

In “North American Hickory and Hican Nut Growers” Facebook Group

June 20th 2025:

Have y'all noticed any patterns in hickory seedlings for identifying species and hybrids? I'd love to hear your observations. Here are a few that my notes and theories of these first year seedlings:

Shags, bits, and shells all seem to produce highly dominant 3 leaflets. Pecans are highly dominant 1 leaflet. Pecan hybrids are a mix from 1-5 leaflets. It appears that southern genetics shags may produce taller seedlings. Shellbarks produce very wide and large terminal leaves. Henke is notably short for a pecan hybrid much more similar to a shagbark type nut. Some badgersett hybrids produce taller seedlings than others and some seem to throw more leaflet variants.

I am flagging outlier leaflet numbers so that when I dormant dig, I can know which ones are more likely to have complex genetics in the cross. I hope this can be yet another way of better utilizing open pollinated seed.

Edit: The pecans appear to have paused growth at the same time as the rest of the hickories and they are pushing more growth now while the rest are still paused. The pecans are now flushing with 5+ leaflets. Very interesting different stages to their first season...

June 3rd 2025:

Do y'all ever see stigma abortion? Some trees don't do it much. I saw one that aborted 5% of stigmas and sometimes not both stigmas on the same nutlet. One tree which happens to have the 3rd best nut at badgersett appears to abort stigmas on about 90% of nutlets; it is the one in the last photo and the tree has historically never borne more than a small crop but it is loaded in nutlets.

I believe this indicates wide genetics in the tree itself as a mother that makes its own haploid dysfunctional. I am willing to bet that it will not pass this trait to its offspring in large numbers.

There are a lot of reasons for a tree to not be productive in nut production and this yet another means. Many of the low productivity trees at badgersett set intense female flower crops. Why aren't they bearing? Wide genetics self incompatibility? Pollen incompatibility? Lack of pollen partner (many of the biggest nuts flower very early but there are only 2 very early pollen shedding trees on site)? Or simply self regulation? Could be any but the point is that it is hard to judge a tree so early in hybridizing.

I flagged good and bad nutlet clusters on both trees to follow them over the year to learn more over the next months. Note that this appears different than stigma insect damage and I do see some of that.

May 15th 2025:

Note the small aborted catkins just inside the bud scales. Spring abortion of catkins appears to be common in bitshags/shags and is a separate feature from pollen sterility. Catkins are likely differentiated the year prior but the tree has another opportunity to decide if it would like to shed pollen. These photos are from multiple trees. Note that some have both aborted and developed catkins on one bud. Another regulatory mechanism.

The last photo is of a tree that reliably produces 4 pronged catkins rather than 3. This tree was the only tree last year to do this and I have not observed this trait on any other trees to date.

April 4th 2025:

Hickory epicotyl grafts 1 year old from seed overwintered. This was my first year of hickory epicotyl grafting success. I will hone it in the next couple of years until it reduces cost and increases quality compared to the standard potted grafts methods used ubiquitously today that take, most often, 3 years to grow a salable grafted tree. What will these epicotyl grafts look like in 2 more growing seasons like those 3 year old grafted trees we get in pots?

The last photos are of black walnut epicotyl grafts 1 year old. Note that the walnuts are healed very well around the circumference of the graft which takes 2-3 years with most other grafts on this species.

Feb 14th 2025:

Hickory Oil Analysis Take-Aways:

- This report shows very clearly that the Omega 6:3 ratio is a lot higher in shagbarks than bitternuts. Bitternut oil has a typical ratio of 3.5-4.5. Shagbarks appear to have a typical ratio of 15-25. That said, shagbarks are not a good source of Omega 3s. Bitternuts are a good source of Omega 3s at about 2.5x more omega 3 by weight than shagbarks. It should be noted that hazelnuts are a poor source of omega 3s and have a high ratio around 90. Pecans are 21ish and English Walnuts are 4ish. Olive oil is 10ish. Sunflower oil is even higher. A lot of people don't subscribe to the ratio health claims so take this with a grain of salt.
- The oily soft feeling of a nut does not appear to be a good indicator of actual oil content. The mouth feel was an horrible indicator of oil content in black walnuts as well. Flavor and feel of the kernels does not link to fatty acid proportions in any way I can figure out.
- The data leads me to believe that shagbarks may have more oil content than bitternuts by 5%. There are factors could have affected the bitternut samples having lower oil extraction though so I can't say this with certainty yet. The data suggests but does not prove that shagbarks have 65-70% oil generally and bitternuts have 60-65% oil generally.

- The saturated fat content of bitternuts and shagbarks both range from 12-14%
- Shagbarks are typically 55-60% oleic acid (25-30% polyunsaturated). Bitternuts are typically 70% oleic acid (15-20% polyunsaturated).
- Black walnuts have an omega ratio of between 10-14 and are very high in polyunsaturated fat, making their oil prone to rancidifying. BWs are typically around 55% polyunsaturated fat, 7% saturated, and 30-40% oleic acid.
- Undeveloped nuts have higher polyunsaturated fat proportions and lower overall oil content. The moisture content of undeveloped/unfilled nuts is higher due to lower oil content; this will be an incredibly important fact in sorting nuts with IR sorters which are standard in the nut industry.
- Harvesting nuts before they are ripe leads to low oil content.
- Roasting before pressing and hot/cold pressing temperature do not appear to affect fatty acid proportions at all.

The photo is irrelevant and just for attention. And it is a pretty print of two of my favorite, large pressable, hybrid hickories.

Thanks to the anonymous person in the hazel world who hooked me up with a one time oil analysis cheap!

Feb 18th 2025:

I had a sales person in Louisiana test two of my Badgersett selections in his Meyers style hickory cracker. Snack Shack showed very high promise for cracking and shelling in their machinery. Optical or IR sorting would be the next step and then all we have to do is sell it. This video gives me the confidence to say that the coming of hickory kernel is near.

Do not confuse this with wild shagbarks or cultivar seedlings cracking well in this cracker. Every nut has its own nut physics and the meyers is designed for the nut physics of pecans and we got lucky with Snack Shack.

I will have an update on my Lineage Nut cracker shortly. I fixed the issues with indexing and doubled the speed. It can now crack a nut every 2 seconds and is more likely to work well for a broader spectrum of shagbarks.

Dec 20th 2024:

Before Levi and I experimentally pressed hybrid hickory, i thought they had potential for presscake milking and nut butters from sediment paste. After pressing these raw hybrids, we see that they have a much butterier and rich hickory flavor than raw yellowbud. They taste incredible. Nobody will not like this stuff.

Roasting yellowbud brings out a good amount of this hickory buttery flavor but there are challenges with this; we blew up one press head experimenting with this and we think roasting and letting the nuts cool may have been the cause. We should be able to figure this out. But the hybrids are easy, roast free incredible.

Dec 22nd 2024:

I have been waiting so long to milk hybrid hickory presscake only to be disappointed.

After a few experiments, ive come to believe that roasting shagbark shell changes the water soluble flavor profile associated with the shell fraction in a negative way. And pressing the nuts has the effect of roasting the shell when it comes through the gap and nozzle into the presscake.

Even the floating kernel from the roasted milk had uptaken some of the acrid tanic flavor and darker color of the roasted shell.

This is all quite interesting to me i was expecting additional flavor from roasting the kernel but could not taste or smell any of the typical roasted shag flavor underneath the negative shell aromas and flavor.

After milking, I dried the kernel from the roasted and unroasted milk to see how flavor compares to the raw low moisture kernel and found that almost all if not all of the hickory aroma and flavor was taken out in the water but the buttery flavor that we tasted in the hybrid hickory oil was present. I think these milked dried kernels could be useful in pesto and baked goods but my partner and I both agree that they will not attract much market attention or command the high prices of the shagbark and pecan nuts but may be nice to have in our home.

The raw shell tastes like a fairly pleasant tea but im not a big fan and i dont think it will attract much attention in the market. Pure kernel was spectacular in a sweet desert way without any savory complexity of the raw shell fraction. The thick musalage texture of the milk comes entirely from the kernel fraction.

So im disappointed but better know the limits of shagbarks and hybrid hickories.

An Addition: it may be possible that a lower temp sweet spot roast or pressure canning could allow for the roast kernel flavor without that added harsh flavors of the 350F roasted shell. I proved last week that pressure canning bittternuts at 15psi (~250F) for 30 mins is capable of producing the maillard reaction to a similar or greater aromatic profile than 350F for 20mins. Pressure canning nuts also should have to property of keeping the moisture content identical; this is not necessarily useful but very interesting.

Jan 27th 2025:

We have very important news for the hickory. We can nearly perfectly, if not perfectly, sort out bad nuts on a small to coop scale for a cost of \$334 of parts. I am calling this invention the Lineage Float Table to call in the people who are teachers to me and that led to this invention, namely Sam Samuel Thayer, [Erik Hagan](#), Philip Rutter, Bill Whipple, and Carl Weschcke.

This technology works best when the nuts are of a relatively uniform moisture level that have already been winnowed or aspirated to clean out debris. It will work both after harvest and mid-winter prior to cracking even on mixed variety/wild type bags for shags, hybrids,

and yellowbud. Note that moistening nuts and then letting them surface dry prior to cracking is helpful for extracting larger kernel pieces and a pre-crack soak is standard in the hickory/pecan industry so the wetting of nuts is not of concern to kernel quality. The amount of moisture absorbed by this process in my conditions increases moisture content about 1-2% only. I estimate that you can sort about 50 gallons of nuts an hour depending on batch quality.

To the best of my and my communities knowledge, this is a new invention and it has the capacity to drastically accelerate hickory cracking, oil pressing, and milking procedures. It would be very helpful to receive support for inventing this technology in order to continue hickory technology development. If want to support other ongoing developments, please send a gift to my venmo @Alex-Tanke. Thanks!

Parts Total Cost is \$334 for all commercial food grade parts including the jacks, levelers, stainers, pumps, wave suppressors, etc. Email me at dispersionfarms@gmail.com for the parts list.

Also, note that many many devices were trialed prior to inventing this to find that none worked well with low collateral, low storage risk issues, high accuracy, reliability, context tolerance, and consistency including gravity tables, air aspirators, winnowing processes, normal water floating, and water soaking.

Update: I have still not found a bad nut after taking out the bad ones with this device. That said, I have found 2 weevils in my milk. I think that these ones that passed through were the type of nut that had a weevil but the weevil only ate a small portion of the nut and the kernel never got moldy; these nuts seem to be less of a health safety concern. And if we grind our milk well enough, the consumer will never know.... lol

Nov 8th 2024:

I am not generally one to say a hickory variety is good... I think a lot of what has been propagated and named is garbage or at best okay. After a trip down to see Jim and Ben at Spurgeon's I have 4 varieties that I can say are good:

Country Club (Hican): 3.6g@46% kernel. Excellent production, excellent cracking. Side-side crack or rolling crack as with a crowding plate pecan cracker. Candidate for automated cracking with normal small scale pecan crackers. 80% halves with easy extraction like a good pecan. Shag aroma, rich pecan flavor, Late. I would not plant farther North than Indianapolis. Great and reliable fill.

Vernon (Hican): 4.5g@52% kernel. Excellent production. Excellent cracking. Great pecan flavor with shag hints. 80% halves with side-side cracking or rolling crack like crowding plate pecan cracker. Candidate for automated cracking with normal pecan cracker. Head-tail crack works quite well too. Late. I would not plant farther North than Indianapolis. Pressable for oil in shell. Great and reliable fill.

Henke (Hican): Not worth considering unless in the far North due to kernel size. Excellent production. Early. Good pecan flavor. 2.2g@45% kernel. Good pecan flavor. Great crack.

80% halves with side-side cracking or rolling crack like crowding plate pecan cracker. Candidate for automated cracking with normal pecan cracker. Great and reliable fill.

Mick Terry / Gary? (Shellbark/Bitternut hybrid?): Only a breeding tree; not for production. Good yields. Late. I found this nut grafted in IA in the 30s/40s so it must be a very old variety. Good crack out 50% easy extraction. 80% finger extraction. Kernel development issues common. Good shellbark flavor. 5.0g@50% kernel. Pressable for oil in shell.

I would not recommend Clarksville or Underwood. Cody Cox was good and yielded well at 3.7g@40% kernel. I do not recommend Wilcox nor Sylvis 303. Porter is incredible. Grainger is good.

I will say this is just one years evals. Hickories change their nuts to some extent from year to year and yield changes too. Nonetheless, A good nut this year, may be a good nut next year. A bad nut this year may be an unreliable good nut on other years. I have observed 7% change in kernel percentage between years on 2 trees now; hybrids seem more capable of changing nut morphology. Last year was generally up 2-3% from typical, this year seems to be generally down 2% from typical at my 2 main sites.

I will have Badgersett and Weschcke Hickory evals done in 2 weeks and will post about that soon. There are definitely some selections there that make it into the top tier of nuts along with Country Club and Vernon but that can grow very well as far in Minnesota and Wisconsin. Two highlights are

Shiver: 3.4g@53% kernel. Good crack h-h. 50% easy 90% extraction with fingers. 40% halves, 40% quarters. Pressable for oil in shell. Full bearing habits not yet known but capacity to bear heavily in on years. Pollen sterile.

Snack Shack. Excellent crack. 2.1g@42%. Heavy bearing habit. Yielded 25gals of nuts this year on 40x40ft spacing equivalent. Great shag flavor. Out of 10 nuts, I got 16 halves on first crack with easy fall out extraction. Oily kernel. Candidate for automated cracking.

September 3rd 2024:

These are photos from experimental preharvest burns at badgersett. Burns were done under chestnuts and hickories. This was from this weekend. Mowing was done with a 4ft sickle bar on a bcs. Pilings were linear because the shroud pushes the hay to the sides of the actuator on the bar. A larger bar would make for a much better carying fire, id intuit. Mowings were cured for 3 days and burnt from 2-5p at 50% relative humidity in the shade. I raked the perimeter as the firebreak. This raking of the perimeter took much less time than mowing. Leaves get fried as would normally expect of fire if it is too close to the ground. I did the hickory burn, which was the much scarier burn by myself with a rake, a lighter, and a backpack waterpack; this was not unreasonable or unsafe to do so. It would be nice to burn with another person though.

Chestnut understory was mostly orchard grass and mixed forbs. The mixture is based off previous mowing and soil nutrient levels. This burnt okay but not very cleanly.

The hickory area was mainly smooth brome and goldenrod. It burnt very well. Sections that were mowed once in the spring during first hay did not carry the fire well. The fire easily escaped burn breaks in this ecology. Fire was easy to put out due to the grasses still being green when it escaped.

This is all to trial what possibilities there are in a 1 sickle mow prior to harvest and burn ecology. We could have a much richer ecosystem with these methods than perpetual mowing during the year.

All burning experience and rules and patterns for spring burning applied well during summer burning except it is a lot safer.

Also, at this site, 3 sickle mows annually with closed canopy hickories is adequate for nut wizzarding with winnowing. 2 is good for hand picking. Closed canopy could be a low input, lower yield way of managing hickory understory.

I will be trialing native grasses sedges and forbs in a one mow one burn hickory production ecology going forward.

If you are interested in working with me in person for harvest season, propagation season, or year round, please message.

August 14th 2024:

Snack Shack from Badgersett. Historic annual bearer of heavy crops. No limbs have broken yet for this 40 year old tree but she looks close. And pollination was poor this year it appears. About 50% of flowers became fruit. Shagbark style husks weigh down branches; individuals with thinner husks seem to be able to carry more crop without drooping or breaking limbs. We have a long way to go with dual purpose hybrid genetics still in the realm of husk thickness reduction.

Also, i do believe Snack Shack is a hybrid due to its slightly longer than shag peduncle though she offers no other signs other than insane heavy bearing.

August 1st 2024:

Peduncle: the ephemeral stem that holds the nuts to the wood of the twig.

I have been tracking down the differences in peduncles between shagbarks, yellowbuds, pecans, and hybrids. It is an interesting production related trait and it also appears helpful in identifying hybrids with shagbark which can be difficult. From observing the hybrid individuals at badgersett, Weschcke's, and in the wild, it appears that yellowbud x shagbark hybrids backcrossed to shagbark express:

-dominant 5 leaflet numbers

- dominant presence of bud scales
- dominant shagging bark
- dominant shagbark-like leaf expansion prior to pollination
- dominant hairs on leaf serrations
- intermediate heritability of wings on the mature husk
- intermediate spring expansion bud scale “flower” size
- intermediate terminal bud size and shape
- intermediate heritability of kernel percentage (I suspect hybridity in any nuts I find wild in WI over 45% kernel)
- generally larger nut size than either parent
- intermediate productivity and bearing patterns between the two species generally
- intermediate husk thickness

-AND, what is relevant to this essay is intermediate peduncle length

*note: genetic testing will be completed on many hybrids this winter to better answer these questions of heritability

*other note: I believe, for reasons that are too long to explain in this post, that most shag hybrids with yellowbud would be mistaken for a pure shag.

Shagbarks appear to bear the vast majority of their nuts very tightly to the woody stem with an almost non-existent peduncle. I have noticed some shagbarks will sometimes bear one nut (and suspiciously rarely two nuts) on a longer, skinnier peduncle and they are always set at the very end of this peduncle; this is not uncommon in the wild but I see less than 1% of nuts born in this manner and certain trees appear to make this long peduncle more than others.

Yellowbud tends to bear on a medium length peduncle about 1-1.5 cm long with nuts distributed along the length of the peduncle. From my limited experience with pecans, they appear to bear on an even longer stem and also spread along the stem. It is intriguing to me that black walnuts also bear nuts on a long peduncle even though their nuts are also heavy and large like shagbarks.

I’m not saying that a longer peduncle is better (though it does seem to offer the tree more bearing potential per tip) but it is a means of inspecting hybrid status without genetic testing. Take the “Weschcke” variety for example. Everyone thought it was a pure shag until Carl realized she was pollen sterile, suggesting she is a hybrid. Still today, the variety’s hybridity is contested. I am of the belief that she is a hybrid for 5 suggestive reasons. She is:

- pollen sterile (suggesting F1 or F1 backcross)
- highly productive (suggesting yellowbud genetics)

- has a very spreading form compared to typical shags (yellowbud genetics)
- her bark is a bit tighter than what should be expected of a shag (more typical in hybrids)
- AND MOST SUSPICIOUSLY: her peduncle is longer than can be expected of a pure shag. Most people would never notice this subtle feature but check out the photos.

I wish I could say that the case is closed, but for now, many nut experts still doubt that “Weschcke”, “Nielson”, “Shiver”, “Vest”, and so many more hickories are hybrids. I believe that if we keep digging into the differences between bitternut and shagbark, we will be able to see hybridity much more clearly.

Please share your observations with me either over message or in the comments.