Cheyenne, A New Precocious Pecan Variety

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The USDA pecan *(Carya illioiensis Wag. K. Koch)* breeding program has been planned to meet the needs of all pecan-growing areas. An attempt is being made to produce varieties that are adapted to each of various climatic areas, and also meet high standards in nut size, quality, and other desirable characteristics.

Reports of progress on the USDA pecan breeding program, and reports on techniques of hybridization, propagation of hybrid seedlings to induce early bearing and evaluation of seedlings have been published elsewhere (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11).

There is an interest and need for additional precocious and prolific bearer varieties for high density tree plantings, especially in the western area of the pecan belt. There is a lack of protandrous blooming varieties. Cheyenne will help fill these needs.

Origin

Cheyenne, tested under the number 42-13-2, is a selection from a cross between the Clark and Odom varieties, made by L. D. Romberg at the U. S. Pecan Field Station, Brownwood, Texas, in the Spring of 1942. The parent nut was harvested and planted in 1942, and a bud from the resulting seedling was propagated to a branch of a bearing tree in August, 1943. The bud was forced into growth in April, 1944 and fruited in 1948. In 1953, and thereafter, scionwood of this selection was distributed to growers for trial purposes.

Performance

Extensive testing of this selection by grower coperators was initiated in 1965 in the western area of the pecan belt. Topworked trees at Brownwood have borne good crops since 1957. Large topworked trees of Cheyenne (6 scions per tree) at Goldthwaite, Texas, produced 66 lbs. of nuts per tree in the fourth year from grafting. The variety has performed well in the areas tested, predominantly the western part of the pecan belt, and its productivity compares favorably with other precocious varieties (Table 1).

Characteristics

The Cheyenne tree resembles the Clark in form, branching and leaf. Cheyenne exhibits profuse lateral branching, characteristic of the Clark parent and other highly precocious varieties. Nut maturity in the autumn is about mid-season for commonly grown varieties. Blooming is of the protandrous type, pollen shedding preceding the period of pistil receptivity; therefore, other varieties with opposite blooming characteristics (protogynous varieties) are needed to insure good pollination. Cheyenne is an excellent variety choice for interplanting with the protogynous or late pollen shedding varieties such as Wichita. The tree is highly precocious, comparable to Clark and Wichita in this respect, and a heavy bearer

Table 1. Comparative yields of Cheyenne with other precocious pecan varieties.

Variety	1969 Yield Lbs. Per Tree[1]	1969 Yield Lbs. Per Acre[2]
Cheyenne	66.5	2,327
Wichita	62	2,170
Sioux	55	1,925
Caddo	50	1,750

[1]Yield per tree for each variety above represents averages of 9 large twenty-year-old trees topworked in 1966 with 6 scions per tree.

[2]Yield per acre is based on a tree spacing of 35 x 35 foot squares or 35 trees per acre.

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of excellent pecans for shelling.

The nuts are moderately blocky in form, with blunt rounded ends (Figure 1). The apical end of the nut is slightly pointed. Dark stripes and splotches at the apical end of the nut on a clear brown shell background make the in-shell nut attractive to the eye. The nuts are of medium size. It takes 55 to 60 normal nuts to make up a pound, and they contain 57 to 61 percent of kernel. Because of the shape and internal construction, Cheyenne nuts are well adapted to shelling by commercial machinery. The kernels are relatively loose in the shell, the shell pieces separate readily from the kernels, and the parallel dorsal grooves are open and free of shell pieces upon shelling. A distinct characteristic of the variety is a slight wrinkling of the kernel surface. Kernel color is bright or above average compared to other standard varieties. Kernel flavor is considered excellent.

Cheyenne is introduced because of its precocity in bearing habit, protandrous blooming habit or suitability for interplanting with protogymous varieties in the west, and its ease of shelling with commercial machinery. Cheyenne is recommended for trial in central Texas and westward, but should not be extensively planted in the humid areas of the Southeast until more is known about its performance in that area. Cheyenne is recommended for planting as a temporary tree or in high density plantings where pruning to control tree size is practiced.

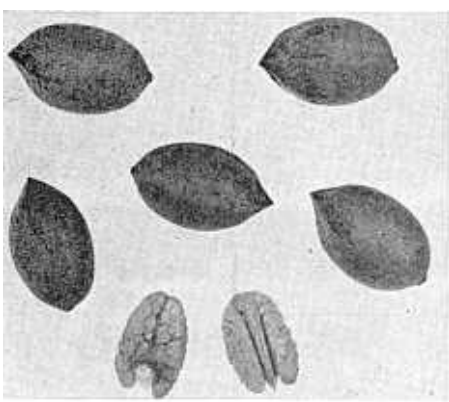

Figure 1. Nuts and kernel of the Cheyenne Pecan.

Other USDA pecan varieties, along with the year they were released, are as follow: Barton (1953), Comanche (1955), Choctaw (1959), Wichita (1959), Apache (1962), Sioux (1962), Mohawk (1965), Caddo (1968), and Shawnee (1968).

Literature Cited

1. Madden, George D. and L. D. Romberg. 1965. Promising breeding lines, and selections from the USDA pecan breeding program, Brownwood, Texas. Proc. Texas Pecan Growers Assn. 44: 49-56.
2. Madden, George D. and L. D. Romberg. 1966. Technique for propagation of young seedlings in the USDA pecan breeding program. Proc. Northern Nut Growers Assn. 57: 90-92.
3. Madden, George D. 1957. Breeding and development of pecan varieties for northern areas. Proc. Northern Nut Growers Assn. 58: 57-64.
4. Madden, George D. 1968. Potential varieties for the southeast through the USDA pecan breeding program. Proc. Southeastern Pecan Growers Assn. 61: 27-52.
5. Madden, George D. and L. D. Romberg. 1968. Pecans for everybody. *Texas Agricultural Progress.* 14(3): 12-14.
6. Romberg, L. D. and C. L. Smith. 1950. Progress report on the breeding of new pecan varieties. Proc. Texas Pecan Growers Assn. 29: 12-21.
7. Romberg, L. D. 1955. A progress report on pecan breeding. Proc. Texas Pecan Growers Assn. 34: 54-55.
8. Romberg, L. D. 1957. Research work at the U. S. Pecan Field Station, Brownwood, Texas. Proc. Texas Pecan Growers Assn. 36: 35-40.
9. Romberg, L. D. 1962. A progress report on pecan breeding at Brownwood, Texas, through 1961. Proc. Texas Pecan Growers Assn. 41: 117-121.
10. Romberg, L. D. 1965. Pecan breeding and related problems. Proc. Texas Pecan Growers Assn. 44: 44-48.
11. Smith, C. L. and L. D. Romberg. 1948. Pecan varieties and pecan breeding. Proc. Texas Pecan Growers Assn. 27: 18-26.