‘Nacono’ is a pecan [Carya illinoinensis (Wangen.) K. Koch] cultivar released 18 July 2000 by the Agricultural Research Service (ARS) of the U.S. Dept. of Agriculture (USDA), and the Texas Agricultural Experiment Station. Compared to other protogynous cultivars, ‘Nacono’ has superior nut quality. ‘Nacono’ has resistant to scab, known as the producer of the highest quality leased in 1970 (Brooks and Olmo, 1970). It is resistant to scab. ‘Nacono’ has precocity similar to ‘Pawnee’ and ‘Desirable’, but outyielded these cultivars in the 10th season (Table 1). The high yields shown in Table 1 during the eighth (1993) and 10th (1995) leaf are partially the result of large tree size compared to ‘Pawnee’ and ‘Desirable’ (Table 2). The 10th-year yield would convert to ≈ 1930 kg ha−1 with the spacing 10.7 × 10.7 m. Uniformity of production of ‘Nacono’ across years is largely unknown. NPACTS-B (Tables 1, 2, and 3) was essentially an unirrigated test since we did not have the capacity to water it adequately, especially during high-water-requirement periods. Trees experienced a severe drought during the latter part of 1993, followed by an early freeze of −2 °C on 31 Oct. 1993; that damaged the still foliated trees. Carbohydrate reserves were probably also extremely low due to drought and heavy nut load, so freeze damage was severe on many trees of other clones. Limbs of ‘Nacono’ were not damaged, but this resulted in very low yield in 1994 for all trees in the test. We know that throughout this test period, ‘Nacono’ excelled in producing a large quantity of quality nuts, even considering these environmental challenges.

When fruit number per cluster is compared with that of control cultivars (Table 2),

| Cultivar  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | Total |
|-----------|------|------|------|------|------|------|------|-------|
| Nacono    | 0.0  | 0.0  | 0.2  | 0.3  | 9.5  | 0.4  | 22.1 | 32.6  |
| Pawnee    | 0.0  | 0.2  | 0.2  | 0.2  | 8.5  | 1.2  | 12.4 | 22.6  |
| Desirable | 0.0  | 0.3  | 1.3  | 1.5  | 4.7  | 1.0  | 13.9 | 22.8  |
| Stuart    | 0.1  | 0.1  | 0.2  | 0.3  | 3.3  | 1.2  | 12.4 | 17.5  |

Table 1. National Pecan Advanced Clone Testing System yield data from College Station, Texas.1

| Characteristic | Nacono | Pawnee | Desirable | Stuart |
|----------------|--------|--------|-----------|--------|
| Nut weight     | 10.5 a | 8.3 c  | 9.2 b     | 8.9 bc |
| Kernel (%)     | 57.1 b | 59.9 a | 54.6 c    | 48.1 d |
| Kernel color   | 2.2 b  | 3.1 a  | 2.9 a     | 3.2 a  |

Table 3. National Pecan Advanced Clone Testing System data from College Station, Texas, comparing ‘Nacono’ to other cultivars for nut characteristics. Each mean is the average for 3 years and five replications of 10 nut samples.

Received for publication 18 Sept. 2000. Accepted for publication 4 Apr. 2001. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked advertisement solely to indicate this fact.

1Research Horticulturist.

2Research Geneticist.

Additional index words. Carya illinoinensis, cultivar, breeding, genetics.
‘Nacono’ is intermediate between ‘Pawnee’ and ‘Desirable’. ‘Nacono’ has about the same number of terminals with clusters as the control cultivars.

‘Nacono’ produces a large nut of exceptional quality (Fig. 1 and Table 3). Nut shape is ovoid with acute apex, and an acuminate (pointed) base. Nuts are round in cross section. Dorsal grooves are wide, allowing easy removal of packing material. The dorsal groove and basal cleft of ‘Nacono’ are almost absent, similar to that of the ‘Sioux’ parent.

Nut weight is ≈10.5 g, larger than ‘Pawnee’, ‘Desirable’, or ‘Stuart’. Nuts have ≈57% kernel, between ‘Pawnee’ and ‘Desirable’. ‘Nacono’ is an easy-shelling pecan, and produces a high proportion of complete or near-complete halves. Kernels are cream to golden in color, and are lighter than the control cultivars (Table 3).

‘Nacono’ trees are vigorous, with a branched central leader form that is similar to its ‘Sioux’ parent. ‘Nacono’ develops strong limb angles which are wind-resistant. ‘Nacono’ grows more rapidly than other cultivars (Table 2). The leaves are large, similar to those of ‘Sioux’ and other individuals of this cross family (74-5-60 and 75-5-6).

Time of spring budbreak is similar to that of ‘Pawnee’ and ‘Desirable’ (Table 2). ‘Nacono’ is protogynous (Type II), with early pistil receptivity and midseason pollen shed (Fig. 2). ‘Nacono’ should be a good pollinator for, and well-pollenized by ‘Pawnee’, ‘Desirable’, and ‘Cheyenne’. Time of nut maturity is midseason at College Station (11–21 Oct.), or ≈8 d before ‘Desirable’ and 12 d before ‘Stuart’.

‘Nacono’ is moderately resistant to scab disease, and should be adapted to all pecan-growing areas where ‘Desirable’ can be grown, especially under a typical chemical scab-control program. In tests at College Station (Table 2), ‘Nacono’ appeared to have about the same level of leaf scab resistance as the control cultivars, but was significantly more resistant to nut scab than ‘Pawnee’ and ‘Desirable’.

‘Nacono’ has medium susceptibility to black margined aphids (Thompson and Grauke, 1998). At College Station, ‘Nacono’ and ‘Stuart’ demonstrated similar resistance to this insect, but these two cultivars were less resistant than ‘Pawnee’ and ‘Desirable’. Since susceptibility to one species of aphids in pecan seems to indicate susceptibility to another species (Kaakeh and Dutcher, 1994), growers should monitor black aphid susceptibility in this new cultivar.

Availability

Budwood and graftwood will be supplied in 2001 only to nurseries. All requests should be directed to the senior author. The USDA does not have trees for distribution. Some budded or grafted trees should be available from nurseries for planting in early 2002.

Literature Cited

Brooks, R.M. and H.P. Olmo. 1962. Register of new fruit and nut varieties. List 17. Proc. Amer. Soc. Hort. Sci. 81:568–600.
Brooks, R.M. and H.P. Olmo. 1970. Register of new fruit and nut varieties. List 25. HortScience 5:383–390.
Grauke, L.J. and T.E. Thompson. 1996. Pecans and hickories, p. 185–239. In: J.A. Janick and J.N. Moore (eds.). Fruit breeding. III. Nuts. Wiley, New York.
Grauke, L.J. and T.E. Thompson. 1997. Pecan, p. 544–562. In: The Brooks and Olmo register of fruit and nut varieties. Amer. Soc. Hort. Sci., Alexandria, Va.
Hunter, R.E. and D.D. Roberts. 1978. A disease grading system for pecan scab. Pecan Quarterly 12:3–6.
Kaakeh, W. and D. Dutcher. 1994. Probing behavior and density of Monelliospis pecanis, Monellia caryella, and Melanocallis caryaeoliae (Homoptera: Aphididae) on pecan cultivars. J. Econ. Entomol. 87:951–956.
Thompson, T.E. and L.J. Grauke. 1991. Pecans and other hickories (Carya), p. 839–904. In: J.N. Moore and J.R. Ballington (eds.). Genetic resources of temperate fruit and nut crops. Intl. Soc. Hort. Sci., Wageningen, The Netherlands.
Thompson, T.E. and L.J. Grauke. 1998. Field resistance to yellow aphids in pecan. J. Amer. Soc. Hort. Sci. 123:85–90.
Thompson, T.E. and E.F. Young, Jr. 1985. Pecan cultivars: Past and present. Texas Pecan Growers Assn., College Station.