

Pecans and Hickories for Kentucky Landscapes

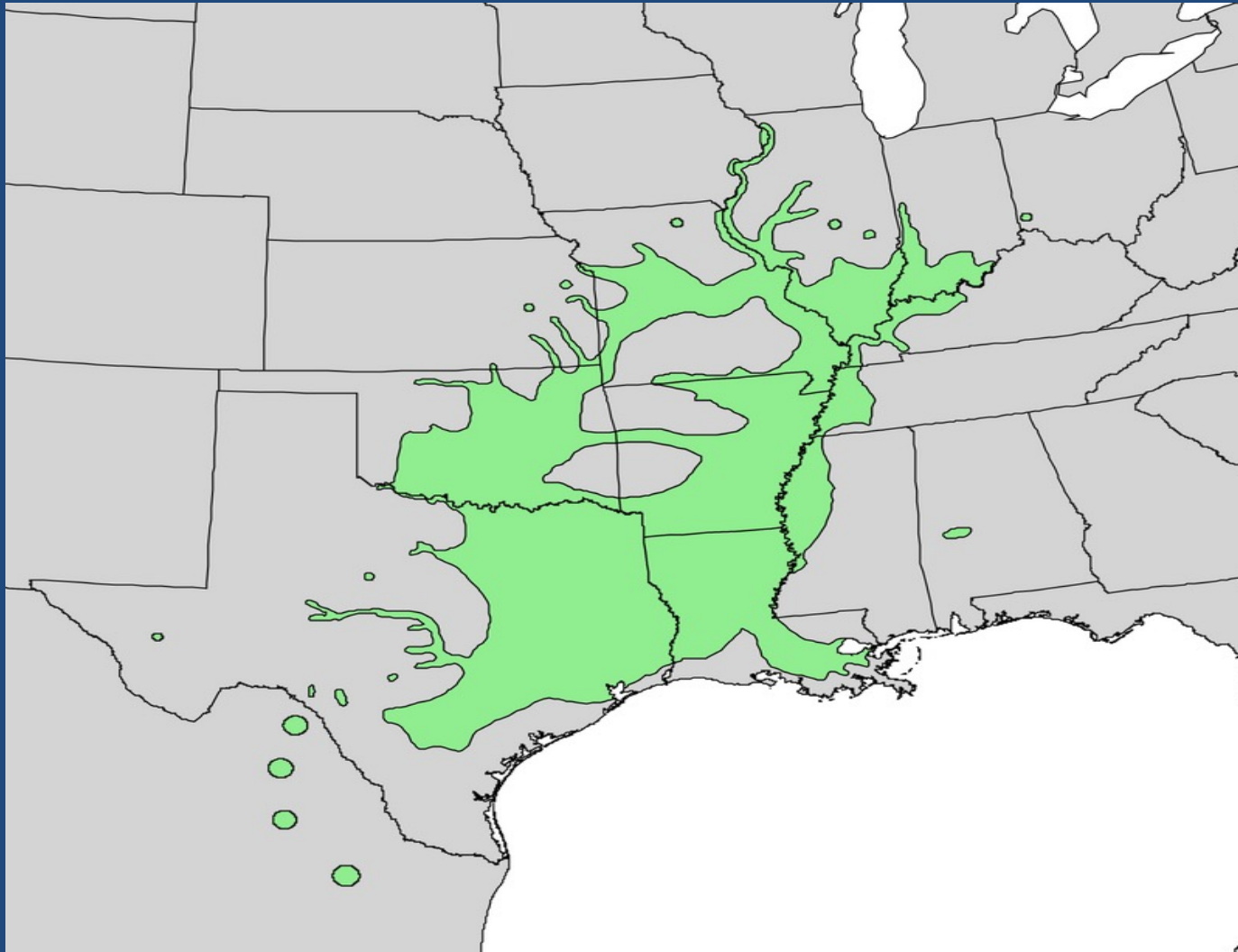
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- Pecans and hickories are tree species native to Kentucky, which have historically been underutilized in landscape plantings, and have largely been ignored as a potential 'alternative' agricultural cash crop.
- Members of the genus *Carya*, they are long-lived trees which make excellent yard/lane/pasture trees, and provide tasty, nutritious nuts, while also hosting a wide variety of wildlife.



Pecan – *Carya illinoensis*



- Pecan is native to far-western KY, primarily along the Ohio River and Green River.
- Productive pecans for KY are primarily of the Northern/Midwestern type – nuts are smaller than most ‘Southern’ pecan varieties, and mature in a shorter growing season. These nuts typically have higher oil content and better flavor than many Southern pecan varieties
- Some of the pre-eminent Northern pecan cultivars, such as ‘Major’ and ‘Greenriver’, originated in the Green River delta near Owensboro.

- Pecan performs best on deep, well-drained, 'creekbottom' type soils with pH of 6.0-7.0, but can perform adequately on more upland sites, if supplemental irrigation is provided.
- Pecan is a large tree, 70-100+ ft tall and 45-70 ft wide, at maturity. Growth rate is moderate, ranging from 2-5 ft/yr for young, nonbearing trees to 6-12 inches/yr for older, bearing trees.

- Pecan does not 'breed true' from seed. Time from seed germination to first nut crops may vary from 15-25 years.
- Majority of productive commercial pecans are grafted – nut size/quality, disease/pest resistance, and management needs will be 'known entities', and grafted trees typically come into production in half the time, or less, than seedling trees.

- Pecans are monoecious (both male and female flowers present on the same tree), but express dichogamy (male and female flowers not active/receptive at the same time), so are mostly non-self-fertilizing.
- Pollenization is wind/airborne; no insect pollenators required.
- For best nut crops at least one each Type I (protandrous) and Type II (protogynous) pecan are needed in order to ensure adequate pollination.

Pecan 'flowers'

Staminate (male) Catkins



Nutlet (female) flowers at tip of new shoot



Pollination Types:

Type I: short, thick

Type II: long, slender



Pests/Diseases

- Pecan scab - fungal infection affecting leaves twigs, nuts. Most economically significant disease; heavy infections may destroy nut crop. Home/low-input plantings should place major emphasis upon selection of scab-resistant cultivars. Commercial pecan orchards often practice extensive spray schedules to control scab and minimize crop losses.
- 'Major' pecan, which originated in KY, has been used extensively by USDA, KS St. U., and private individuals in pecan breeding programs, as it possesses and passes on excellent scab resistance to many of its offspring.



Major

Kanza

Lakota

Hark



Pecan Weevil & Stinkbug



Other, lesser, pests/diseases

- Twig girdler
 - Black & yellow aphids
 - Fall webworm
 - Powdery mildew
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- The above can be unsightly, and occasionally problematic, but pale in comparison to scab, weevil & stinkbug damage



Cultivar selections for KY

- Northern/Midwestern types best, some NorthernXSouthern selections may work in warmer areas with longer growing season.
- Type I: Major, Hark, Warren 346. (Liberty, Caney, Thayer, St. Paul – KSU breeding program – for trial)
- Type II: Kanza, Lakota, Posey, Greenriver, Oswego (Labette, Earlton, Pleasonton – KSU – trial)
- Other selections may work; some may require fungicidal sprays
- Avoid Southern varieties like Stuart, Mahan, Desirable... not suitable for KY growing season, and scab-susceptible.

Major BW 102-18 1995



USDA ARS Pecan Breeding and Genetics

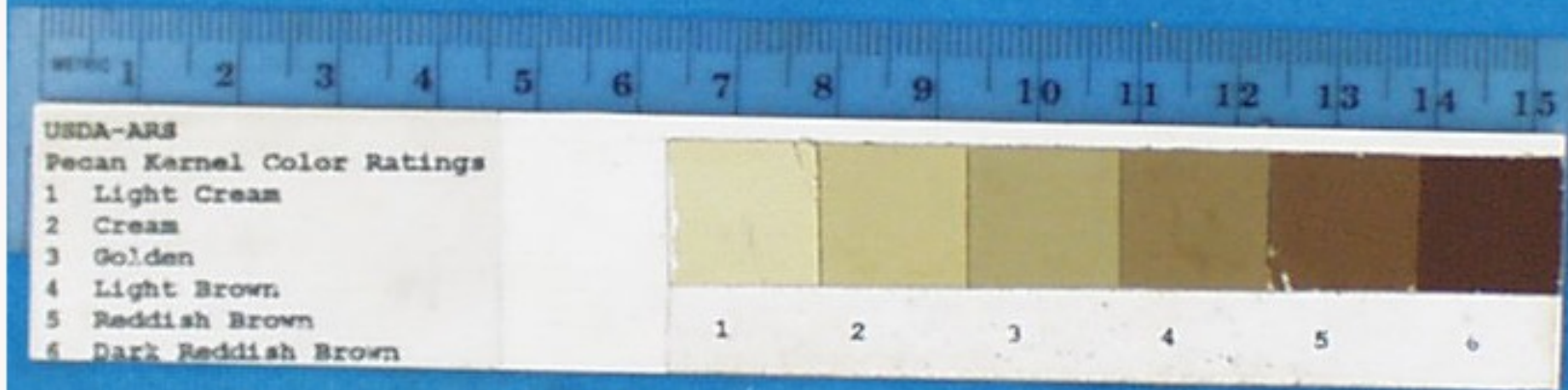
Posey BW 106-33 1995



2006

CSX 8-4

'Lakota'





- Productive nut trees are heavy Nitrogen feeders... split/multiple fertilizer applications are recommended.
- Zinc deficiency is an issue in some growing areas, but not typically a problem in neutral to acidic soils.
- Minimal pruning is required for most pecans – early ‘training’ to central leader and removal of branches with acute angles/bark inclusion, etc.
- Young trees should be protected (tubes, cages) from deer browsing and buck rub.
- Ideal mature spacing – 50-60 ft

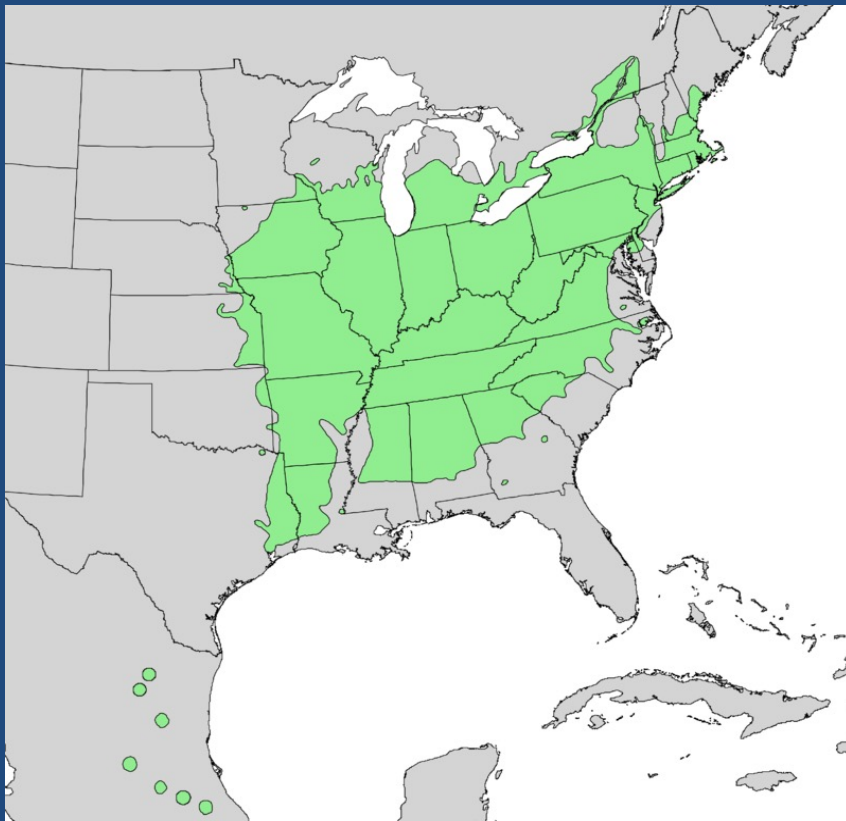
Resources

- Kentucky Nutgrowers Association - \$5/yr dues; 2+ meetings/yr., semi-annual newsletters
- Northern Nut Growers Association - \$40/yr, online quarterly newsletter, annual meeting, 115 yrs of annual meeting proceedings available on flashdrive
- Facebook pages – NNGA, KNGA, Backyard Pecan Growers, etc.

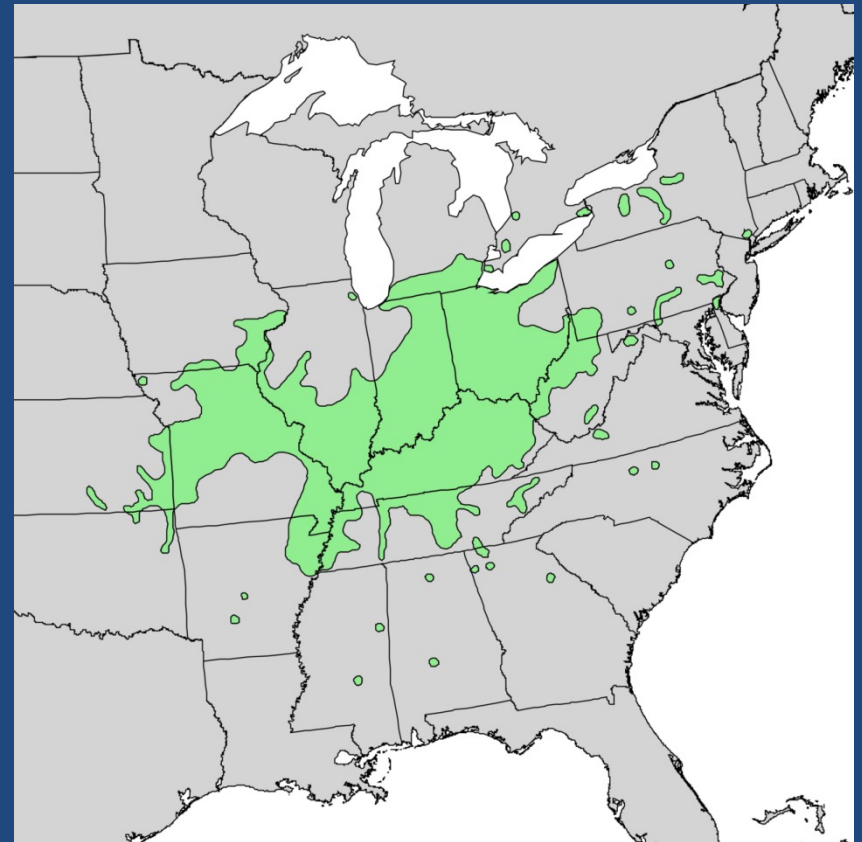
Hickories

- Shagbark (*C.ovata*) and Shellbark (*C.laciniosa*) hickories are the two most desirable hickories with regard to nut production, and are both native to Kentucky.
- Shagbark is an 'upland' species with slow to moderate growth rate.
- Shellbark is a 'bottomland species, with moderate growth rate, comparable to pecan.

Shagbark Hickory



Shellbark hickory



- Hickories are monoecious and exhibit varying degrees of dichogamy, but many are self-fertile, though crops are improved if multiple varieties are planted to provide cross-pollination.
- Shagbark and shellbark can cross pollenize and hybridize with one another, as well as with pecan and bitternut hickory, resulting in 'hicans'.
- 'Major' pecan is actually a complex hican, having gene markers common to bitternut hickory, shagbark hickory, and nutmeg hickory in its makeup



Shagbark Hickory

- Interesting 'shaggy', exfoliating bark on mature specimens; fabulous golden yellow fall leaf color.
- Unfurling leaves in spring resemble tulips.
- Nuts are light colored, with hard, but relatively thin shell. Nut kernels flavorful with high oil content.
- Mature tree: Height to 90 ft, 50-70 ft spread.





"Lorane" shagbark

- Shagbark seedlings have long juvenile period – 20-25+ yrs to bearing. Grafted trees bear in half that time.
- Many ‘improved’ varieties have been introduced... almost all have been chance finds from the wild.
- Hickory cultivars are typically grafted onto seedling pecan or shellbark rootstock. Pecan rootstock appears to ‘push’ growth farther into the season than hickory, and may foster development of slightly larger nuts

Shagbark cultivars for KY

- Grainger (TN), Lorane (PA), Ernest (NY), J. Yoder #1(OH), Porter (OH), Lizzie Mtn. (NC), Sinking Fork (KY), Happy Hollow (KY), Polly's Bend (KY), Cook (KY), Wurth (KY), Wilmoth(KY), Weschke (MN- shagXbitternut)
- All the above have thin shells &/or kernels crack out mostly intact halves/quarters.

Shellbark hickory

- Often called 'kingnut' hickory, river hickory, big scaley-bark hickory
- Large tree at maturity, 60-100+ ft tall
- 'Shaggy' exfoliating bark – not as prominent as on Shagbark hickory
- Nuts are large, brown, have good flavor, but lower oil content than shagbark





Pests/Diseases

- Few significant disease/pest issues other than pecan/hickory weevil.
- Twig girdlers can be occasionally be a problem.
- Pecan scab may be present, but rarely causes noticeable crop damage.
- ‘Hickory Horned Devil’, the caterpillar of the Regal moth, utilizes hickories as a host plant.



Shellbark cultivars for KY

- Shellbark cultivars typically grafted onto seedling pecan or shellbark rootstock.
- Simpson #1 (KY), Lebanon Junction (KY), Garnett (KY), Mitch Russell (KY – shagxshell), Fayette, Brouse, Holterman, Bull Nut, Rausch, Big Cypress, Excelsior Springs

- Seedling hickories may take 20+ years to come into production.
- Seedlings of named cultivars, from orchards with multiple improved cultivars present, may have a very high likelihood of producing nuts with quality similar to that of the parent varieties.



Sdlg #1



'Fayette'



Sdlg #2



Sdlg #3



Sdlg #4





Sources

- Grafted nut trees have historically been difficult to find. Many growers have learned to graft their own.
- Rock Bridge Trees, Bethpage TN, offers a great selection of grafted northern pecan & hickory varieties.
- Perfect Circle Farm, Berlin VT, offers grafted northern pecan & hickory.
- Grimo Nut Nursery, Niagara-on-the-Lake Ontario, offers grafted northern pecans & hickories.

Hicans

- Naturally-occurring hybrids between hickories (shagbark or shellbark) and pecan
- Hican trees are vigorous growers, and are quite handsome, but...
- Production is low/shy, and most years, the majority of nuts are poorly-filled 'blanks', and 90+% of nuts will be weevil larvae-infested.
- I personally only recommend hicans for people with large acreages who don't care if they get edible nuts or not...



Nutcrackers and Miscellany

- Numerous designs and models of nutcrackers will work well for pecans.
- Hickories will require well-constructed hardshell nut crackers – Mr. Hickory, Kenkel, Get Crackin', Master Cracker, Grandpa's Goody Getter, etc.
- 'Hickory Syrup' can be made by boiling strips of exfoliating bark (or nutshell fragments), straining, adding sugar and cooking down to desired thickness.