

The Origin and Development of Pecan Varieties

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The pecan tree is equalled by no other native American nut-bearing tree in all-round excellence. The tree is valued as an ornamental shade tree, however, its real economic importance is for nuts. The pecan industry has developed in the South and had an average value in the years 1972-74 of over 200 million dollars.

The earliest written description of the pecan was made by DeSoto, in 1541. He included in his recordings about the mighty "Mississippi" river he had discovered, a description of the "paccan" tree and its nuts. In 1722, d'Iberville described pecan trees in Natchez, Mississippi. In 1772, William Prince began to capitalize on the outstanding qualities of the pecan tree which DeSoto and d'Iberville had so lavishly praised. Prince planted thirty pecans, and ten seedlings emerged. He took eight seedlings to England where he sold each for ten guineas or twenty-one shillings.

In 1775, George Washington described pecans, saying they were something like pignuts, but larger, thinner shelled, and fuller of meat. Thomas Jefferson was very fond of the pecan tree and he included in his *Garden Book* of 1786, a detailed description of the "fascinating pecan tree."

Although there was much interest in the pecan prior to the 19th century, few people believed the nut could possibly attain the position of an improved orchard crop. This pessimistic notion was the result of the belief that nut trees, unlike apple and peach trees, could not be propagated by grafting. A. E. Colomb refused to accept this idea, and in the 1840's he attempted to propagate an exceptionally fine pecan by grafting. He failed, but did

not give up. He cut scions and took them to the owner of the Oak-Alley plantation, whose slave gardener, Antoine, succeeded in grafting 16 trees during the winter of 1846 or 1847. Thus, the development of named varieties began.

In 1882, William Nelson propagated pecans on an extensive commercial scale by grafting and budding root stocks. He offered the varieties 'Centennial,' 'Frotscher,' and 'Rome.' These were the first to be offered for sale. Slowly, but surely, pecan orchards began to be planted with grafted trees. Many orchards of older trees were top-worked by growers. Due to the success of grafting pecan stocks and the extensive introduction of improved varieties, the industry grew rapidly.

Concurrent with this development, the botanical classification has undergone abrupt alteration. The early French settlers called the pecan *Hicoria Pecan*. *Hicoria* was derived from the Indian word "powcohicora." This was the name of an intoxicating liquid they made by pounding the kernels and throwing them into boiling water. The liquid was then allowed to ferment. Pecan was derived from the Indian word "paccan," used to describe all nuts that were so hard a stone was needed to crack them.

In 1785, Humphrey Marshall, classified the pecan as *Juglans pecan*. Since that time, the pecan has been classified by other names as *Juglans illinoensis* and *carya pecan*. *Carya illinoensis* is the commonly accepted classification today. The pecan is a hickory and, along with the walnut, belongs in the Juglandaceae family.

Geographically, the pecan is native only in certain areas of the United States. It grows wild throughout most

of the Mississippi River Valley and its major tributaries. It is also indigenous along most of the important rivers in Texas and Oklahoma.

The cultural range of the pecan has been extended beyond the boundaries of its natural range eastward, northward, and westward. These extensions have been possible because pecan varieties have been developed capable of growing under different climatic conditions. Varieties have originated in three general ways:

1. Chance seedlings or selections from native stands.
2. Seedlings from known female varieties.
3. Controlled pollination when both parents are known.

Only a few of the numerous named varieties are considered worthy of extensive planting today.

A good variety should produce nuts of superior qualities. The largest size of nuts is not an important factor, since 90-95% of pecans are shelled before marketing. The kernel should have a high oil content, good quality, flavor, little fiber, and good keeping characteristics. The kernel should be straw-colored and plump. The shell should be thin enough to crack easily, yet be tough enough not to split during handling. The nut should be well shaped and display an attractive appearance. A desirable variety is not judged solely on its nut since three characteristics are very important.

A desirable cultivar should be characterized by early, prolific, and consistent bearing. It should have vigorous shoot growth and dense foliage. A tree with wide angle crotches is preferred over one with narrow angle crotches, since they are stronger and will carry heavy crops with less limb breakage.

Some pecan varieties have characteristics which make them more desirable varieties for certain areas of the country. In fact, pecan varieties are classified as eastern, western, or

northern chiefly upon their climatic adaptations (Tables 1, 2, 3).

Table 1. Pecan varieties named before 1900.

Variety	State	Year introduced
SOUTHEASTERN		
Alba	Fla.	1893
Alley	Miss.	1871
Biloxi	Miss.	1893
Beauty		1896
Black Jack	Fla.	1898
Bradley	Fla.	1896
Centennial	La.	1885
Curtis	Fla.	1886
Dalzell	Fla.	1888
Excelsior	Miss.	1896
Faust	S. C.	1892
Favorite	Fla.	1896
Frotscher	La.	1885
Georgia Melon	Fla.	1893
Harcourt	Fla.	1893
Hume	Fla.	1893
Jewett	Miss.	
Longfellow	Fla.	
Mammoth	La.	
Mexican Papershell	Miss.	
Mobile	Ala.	
Petite	Fla.	
Pooshee	Ga.	
Primate	Miss.	1893
Repton	Fla.	1886
Ribera	Fla.	1893
Rome	La.	1885
Russell	Miss.	1894
Stuart	Miss.	
Texas Egg	Miss.	
Turkey Egg, Jr.	Fla.	1893
Turkey Egg, Sr.	Fla.	1893
Van Deman	Miss.	
Valsies	Miss.	1896
Westbrook	N. C.	
WESTERN		
Biediger	Tex.	1896
Briden	Tex.	1896
Colorado	Tex.	1896
Daisy	Tex.	1881
Early Texan	Tex.	1893

Variety	State	Year introduced
Ibdlwild	Tex.	
Jumbo	Tex.	
Pearl	Tex.	
Post	Tex.	
Risien	Tex.	
San Saba	Tex.	1893
Texas	Tex.	1886
NORTHERN		
McCallister	Ind.	
Meyers	Mo.	1896
Nussbawner	Ill.	
Schneck	Ill.	1896

The Eastern varieties are adapted to environmental factors with high temperature and high humidity, and with many cloudy days throughout

the growing season. They are, therefore, less susceptible to scab and various foliage diseases than western or northern varieties.

Western varieties are better suited in a relatively dry climate. These varieties are usually highly susceptible to scab and foliage diseases. Eastern varieties may do well in the west, but western varieties will ordinarily not tolerate eastern conditions.

Northern varieties are exposed to a shorter growing season and must, therefore, be able to mature much sooner than eastern or western varieties.

Pecan varieties of the future must be precocious, heavy bearing, and suitable for high density plantings. Plant breeders will develop clones with suitable tree and nut characteristics for the pecan groves of tomorrow.

Table 2. Pecan varieties named 1900-1920.

Variety	State	Year introduced	Variety	State	Year introduced
SOUTHEASTERN			Havens	Miss.	
Appamattox	Ga.	1906	Ideal	Ga.	
Atlanta	Ga.	1900	Increase	Ga.	
Aurora	Ala.		Jacocks	Fla.	
Bacon	Ga.	1900	James	La.	
Bartow		1904	James Papershell	La.	
Belle		1904	Jewett	Miss.	
Beman	Ga.		Kennedy	Fla.	
Bolton	Fla.		Ladyfinger	Fla.	
Brackett		1900	Lamar		1904
Bullets		1900	Lewis	Miss.	
Capital	Miss.		Louisiana	Fla.	
Carman	La.		Magnum Bonum	Fla.	
Chiquita		1904	Major	Ky.	
Claremont	La.	1907	Mantura	Va.	1900
Delmas	Miss.		Monarch	Ga.	1900
Dewey	Fla.		Money	Miss.	
Domestic	Miss.		Moneymaker	La.	
Egg	Fla.	1900	Moore	Fla.	
Franklin	Ga.		Norris		
Georgia	Ga.				

Table 2. Cont'd

Variety	State	Year introduced	Variety	State	Year introduced
Pegram	La.		Halbert	Tex.	1901
Perfection	La.		Hollis	Tex.	
President	Fla.		Kincaid		
Randall	Fla.		Sovereign	Tex.	
Reuss	Fla.		Venus	Tex.	
			Wolford	Tex.	
Robinson	Fla.				
Russell #1	Miss.	1904	NORTHERN		
Russell #2	Miss.	1904	Busseron	Ind.	
Schaffner	La.	1904	Greenriver	Ky.	1915
Schley	Miss.		Hinton	Ky.	
			Indiana	Ind.	
Senator	Ga.	1900	Kentucky Gem		1902
Success	Miss.	1901			
Sweetheart	Fla.		Krack-Ezy	Ky.	
Taylor	Miss.	1901	Niblack	Ind.	1913
Teche	La.		Posey	Ind.	
			Warrick	Ind.	
Thomas	Fla.				
Twiner	Fla.	1900	REGION UNKNOWN		
Williams	La.	1903	Kidd		1904
Waukeenah	Fla.		Nelson		1905
Young	La.		Nigger		1904
WESTERN			Pan-American		1904
Bidwell	Cal.	1913	Robson		1904
Burkett	Tex.		Stevens		1900
Extra-Early	Tex.		Willingham		1904

Table 3. Pecan varieties named 1920-1974.

Variety	State	Year introduced	Variety	State	Year introduced
SOUTHEASTERN					
Brake	N. C.	1937	Kernodle	Ala.	1957
Caddo	Ga.	1968	Mahan	Miss.	1927
Cape Fear	N. C.	1941	Mahan-Stuart	Fla.	1956
Davis	Miss.	1921	McIntosh	Miss.	1921
DeSoto	La.		Monticello	Fla.	1956
			Murree	Fla.	1969
Desirable	Miss.	1930			
Draine Dream	Ala.	1920	Norwela	La.	
Elliott	Fla.	1925	Owens	Miss.	1930
Farley	Fla.	1925	Pensacola Cluster	Fla.	1960
Forkert	Miss.		Seminole	Fla.	1923
			Summer		
Gloria Grande	S. C.	1923			
Harris Super	Miss.	1960	Superdesirable	Miss.	1930
Hastings	Ga.	1955	Tucker's Favorite	Ga.	1927
Jennings	La.	1941	Wright	Miss.	1923

Table 3. Cont'd

Variety	State	Year introduced	State	Variety	Year introduced
WESTERN					
Aggie	Tex.	1960	Odom	Tex.	1923
Altman	Tex.	1925	Patrick	Okla.	1954
Anderson	Cal.	1963	Price	Tex.	1928
Apache	Tex.	1962	Ranger	Tex.	1960
Barton	Tex.	1953	Royal	Cal.	1949
Bowers	Tex.	1925	Sequin	Tex.	1948
Caloro	Cal.	1937	Select	Cal.	1948
Capers 64	Tex.	1955	Shawnee	Tex.	1968
Carmichael	Tex.	1930	Shoshoni	Tex.	1972
Cheyenne	Tex.	1920	Sioux	Tex.	1962
Chickasaw	Tex.	1972	Slybert	Tex.	1924
Choctaw	Tex.	1959	Swinden	Tex.	1923
Churchill	Tex.	1922	Tejas	Tex.	1973
Comanche	Tex.	1955	Texas 60	Tex.	1924
Commonwealth	Tex.	1927	Texhan	Tex.	1946
Cowley	Okla.	1966	Vogt	Tex.	1960
Dooley	Okla.	1945	Wichita	Tex.	1959
Evers	Tex.	1950	Willmann	Tex.	1940
Ewing	Ariz.	1944	Wilson	Tex.	1925
F. W. Anderson	Cal.	1963	Zajicek	Tex.	1925
			Zenith	Tex.	1927
Gormely	Okla.	1966	NORTHERN		
Govett	Tex.	1922	Chief	Ill.	1953
GraBohls	Tex.	1973	Colby	Ill.	1957
GraKing	Okla.	1959	Coy	Kan.	1939
GraPark Giant	Tex.		Duis	Ill.	1953
GraTex	Tex.	1962	Duvall	Md.	1952
GraZona	Ariz.	1968	Fisher	Ill.	1938
Halsy	Tex.	1924	Fritz		
Harper	N. M.	1967	Gallatin	Ill.	1945
Hayes	Okla.	1954	Giles	Kan.	1930
Humble	Tex.	1933	Coforth	Ill.	1934
Ideal	Tex.	1930-35	Hirschi	Mo.	1954
Imperial	Tex.	1962	Hodge	Ill.	1954
John Garner	Tex.	1934	Kilber	Mich.	1959
Kelly	Tex.	1925	Lawrence	Ill.	1937
Kuykendall	Tex.	1930	Peruque	Mo.	1953
Maramer	Okla.	1969			
McCulley	Tex.	1921	Stark Hardy Papershell	Mo.	1949
Melcher	Tex.	1924	Stark Hardy Giant	Mo.	1954
Mohawk	Tex.	1965	Steuck	Mo.	1932
Mount	Okla.	1966	Sweeny	Md.	1956
Nellis	Cal.	1932	Upton	Ia.	1924
Oakla	Okla.	1966	Witte	Ia.	1925

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Rootstock Research Foundation Helps Establish Four Field Trials

The Rootstock Research Foundation (RRF) was established by the International Dwarf Fruit Tree Growers Ass'n to promote the development of new, improved rootstocks for deciduous tree fruits. The central, long-range objective is to stimulate the breeding, screening and testing of stocks tailor-made for North America. A major short-range goal is to increase broad-scale field testing of new rootstock candidates.

Experimental rootstock plantings were made in 6 states in the spring of 1976, partly financed by RRF funds. The four trials set, their sites, and the experimenters involved are:

1. 'McIntosh' on Winter Hardy Stocks.

Virus-free 'Imperial McIntosh' are being grown on the USSR stocks 'Budagovsky 118,' 'Bud. 490,' 'Bud. 491'; and on the Canadian stocks 'Ottawa 3,' 'O.7,' 'O.8,' and 'O.11.' Well-replicated trials were set in Wisconsin (Frank Gilbert), Ohio (Dave Ferree), and New York (J. N. Cummins and Frank McNicholas).

2. 'Malling 27' as Rootstocks and as Interstem.

This very dwarfing new English introduction will be on our market in a few years, yet we have no American data on its performance. 'Empire' on 'M.27,' 'M.9,' and 'M.26' rootstocks and on the interstem systems 'M.9'/'MM.106,' 'M.27'/'MM.106,' 'M.9'/'MM.111,' and 'M.27'/'MM.111' were set in Massachusetts (Bill Lord), Michigan (Bob Carlson), Ohio (Dave Ferree), and New York (Jim Cummins).

3. 'MacSpur' and 'Imperial McIntosh' are being compared on the hardy stocks 'Malling 11,' 'M.26,' 'Ottawa 5,' 'O.8' and 'O.11.' Plantings were made in Vermont (Bertie Boyce and Joe Constante) and New York (Jim Cummins and Frank McNicholas).

4. Stanley Prunes on new candidate rootstocks, including several accessions from France, on *Prunus tomentosa*, and on some myrobalan selections were set in Michigan (Bob Carlson).

Trees for these plantings were produced by the Department of Pomol-