 Woodward Street
Orlando, Florida 32803

Abstract. **A thirteen county region of south Florida, lying below the ridge is fast becoming th new center of the State's citrus production. In 1965-66 this area produced just 22 percent of the State's citrus on 27 percent of the total acreage. A decade and a half later, in 1979-80 when the State harvested its largest crop, production in this area had increased to 33 percent of the State's total on 38 percent of the acreage.**

In 1985-86, following several years of severe freezes, the area's acreage was 60 percent of the State's total and the production constituted 66 percent of the total. During the 6 year span in the early 80's, more than 60 percent of all recorded newly set trees were set in these southern counties. Production managers have proven that the potential for expansion in this flatwoods area is nearly unlimited. There is certainly sufficient land in the area to expand the current acreage by several fold. The principal limiting factor is the economics and water availability. As long as owners see the likelihood of a profit the expansion should continue.

Southern migration of citrus in Florida isn't new. Since the introduction of citrus by the Spanish at St. Augustine, there has been a long standing movement to the south. Even though the recent shift in the production belt can be associated with a series of freezes, it had its beginning several decades ago. The shift began with the development of modern farm machinery and the need to locate large tracts of land where it could be used more efficiently, and of course with less threat from cold. The recent freezes only accelerated the move. That is what I would like to address, the emergence of a 13 county area as the State's leading production region. The counties included are Broward, Charlotte, Collier, DeSoto, Glades, Hendry, Highlands, Indian River, Lee, Martin, Okeechobee, Palm Beach, and St. Lucie (Fig. 1).

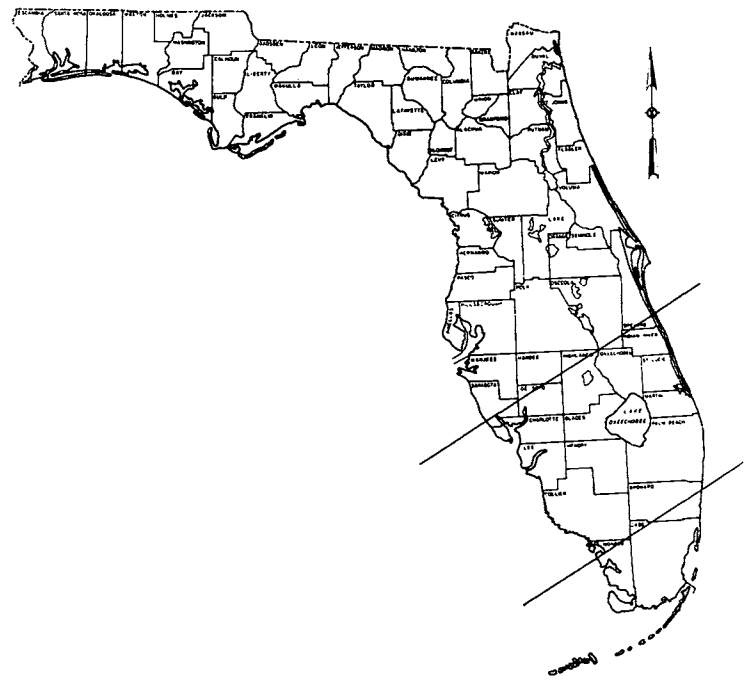

Fig. 1. South Florida 13 county expansion area (Broward, Charlotte, Collier, De Soto, Glades, Hendry, Highlands, Indian River, Lee, Martin, Okeechobee, Palm Beach, St. Lucie).

An Analysis of the 13 County Area

In 1966 the commercial citrus tree inventory showed this 13 county region had 225,265 acres of commercial citrus. By Jan. 1968 that had increased quite sharply to 277,613 acres, but then leveled off for the next decade (Table 1). It wasn't until the decade of the 80's that expansion started again. As of Jan. 1986 there were 364,387 acres in the region. However, acreage alone doesn't tell the complete story. This gain came about at a time when the production in the remainder of the State was declining from the series of severe freezes. A better description of the growth in the 13 county area, is a comparison of its percentage of the State's total acreage. In 1966, the acreage was just 26.6 percent of the State's total, but in 1986 this had increased tremendously to the level of 59.2 percent of the State total.

While acreage was increasing, production was tracking along a similar course. In the 1965-66 season, the region produced 30,440,000 boxes of fruit which was only 21.6 percent of the State's total (Table 2). However, the volume in this southern area continued to increase. In the 1979-80 season, when the State produced its largest crop, this area accounted for 93,525,000 million boxes, one-third of the State's total production. After that record season, production in this area decreased somewhat due to freeze losses. However, the percentage of State total increased sharply. By the 1985-86 season their production increased to 113,758,000 boxes, 65.6 percent of the State's total citrus production.

Oranges are the dominant fruit type in the area, constituting 70 percent of the total acreage. Grapefruit only accounts for 25 percent of the area's total acreage. How-

Table 1. Expansion of citrus acreage in the 13 county south Florida area from 1966 to 1986.

Census years	Acreage	Percentage of state
1966	225,265	26.6
1968	277,613	30.2
1970	294,967	31.8
1972	296,375	34.3
1974	302,747	35.6
1976	305,245	36.4
1978	302,855	36.9
1980	317,946	38.2
1982	331,214	39.6
1984	351,124	46.7
1986	364,387	59.2

Table 2. Citrus production in the 13 county south Florida area from 1965-1986.

Season	Production (1,000 boxes)	Percentage of state
1965-66	30,440	21.6
1967-68	34,852	24.4
1969-70	42,478	22.7
1971-72	58,607	29.6
1973-74	73,426	32.3
1975-76	79,142	32.0
1977-78	78,236	33.4
1979-80	93,525	33.3
1981-82	75,975	40.7
1983-84	81,853	48.8
1985-86	113,758	65.5

ever, in 1985-86 the 93,153 acres produced 80 percent of the State's total grapefruit volume and nearly fifty percent of the world's marketable supply. Just 5 percent of the area's acreage is set in specialty type fruit, which are primarily committed to the fresh market trade.

Future Development

Citrus has long been Florida's most important crop and a few obstacles are not likely to side track its progress for very long. Freezing winters, brazilian juice, citrus canker and local production problems will only delay the expansion.

Currently, some of the warmer sites in the freeze damaged areas are high on the list for replanting for several reasons. Land is available and the cost of resetting is not as great as moving to south Florida. Replacement trees are currently available and growers have an incentive to set the land if they wish to retain agricultural assessment. In fact, one only needs to take a trip into once thriving Lake County to see the tremendous amount of resetting taking place. However, this likely will be only short term growth. Once the premium land has been reset, the large citrus developers will be heading south looking for land.

The 13 county south Florida area certainly is where the long term growth will take place. This is the area where large tracts of land suitable for citrus are still available and where there is less threat of tree killing freezes. This is emphasized by the interest in the area during the first 5 years of the 80's (Table 3). During this period, 60 percent of the State's newly set acreage was in the 13 county area. Statistics show that trees set during the first few years of this period were set at 106 per acre average, but then increased to 125 per acre during the last year. Many growers are setting trees at spacings which average near 150 per trees per acre. The high tree density rate will contribute to greater productivity and more quickly.

Table 3. Planting in the 13 county south Florida area from 1981 to 1985.

Year set	State total acres	13 county total acres	Percentage of state
1981	32,466	19,474	60.0
1982	27,151	17,546	64.6
1983	46,077	28,512	61.9
1984	24,992	14,951	59.8
1985	23,733	11,642	49.1
Total	154,419	92,125	59.7

Hendry County has the greatest growth potential because of large undeveloped land area. Hendry currently (as of Jan. 1986) has 40,269 acres and, with many more already in the planning and development stages, could have 100,000 acres of citrus by the mid-1990's. Site permitting likely will become the determining factor after that. Hendry County certainly isn't the only county in southwest Florida where development is taking place, but, citrus expansion in the adjacent counties will not be as rapid because of greater restrictions.

Development along the lower east coast should continue at near the level of the last few years. Large tracts of land are increasingly more difficult to find in that area, but there continues to be a lot of acreage being set on smaller tracts. Much of the old acreage is being pushed out and set with potentially more productive trees.

During the next decade, oranges should still be the leading fruit type set even with the competition from Brazil because of the strong U.S. demand for F.C.O.J. There will be continued increases in red grapefruit acreage because of good demand for the fruit. Increased export sales, coupled with a strong demand for processed products are two of the encouraging factors. As mentioned earlier, this area is the dominant source of the nation's supply of grapefruit, and that is not likely to change. Acreage of specialty type fruit should also increase with the renewed interest in fresh fruit sales and the need to have a dependable source of field run fruit for packinghouses. This is especially the case during seasons when there is freeze damage.

Summary

During the decade of the 80's we have witnessed significant changes in Florida's citrus industry. It is obvious there is a major shifting in the State's production belt. The most striking change at this point has been the rapid increase of acreage in the southern flatwoods area. The average annual growth rate in the 13 county area during the last 5 years was 18,425 acres. If just 17,000 acres of growth per year is maintained until the turn of the century, and certainly that is realistic in light of what is taking place today, this 13 county area could have 600,000 acres of citrus by the year 2000.

Should current development continue and this projection come to reality, other changes will follow. The area production level will have increased proportionately, and I think you will then see major shifts in service facilities and related industries. The heart of the citrus industry as we know it today could well be relocated.