Performance of Pecan Cultivars in North Central Florida

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The pecan, *carya illionensis* (Wangenh.) K. Koch, was introduced to north Florida in the early 1800's. Commercial plantings spread slowly through the northern edge of the state, but, after the great freeze of 1898, commercial plantings were extended into north central Florida as replacements for the citrus that had been frozen out. Many of the introduced cultivars have been of little value because summer showers and high humidity has favored the rapid development of scab. Others have been considered marginal because of low total yield or quality factors. The increasing demand for adequate yields of high quality nuts has stimulated further evaluation of old and new cultivars suitable for use in Florida. High yielding cultivars producing 50 percent kernel are needed to keep pace with newer cultivars being planted in southwestern United States.

Scions of many cultivars and selections have been grafted into established trees in an orchard near Gainesville. Data has been obtained from these topworked trees and adjacent established trees. The orchard is located on a fine sand soil of the Rex series which is characterized by restricted internal drainage and a mottled clay layer at depths of 3 to 5 feet. The orchard is in a strongly alternate bearing situation and is well fertilized but no insect or disease control is used in order to observe the cultivars under severe conditions.

Data from nuts harvested over the last 5 heavy alternate fruiting years are summarized in this report. Pecan nut size and percent kernel were determined from nut samples of 25 to 50 nuts per culitvar each year. Because of harvesting problems a few samples as small as 10 nuts were used. Some of the cultivars under observation either did not produce nuts or they were lost to squirrels and birds before harvest in some of the cropping years. In order to bring all cultivars to an equivalent value which would account for some seasonal variation a correction factor was calculated with the formula:

$$\text{Adjusted avg.} = \frac{\text{cv. avg.} \times \text{mean base avg.}}{\text{base avg. for years cropped}}$$

The seven cultivars used for the base average are given in Table 1, which shows the percent kernel. Similar calculations are given in Table 2 for nut size.

In addition to size and parent kernel additional factors influence the value of a cultivar. An attractive appearance of the shell, and ease of cracking by hand are essential if the nuts are to be sold to the "in shell" trade. However, under present conditions, where more than 90 percent of the production goes to commercial shellers, the percentage of unbroken half kernels and their easy and complete separation from the septa becomes more important than appearance of shell or ease of hand cracking.

A top quality nut is of little value to a grower if the production is low, likewise a high producer of low quality nuts will provide little income. It is easy to see why 'Curtis' has become the favorite of Florida growers with its high quality and yield. 'Stuart' has usually been of slightly lower quality and significantly lower yield in this area. Of the newer cultivars, 'Moreland' has been tops in both quality and yield, although some growers have tended to shy away from it because of its undetermined susceptibility to scab. This cultivar can be recommended to anyone willing to use a scab control spray program. 'Desirable' has been of good quality, but yields have not been high and un-

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sprayed trees are often severely defoliated by leaf diseases late in the season. This cultivar has less tendency for alternate bearing, and average annual production is satisfactory. It has shown a susceptibility to cold damage from early fall storms. Yields of 'Farley' and 'Cape Fear' have been moderate to below average. 'Barton' is an early maturing nut with good yield of high percent kernel and scab resistance but kernel quality is only fair. Premature shuck split on older trees has resulted in low, uneconomic yields. 'Davis' and 'Mahan-Stuart' nuts have not filled well when a large crop is set. 'Harris Super' is extremely susceptible to scab. 'Elliott' is scab resistant, yields heavily and has a high percent kernel. However, it is slow to come into heavy production and young trees have suffered freeze damage in a commercial orchard near Gainesville. 'Kernodle' produces a large, high percent kernel nut, but yields have been below average and trees continue to exhibit juvenile characteristics. Furthermore, the nut has a tendency to split along the suture rendering it vulnerable to rots if the weather turns wet during harvest. 'Monticello' seedling is the local name for a cultivar sold mistakenly as 'Mahan-Stuart' to which it is considered superior. It has a thick shell and is only moderate size but yields well and is resistant to scab and leaf diseases. 'Choctaw' and 'Caddo' have exhibited large variations in percent kernel and should be further evaluated for this area.

Currently 'Curtis,' 'Elliott,' 'Desirable' and 'Moreland' are recommended for commercial plantings northward from central Florida. 'Curtis' is the only one of these found in significant acreage in old plantings, 'Elliott' and 'Desirable' as well as 'Curtis' are frequently found in new plantings.

Table 1. The % kernel of Pecan cultivars tested.

Cultivar	1964	1966	Year 1968 percent	1970	1972	Avg.	Adj. Avg.
Moreland	53.6	59.5	54.5	56.2	59.3	56.7	
Curtis	56.0	53.4	49.6	55.2	57.0	54.2	
Kernodle	57.8	56.7	49.5	52.0	51.9	53.6	
Monticello Seedling	50.0	55.3	47.4	52.6	54.1	51.9	
Barton	46.0	52.7	56.0	50.9	53.4	51.8	
Desirable	40.3	52.9	49.8	54.8	50.8	50.9	
Davis	45.0	50.0	35.1	47.2	42.9	44.0	
Base Average	50.7	54.4	48.8	52.7	52.8	51.9	
Cape Fear		52.9	54.9	50.0	51.8		52.1
Farley	50.2	55.2		52.0	52.9		51.8
Stuart		45.0	36.3	48.7	48.5		44.4
Choctaw	47.1		52.1	57.1			53.3
Caddo	49.2		47.0	59.8			53.2
Shawnee	36.4		38.8	52.2			43.5
Elliott	51.5			53.5			52.7
Harris Super			47.4	52.6			51.8
Mahan Stuart				50.4	51.2		50.0
President			39.1	43.0			42.0
Forkett		59.0					56.3
Enloe					54.7		53.8
Murhee				53.3			52.5
Kennedy			41.9				44.6
Success			29.9				31.8

Table 2. Nut weight (grams) of cultivars tested.

Cultivar	Year 1964	1966	1968	1970	1972	Avg.	Adj. Avg.
			Grams				
Kernodle	9.4	9.9	9.8	9.0	10.6	9.7	
Desirable	7.9	8.8	8.4	8.5	10.6	8.8	
Davis	7.8	9.6	8.2	9.6	8.5	8.7	
Moreland	7.0	7.6	8.6	7.5	8.8	7.9	
Monticello Seedling	6.0	7.7	7.0	8.3	8.3	7.5	
Barton	5.6	7.3	7.6	5.9	7.8	7.0	
Curtis	4.6	4.8	4.6	5.3	5.7	5.0	
	6.9						
Stuart		8.2	8.8	8.6	10.8		8.9
Cape Fear		7.4	6.5	7.6	10.2		7.7
Farley	6.6	6.8		6.4	7.6		6.9
Choctaw	6.7		9.0	7.9			8.3
Shawnee	6.8		6.7	5.7			6.7
Caddo	5.4		6.0	6.1			6.1
Mahan Stuart				11.8	12.1		11.4
Harris Super			9.0	9.9			9.6
President			7.3	7.2			7.3
Elliott	5.4			6.1			6.1
Enloe					8.6		7.8
Murhee				7.3			7.4
Forkett		7.3					7.1
Kennedy			6.7				6.8
Success			6.5				6.6

American Pomological Society Business Meeting

The Executive Committee of the *American Pomological Society* has scheduled a business meeting for all members *Sunday, August 19, 1973 from 3:00 to 5:00 p.m.*, at the University Student Center, North Carolina State University, Raleigh, North Carolina (the American Society for Horticultural Science will be meeting concurrently that week).