

Sugarcane Variety Census: Florida 1997 ¹

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The annual variety census reports for the Florida sugarcane industry were started by L. P. Hebert in 1964. In this report of the 1997-98 harvest season, mill managers and independent growers displayed exemplary cooperation in supplying the requested data. As a result of this cooperation, much useful information is contained in this census.

The census reflects Florida sugarcane growers' variety preferences. In addition, the census reports comparative usage of the successive and fallow planting systems. The sugarcane crop is categorized as plant cane, first ratoon, second ratoon, third ratoon, and fourth ratoon and older. Also, the census reports percentages of muck and sand soils used for sugarcane.

Growers reported 431,324 acres of sugarcane grown for sugar and seed for the 1997-98 crop. This figure represents a decrease of 7,176 acres compared to the figure reported for the 1996-97 season (Glaz, 1996). Figure 1 shows the general upward trend in

total sugarcane acreage in Florida since 1977, with most of the growth occurring by 1990.

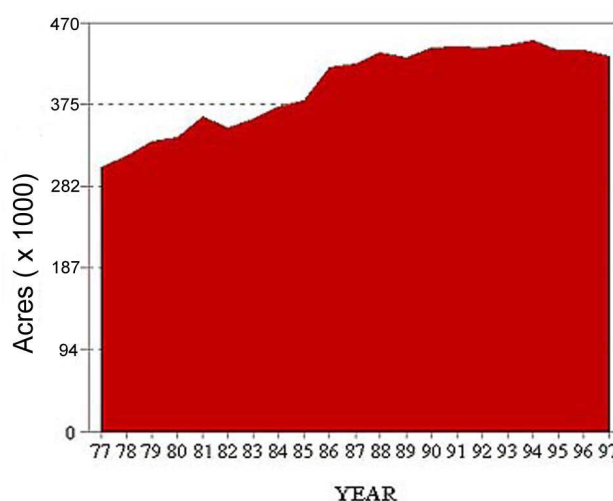


Figure 1. Total sugarcane acreage as reported in annual Florida variety census reports since 1977.

Of Florida's 1997-98 sugarcane, 35.0 percent was plant cane and 65.0 percent was ratoon cane. This represents a slight drop in plant-cane percentage following two years of moderate increases (Figure 2). Of this year's total acreage, 34.8 percent was first

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ratoon, 21.9 percent was second ratoon, 6.7 percent was third ratoon, and 1.7 percent was fourth ratoon or older. These compared with 1996 percentages of 32.8, 22.0, 6.5, and 2.6, respectively (Glaz, 1996). Figure 2 compares the annual percentages in plant cane through fourth ratoon since 1995.

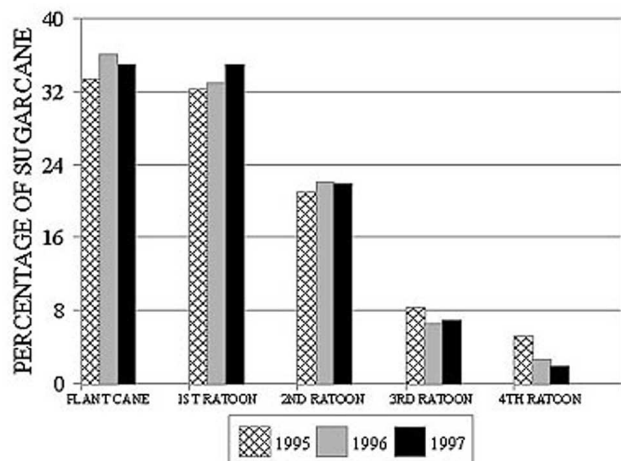


Figure 2. Percentage sugarcane acreage as plant cane, first ratoon, second ratoon, third ratoon, and fourth ratoon and older from 1995 through 1997.

For the 1997-98 harvest season, Florida growers planned to harvest 36 varieties of sugarcane. As shown in Table 1, 12 each of "principal varieties" covered at least one percent of the total cane area. The group labeled as "all others" represented varieties that each made up less than one percent of the total hectareage. The United States Sugar Corporation of Clewiston, Florida, developed the varieties identified by a "CL" prefix. A cooperative program based at Canal Point, Florida, of the United States Department of Agriculture's Agricultural Research Service, the Florida Sugar Cane League, Inc. and the Institute of Food and Agricultural Sciences of the University of Florida, developed the varieties identified by a "CP" prefix.

The most widely grown variety in Florida this year was CP 80-1827, with 17.5 percent of the total cane area (Table 1). This is the third consecutive year that CP 80-1827 was the most extensively grown variety in Florida. From 1989, when it comprised 0.4 percent of the acreage, land planted with CP 80-1827 increased steadily until last year. Its largest increases were from 1993 to 1994 and 1994 to 1995 (Table 2). The 0.7 percent decrease in acreage of CP 80-1827

this year was the first decline in use of CP 80-1827 since it first appeared on the census (Table 2 and Table 3). The amount of plant-cane acreage with CP 80-1827 also declined slightly by 0.3 percent this year, but CP 80-1827 remains popular having more plant-cane acreage than any other variety (Table 3).

CP 72-2086, the most widely grown variety three years ago (Glaz, 1994), maintained its second-place ranking for the third consecutive year. However, it has not trailed CP 80-1827 by more than 0.6 percentage points in all three years. Last year, CP 72-2086 was the variety with the most plant-cane acreage (Glaz, 1996). This year, the land with CP 72-2086 as plant cane declined by 5.4 percent, the largest decline of any variety (Table 3). Sugarcane mosaic was discovered in several commercial fields of CP 72-2086 in the summer of 1996. The reductions in plant-cane acreage of CP 72-2086 were probably largely due to its susceptibility to the mosaic virus.

Last year's fourth most popular variety, CP 80-1743, moved up to third place this year (Table 1). Although it had a slower rate of increase, CP 80-1743 continued to rise rapidly since it registered 0.3 percent of the acreage in 1991 (Table 2). Last year, its plant-cane acreage increase of 4.6 percent was more than that of any other variety (Glaz, 1996). This year, its plant-cane hectareage declined by 1.0 percent. This decline is probably indicative of steadily increasing incidence of leaf-scald in CP 80-1743 during the past several years.

CL 61-620, last year's third-place variety, dropped to fourth place this year (Table 1). It had a percentage decline in acreage of 0.9 percent (Table 3). CL 61-620 has declined each year since 1994 when it had 15.0 percent of the acreage. However, this three-year decline has slowed because CL 61-620 had a 0.6 percentage increase in its plant-cane acreage this year (Table 3). In 1992 and 1993, CL 61-620 was the most widely grown variety in Florida (Glaz, 1994).

CP 73-1547 has been the fifth-place variety the last two years with 7.8 percent of the acreage each year (Table 1 and Table 2). A decline in use of CP 73-1547 was expected two years ago because its plant-cane acreage had decreased from 9.8 to 6.5

percent (Glaz, 1995). An overall decline of 0.9 percent occurred last year (Table 3) but surprisingly, the plant-cane acreage of CP 73-1547 rebounded with a 2.1 percent increase last year (Glaz, 1996). This year, the plant-cane acreage of CP 73-1547 declined by 0.6 percent.

CP 70-1133 has been the sixth-place variety for the past two years (Table 1 and Table 2). Its overall acreage dropped by 0.5 percent, but its plant-cane acreage increased by 0.6 percent (Table 3). CP 70-1133 was the most widely grown variety in Florida from 1982 through 1984 (Glaz and Donovan, 1984).

CP 78-1628 has been the seventh-place variety for the past two years (Table 2). However, its 5.0 percent of the total acreage this year was a 2.4 percent increase over its acreage last year. This was the largest combined plant-cane and ratoon increase for any variety. Also, its increase of 5.0 percent of the plant-cane acreage was the largest increase in this category. The next largest percentage increase in plant-cane acreage was 0.6 percent (Table 3).

CL 69-886 (with 2.2 percent of the total acreage) edged out CP 72-1210 (with 2.1 percent of the total acreage) for eighth place this year (Table 1). Neither of these varieties had any large increases or declines in acreage. This is the ninth consecutive year of reduced acreage for CP 72-1210, the leading variety in Florida from 1985-1991 (Coale and Glaz, 1992). A major cause for the decline of CP 72-1210 was its susceptibility to rust.

The tenth through twelfth place varieties in this year's census were CP 81-1254, CP 84-1198, and CL 72-321, respectively (Table 1). This is the first year that CP 84-1198 (Glaz, et al., 1994) has qualified as a principal variety.

Of the 24 varieties grouped as "all others," none were grown as ratoon cane only. The absence of plant cane for a variety indicates that its commercial use will soon stop. CP 57-603 had no plant cane and less than 2.5 acres of ratoon cane last year (Glaz, 1996). However, its use in Florida has not completely ended as 2.5 acres of CP 57-603 was planted this year. No acreage was reported this year for CP 77-1776, CP 81-1302, and CP 72-1312, none of which have ever

been principal varieties in Florida. CP 77-1776 was released primarily due to its high sugar concentration, particularly early in the harvest season (Tai, et al., 1988) and CP 81-1302 was released due to its moderate yields of sugar per hectare and disease resistance (Miller, et al., 1991). CP 72-1312 was never officially released due to its extreme susceptibility to sugarcane rust. Contrary to the cooperative agreement that defines the Canal Point program, several growers continued to plant small amounts of CP 72-1312 until this year.

This is the first year that complete reports on the type of planting system utilized, successive or fallow, were available for this census. In the successive planting system, growers plant sugarcane soon after a final-ratoon sugarcane harvest. In the fallow system, growers do not plant sugarcane after a final-ratoon harvest until the following planting season. However, this system often does not result in land remaining fallow for long periods because growers may plant at least one other crop, such as sweet corn, rice, or radishes, between the sugarcane crops. Of the 151,028 plant-cane acres, 46.1 percent were fallow planted and 53.9 percent were successively planted (Table 4). Fallow and successive estimates were 40.9 and 59.1 percent, respectively, in the 1996 census (Glaz, 1996). Percentage fallow acreage has now increased for five consecutive years by a total of 15.4 percent from its low point of 30.7 percent in 1992 (Coale and Glaz, 1992).

Table 4 contains the actual acres and percentages of fallow and successive plant-cane of the principal varieties. Growers had variety preferences depending on whether their fields were fallow or successively planted. Four varieties, CL 61-620, CP 73-1547, CP 70-1133, and CL 72-321 were planted on more fallow than successive land. CP 78-1628, CP 72-1210, and CP 81-1254 were planted about equally between fallow and successive fields. CP 80-1827, CP 72-2086, CP 80-1743, CL 69-886, and CP 84-1198 were planted on successively prepared land more often than fallow. Like last year, CL 72-321 was planted almost exclusively on fallow land. Growers are generally cautious when comparing yields among varieties to check whether they were planted in mostly the fallow or successive system because fallow fields generally have higher

tonnage yields than successive fields (Glaz and Ulloa, 1995). The two varieties most widely planted on sand soils, CP 73-1547 and CP 70-1133 had more hectareage in the fallow than the successive system. This suggests that growers on sand soils are more inclined to plant on fallow land than growers on organic soils.

Growers classified 99.6 percent of their land as either having muck or sand soil. Of these 430,044 acres, 79.3 percent, were reported as muck soils and 20.7 percent were reported as sand soils (Table 5). This year's percentage for muck soils dropped substantially from last year's 85.3 percent, and conversely, the percentage of sand soils increased by 6.0 percent from last year. To further confuse the issue, last year the percentage of muck soils increased and the percentage of sand soils decreased (Glaz, 1996). A possible explanation for this fluctuation is the difficulty in classifying transitional soils. To officially classify a soil with a mixture of muck and sand, one would determine the percentage organic matter by weight. A soil with at least 20 percent organic matter would be organic (muck in south Florida) and one with less than 20 percent organic matter would be a sand. Rather than request official determinations for transitional soils, this report relies on individual growers to use their own criteria to classify their soils.

As with fallow and successive planting, growers had variety preferences according to soil. The two most widely grown varieties, CP 80-1827 and CP 72-2086 were grown on about 91 percent muck soils and 9 percent sand soils. CL 61-620, CL 69-886, CP 81-1254, and CL 72-321 were grown almost exclusively on muck soils. CP 73-1547, CP 70-1133, and CP 78-1628 were grown on more sand than muck acres, and CP 72-1210 and CP 84-1198 had substantial portions of their acreage on sand soils.

From 1988 through 1990, the three most popular varieties comprised the majority of the Florida sugarcane acreage (Table 6). The most extreme example of lack of variety diversification was in 1988 when the three most widely grown varieties accounted for 75.5 percent of the total acreage. This year, the three most widely grown varieties accounted for 46.6 percent of the total Florida acreage. This was

the seventh consecutive year that Florida's three most widely grown varieties comprised between 40 and 50 percent of the acreage. After increasing for three years, this is the first year that the percent acreage in the three most widely grown varieties decreased.

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Table 1. Percentage of the 1997 Florida sugarcane acreage planted to the principal varieties.

Variety	Total Cane Grown	Plant Cane	First Ratoon Cane	Second Ratoon Cane	Third Ratoon Cane	Fourth Ratoon Cane & Older
CP 80-1827	17.5	18.8	18.0	15.8	13.0	17.6
CP 72-2086	17.1	16.1	21.4	15.7	6.5	2.4
CP 81-1743	12.0	11.9	13.4	9.6	12.1	11.4
CL 61-620	10.2	8.1	7.3	14.0	23.7	10.9
CP 73-1547	7.8	7.4	8.1	6.7	9.8	13.3
CP 70-1133	5.9	5.7	5.1	5.6	9.5	15.9
CP 78-1628	5.0	7.6	3.0	4.6	2.4	4.3
CL 69-886	2.2	1.9	2.0	2.6	3.0	1.5
CP 72-1210	2.1	1.7	1.3	3.1	3.5	6.7
CP 81-1254	1.6	1.2	1.6	2.2	0.9	3.4
CP 84-1198	1.5	2.1	1.4	0.9	0.4	0.2
CL 72-321	1.4	1.0	1.3	2.7	0.5	0.0
All others	14.2	16.5	16.1	16.5	14.7	12.4

Table 2. Annual percentage of acreage from 1988 through 1997 for present principal sugarcane varieties in Florida.

Variety	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
CP 80-1827	0.0	0.4	1.6	3.2	5.7	8.3	13.1	16.1	18.2	17.5
CP 72-2086	2.1	4.5	6.4	10.7	13.6	13.6	15.5	15.5	18.0	17.1
CP 80-1743	0.0	0.0	0.0	0.3	1.2	2.7	5.2	7.1	10.7	12.0
CL 61-620	7.8	9.8	11.2	12.6	14.8	14.8	15.0	13.0	11.1	10.2
CP 73-1547	2.8	4.2	5.0	5.8	5.5	8.7	9.8	8.9	7.8	7.8
CP 70-1133	10.9	12.3	13.5	14.0	13.1	12.2	9.9	7.8	6.4	5.9
CP 78-1628	0.0	0.0	0.0	0.2	0.4	0.7	1.0	1.9	2.6	5.0
CL 69-886	0.8	1.6	2.4	2.5	2.5	2.0	2.0	1.9	2.0	2.2
CP 72-1210	56.8	44.1	31.8	20.5	13.7	9.7	6.1	3.8	2.6	2.1
CP 81-1254	0.0	0.0	0.0	0.0	0.3	1.0	1.3	1.5	1.4	1.6
CP 84-1198	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.0	1.5
CL 72-321	0.0	0.0	0.0	0.5	0.4	0.6	1.2	2.1	1.9	1.4

Table 3. Comparison of percentages of 1996 and 1997 acreage for principal sugarcane varieties.

Variety	Combined Plant and Ratoon Cane			Plant Cane Only			Ratoon Cane Only		
	1996	1997	Net Change	1996	1997	Net Change	1996	1997	Net Change
CP 80-1827	18.2	17.5	-0.7	19.1	18.8	-0.3	17.7	16.8	-0.9
CP 72-2086	18.0	17.1	-0.9	21.5	16.1	-5.4	16.1	17.5	+1.4
CP 80-1743	10.7	12.0	+1.3	12.9	11.9	-1.0	9.5	12.0	+2.5
CL 61-620	11.1	10.2	-0.9	7.5	8.1	+0.6	13.2	11.4	-1.8
CP 73-1547	7.8	7.8	0.0	8.0	7.4	-0.6	7.6	8.0	+0.4
CP 70-1133	6.4	5.9	-0.5	5.1	5.7	+0.6	7.1	6.0	-1.1
CP 78-1628	2.6	5.0	+2.4	2.6	7.6	+5.0	2.6	3.5	+0.9
CL 69-886	2.0	2.2	+0.2	2.0	1.9	-0.1	2.0	2.3	+0.3

Table 3. Comparison of percentages of 1996 and 1997 acreage for principal sugarcane varieties.

Variety	Combined Plant and Ratoon Cane			Plant Cane Only			Ratoon Cane Only		
	1996	1997	Net Change	1996	1997	Net Change	1996	1997	Net Change
CP 72-1210	2.6	2.1	-0.5	1.3	1.7	+0.4	3.3	2.3	-1.0
CP 81-1254	1.4	1.6	+0.2	1.1	1.2	+0.1	1.6	1.8	+0.2
CP 84-1198	1.0	1.5	+0.5	1.5	2.1	+0.6	0.6	1.1	+0.5
CL 72-321	1.9	1.4	-0.5	1.2	1.0	-0.2	2.3	1.7	-0.6

Table 4. Actual and percentage acreage of each principle variety in fallow and successive planting systems.

Variety	Fallow		Successive	
	Acres	Percent	Acres	Percent
CP 80-1827	10,021	14.4	18,394	22.6
CP 72-2086	9,337	13.4	15,057	18.5
CP 80-1743	6,933	10.0	11,105	13.6
CL 61-620	6,758	9.7	5,424	6.7
CP 73-1547	6,832	9.8	4,394	5.4
CP 70-1133	5,128	7.4	3,433	4.2
CP 78-1628	5,923	8.5	5,602	6.9
CL 69-886	1,139	1.6	1,699	2.1
CP 72-1210	1,307	1.9	1,272	1.6
CP 81-1254	953	1.4	924	1.1
CP 84-1198	1,361	2.0	1,801	2.2
CL 72-321	1,255	1.8	210	0.3
All others	12,617	18.1	12,268	15.1
Total	69,597	100.0	81,431	100.0

Table 5. Actual and percentage acreage of each principal variety grown on muck and sand soils.

Variety	Muck Acres	Sand Acres	Muck %	Sand %
CP 80-1827	68,888	6,471	20.2	7.3
CP 72-2086	66,270	7,084	19.4	8.0
CP 80-1743	48,424	3,169	14.2	3.6
CL 61-620	42,620	1,423	12.5	1.6
CP 73-1547	12,424	20,993	3.6	23.6
CP 70-1133	7,501	17,589	2.2	19.8
CP 78-1628	6,783	13,560	2.0	16.5
CL 69-886	9,171	136	2.7	0.2
CP 72-1210	6,946	2,003	2.0	2.3
CP 81-1254	6,793	119	2.0	0.1
CP 84-1198	3,789	2,542	1.1	2.9
CL 72-321	6,042	114	1.8	0.1
All others	55,568	12,513	16.3	14.1
Total	341,218	88,826	100.0	100.0

Table 6. Percentage of the total sugarcane acreage of the three most widely grown varieties in Florida since 1988.

Year	Percent	First	Second	Third
1988	75.5	CP 72-1210	CP 70-1133	CL 61-620
1989	66.5	CP 72-1210	CP 70-1133	CL 61-620
1990	56.5	CP 72-1210	CP 70-1133	CL 61-620
1991	47.1	CP 72-1210	CP 70-1133	CL 61-620
1992	42.1	CL 61-620	CP 72-1210	CP 72-2086
1993	40.6	CL 61-620	CP 72-2086	CP 70-1133
1994	43.6	CP 72-2086	CL 61-620	CP 80-1827
1995	44.6	CP 80-1827	CP 72-2086	CL 61-620
1996	47.3	CP 80-1827	CP 72-2086	CL 61-620
1997	46.6	CP 80-1827	CP 72-2086	CP 80-1743