

Missouri Chapter News

Walnut Council: Growing Walnut and Other Fine Hardwoods



A Word from the President:

Bob Ball



"The Land Conservation Ethic" is the theme of the 2018 Walnut Council annual meeting July 29 - August 1 at the Grand Harbor Resort, Dubuque, Iowa co-hosted by the Iowa and Wisconsin Chapters. I urge each of you to consider attending this meeting to learn more about your organization

from a national perspective. I will be there, and I hope you can join us in our Missouri Chapter group photo! The announcement was mailed to all members, but you can also view the program and register at the national website: www.walnutcouncil.org We are considered to be one of the top chapters within Walnut Council, but there is a lot to learn from visiting the other state chapters and seeing their forest resources.

The summer months are an ideal period to review your management plan, make any needed revisions, and develop task lists for the months ahead. Our Missouri heat together with ticks and chiggers are disincentives to working in the woods during July and August. If you have not picked up your woodland management plan for some time, I urge you to find it now! If you still do not have a plan, reach out to a professional forester and begin the planning process.

Lenore and I were recently in our nation's capital. Thanks to the support of Congresswoman Vicky Hartzler's D.C. staff we were able to tour both the White House and the Capital Building. We were proud to see that both the US House and US Senate chambers are lined with walnut paneling and the rostrums are walnut as is the beautiful hardwood paneling in the Rayburn Reception room. In Honor of retiring Indiana US Senator, Richard Lugar, a black walnut tree was planted on the grounds of the Capital several years ago. I encourage you to visit our nation's capital and view the walnut there both inside and out!



Bob and Lenore Ball recently met with Vicky Hartzler, U.S. Representative for Missouri's 4th congressional district.

Earlier this spring I mailed letters to the ten members of the Missouri Congressional delegation expressing our concern with certain aspects of draft language in the Farm Bill focusing especially on the Conservation Reserve Program



View looking back at the White House showing these monster oaks. Well suited soils!

(CRP). These letters have triggered follow-up conversations with staff members of our national delegation.

Our fall event will be held near Mount Vernon and Neosho on Friday, October 5th and Saturday, October 6th. Look for preliminary details about this meeting elsewhere in the newsletter. Mark these dates on your fall schedule and plan now to join us!

Know the Signs of Dicamba and 2,4-D Damage

Compiled By: Jerry Van Sambeek & Aaron Twombly

The herbicide dicamba has been making the news recently following the release of dicamba-resistant soybeans. In December of 2017 a man from Arbyrd, MO was even convicted of murder over a feud about dicamba drift and the damage it had caused to his crops and pear trees. Although not typically used in forestry, forestland owners need to be familiar with the signs of dicamba and 2,4-D damage due to the possibility of drift from neighboring properties growing soybeans and cotton. Although dicamba and 2,4-D have been around for more than 50 years, their use has increased dramatically due to the introduction of soybeans and cotton that have been genetically engineered to be resistant to dicamba or 2,4-D as well as glyphosate. Due to herbicide damage from drift to non-resistant crops, ornamentals, and trees, Missouri has placed limits on when/how the new formulations of dicamba and 2,4-D can be used¹. Forestland owners are encouraged to report damage caused by herbicide drift to the MO Department of Agriculture so they can determine if limits need further modification to protect our trees. Kevin Bradley, MU Plant Scientist, believes off-target movement of dicamba on vegetables, ornamentals, and trees will be even more prevalent in 2018 than it was in 2017. As of June 21, the MDA has already investigating 69 reports of alleged dicamba injury of which 20 reports involve trees¹.

An ongoing study at the University of Missouri in which seedlings of 18 fruits and trees were sprayed with 1/2, 1/20th, and 1/200th the recommended rates of the new dicamba and 2,4

-D formulations found walnut to be extremely sensitive to 2,4-D with low sensitivity to dicamba. Tables 1 & 2 list the sensitivity of the different species that were tested².

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Figure 1: Dicamba damage after 14 days (top) and 28 days (bottom)

Low ($\leq 10\%$ Injury)	Moderate (10-20% Injury)	Extreme ($\geq 20\%$ Injury)
Walnut	Maple	Elderberry
Raspberry	Oak	Peach
Hydrangea	Apple	Grape
Crabapple	Strawberry	Dogwood
	Rose	Redbud
	Sweetgum	Viburnum
	Elm	
	Pecan	

Table 1: Sensitivity of various species to injury from driftable fractions of Dicamba products

Low ($\leq 10\%$ Injury)	Moderate (10-20% Injury)	Extreme ($\geq 20\%$ Injury)
Strawberry	Elm	Grape
Apple	Rose	Dogwood
Raspberry	Sweetgum	Walnut
Maple	Pecan	Viburnum
Crabapple	Peach	Oak
Hydrangea		Elderberry
		Redbud

Table 2: Sensitivity of various species to injury from driftable fractions of 2,4-D products

International Attention

Our very own Harlan Palm has been featured in past news articles about his work with Walnuts, but we recently discovered that Palm was featured in a news article covered by Qatar based news group Al Jazeera! In the 2013 article the headline reads "Could a flea-size beetle bring down a \$1 billion industry?" and covers the threat of Thousand Cankers Disease. View the article [by clicking here](#).



Photo Credit: Ryan Schuessler

Establishing & Managing Black Walnut on Idled Acres

I Wish There Was More Walnut...

Written By: Harlan Palm

The most recent Walnut Council Bulletin (Vol. 45 pg. 8) exemplifies the result of reforestation and, in some cases, afforestation. It describes how dairy cattle and other livestock no longer graze along creek bottoms. Various oak species and some black walnut are now in these forests. **I bet the landowners wish there was a higher percentage of black walnut!**

This is exactly what I have seen while doing timber stand improvement (TSI) along creeks on several farms. Some farmers who focus only on grain crops no longer have livestock that previously grazed along the creek bottoms or they have fenced cattle out of the creeks via the EQIP program. The population of walnut in such locations is dependent on an existence of scattered walnut seed trees in that immediate area. Squirrels carry nuts approximately 75 yards from the seed tree. Birds scatter soft mast species like cherry, hackberry, and mulberry, while wind spreads sycamore, maple and elm species.

While walking a timbered area with the farmer / landowner along the Loutre Creek, we saw several very nice walnut with 20-30 foot clear trunks in small areas but then we passed through areas of relatively worthless sycamore, soft maple, elm and hackberry. The farmer said, "I sure wish there was a more consistent population of walnut". He said his father had discontinued farming the narrow creek bottom for efficiency reasons. All I could say was, "it's too late to add walnut now as seedlings would not get enough sunlight to survive".

Because walnut require full sunlight to thrive, they need to be seeded or planted within the first five years or so after a site has been idled (no longer cultivated or grazed).

Many of the walnut trees that get started within that initial five years develop 20-30 foot of clear and straight trunks that are better quality than most plantation trees. On deep alluvial soils, walnut can keep up with most tree species except for sycamore, cottonwood and possibly soft maple. Once there is a mixed stand of young hardwood species on an idled site, it is helpful for the walnut if the faster growing species are rogued out. Let the other species remain in place. They will shade out some of the invasive brush while competitively forcing the young walnut to grow straight up. The adjacent competition also shades the lower walnut branches so that natural pruning occurs. Manage the competition so that walnut are about 15% taller than surrounding trees.

Many of the farmers feel remorseful or wasteful for idling a small productive piece of their farm simply because it is difficult to get to with today's large equipment. A little bit of effort in managing the growth of the most valuable trees adds pride to the family farm.

Missouri Black Walnut Initiative

Written By: Bob Ball

The "*Missouri Black Walnut Initiative*" is a promotion by the *Missouri Chapter, Walnut Council* to encourage establishing and managing black walnut growth on idled acres of well suited soils. Walnut trees on your land could become a significant source of income for your family and future generations. Well managed walnut trees can be considered like a savings account to utilize when there is need. The outlook for future market value of walnut products is very good.

The increase in width of modern farm equipment resulted in many small, isolated areas of prime farmland soils. Those sites can be *VERY* productive growing one of the most valuable tree species known in the world... eastern black walnut! These trees may be growing on **your** land already just waiting for your care!

With funding from the "*David Risberg Memorial Grant*" available through the Conservation Federation of Missouri, the Missouri Chapter, Walnut Council, is financially able to launch this promotion reaching out to landowners with the best soils in Missouri for growing black walnut. This Initiative falls within our chapter's mission of "encouraging the management of privately owned forest resources in Missouri". All chapter members will receive two Initiative brochures through regular mail. We ask that you retain one for yourself, but personally give the second one to a neighbor, friend, relative, or a fellow landowner who appears to have soils well suited for growing black walnut. Upon request we will gladly provide you with more brochures! Help us reach landowners and to make them aware of their opportunity to grow and manage this valuable species on their land for future generations!



Well suited soils for growing black walnut along the Auxvasse Creek in Callaway County are ideal for growing your "woody portfolio".

Why Plant Trees...at your age?

By: Bob Ball, Woodland Landowner

The most common question I get is **“Why plant trees at your age?”** That always grabs my attention, and I am certain it bothers you as well. Now, if you are someone asking me that question, first, ask yourself:

1. If yours is a family farm would you be grateful today if your father or grandfather had planted Black Walnut, Oak, Black Cherry, or other fine hardwoods that could provide a harvest income every 12 – 15 years (and with little due in taxes because much of it would be long term capital gains)?
2. If you were buying a farm, would you pay more for a farm with fine hardwoods where the owner, based on the reports from a consulting forester, could demonstrate the regular increase in value of the hardwoods? If you were to sell your farm with fine hardwoods, would this not increase the investment potential of the farm and therefore the price you received?
3. In the future will your children or grandchildren be grateful that the harvests of the fine hardwoods that you planted paid for college, a down payment on a house, or a car, truck or tractor?
4. After you are gone, when your spouse, children, or grandchildren choose to sell the farm would they be thankful for the significantly higher price they got for the farm because you were wise enough to plant fine hardwoods?
5. Years from now will you be thought of as the wise neighbor who provided for his family by planting fine hardwoods or the other neighbor who did not?

My usual response takes a more philosophical approach versus a treatise on “the benefits of trees”. Robert Louis Stevenson said, *“Judge each day, not by the harvest you reap, but by the seeds you plant.”* You can point to online websites that illustrate and describe the many benefits of trees. Instead, I tell folks my belief is to leave the land in better condition than when I began managing it. When trees are planted in the right soils on the right sites, they can improve the value of land in addition to achieving all their other benefits. Maybe John Chapman (Johnny Appleseed) had that in mind as he walked the Midwest planting apple seeds for future generations.

What I find most troubling is the fact those asking the question are really saying *“What’s in it for you?”* *“You will never see a return on this expense in your lifetime and possibly in the lifetimes of your children, so why do it?”* Must we always consider a ‘return on investment’ for everything we do on our land? If so, how frustrating!

Personally, I enjoy planting trees. As I’m working I have this vision of what those seedlings may become one day. We are aware of the many benefits trees afford our ecosystem, but planting trees each spring or fall fills a niche in my life, and I know it does for you also. It’s hard to place a dollar value on a feel-good activity that will appease cost-conscious folks. For those who rely more on the bottom line than a belief in soil stewardship, I offer my farmer’s approach to justifying my actions.

It is very common for cropland farmers to idle some of their most productive acres along meandering streams and creeks because the farming implements they use make it difficult to navigate in tight, irregular areas. Sometimes access is limited and crossing a stream with a large combine and grain wagons is just not possible. So, farmers carve out the larger blocks of bottomland fields for corn and soybeans while the acres closer to those streams become idle lands converting to weeds, then brush and likely invasive species. Those soils are often the very best for planting black walnut! Depending on the landscape and soils, red and white oak species may be ideal for some sites as well. Remember, when selecting your planting species to **“consider the soils first”**.



This uneven aged stand of volunteer walnut on the Harlan Palm tree farm in Callaway County was established by natural regeneration in what was a Kentucky bluegrass pasture along the creek. Imagine how those trees must look today with ten more years of growth! What would you pay per acre to own a plantation like this?

The “fair market value” of idle land planted to hardwood trees should increase over time until the trees are harvested assuming they avoid natural disasters like wind storms, hail, and insect infestations, disease, or man-initiated crisis like arson. Yes, there is some degree of risk! Something else to consider is the “assessed value” could decrease over time in accordance with the Missouri Department of Revenue “Agricultural Land Productive Values”. If Grade #1 cropland is reappraised by your county assessor as Grade #6 Forest Land because of the growing trees, you are removing those acres from crop production and lowering the assessed valuation. This is another example of how planting trees could save landowners a few dollars in property taxes annually while the fair market value continues to rise. Admittedly, this change in classification will not make you rich, but the increase in value of those trees may bring a smile to someone’s face when the time is right to harvest those trees!

Assuming your planting site is idle land and not cropland in production, do your best to informally determine the fair market value of that land. You may need the assistance of your county

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assessor, local realtor, your banker, Farm Credit Services loan officer, or the U.S. Census of Agriculture which is available online at: <https://www.agcensus.usda.gov/>. Search for the "Estimated market value of land and buildings – average per acre" for your county. This will be found within the 2012 Census which is the last published report. **Note:** The 2017 Census is underway now. Once you have a beginning value per acre, work up from that.

Begin enhancing that determined starting value by adding the cost of your trees, labor, herbicides and related establishment costs on a per acre basis unless you are fortunate to have a natural regeneration process taking place. Document your methodology in case someone ever questions your valuation, or more importantly, if someone else in your family wants to continue with these calculations after you are gone. This approach assumes your land use decision is to convert that idle cropland to forest land. With your newly calculated (and estimated) current dollar figure per acre in mind, seek advice from a professional forester to determine what they believe is the increased annual value per acre in your plantation once the trees are established. While they are at it, ask them to determine a Timber Tax Basis for this new plantation that gives you a critical base line for one day determining capital gains while growing this timber. Then, years hence, it may warrant you to again have a forester carryout a follow-up appraisal to verify the increased valuation over time. Make certain your spouse and heirs are aware of this revised value per acre for the planted acres because that new value, along with your documentation, can be a marketing feature if those acres will be sold before the timber is ready to harvest. This increase in value over time becomes your return on investment.

Not to be overlooked is the fact some of our best opportunities to grow and manage a "plantation" is from natural regeneration that results in uneven aged stands of volunteer walnut. No manual planting required! Thanks to teams of squirrels you have the great fortune of only needing to prune, thin and maybe apply some weed control on these sites then watch your walnut and other fine hardwood stock increase in value. What a deal!



Walnut Council member, Harlan Palm, with this excellent black walnut tree growing on idled cropland in Callaway County. There are dozens of very nice walnut trees in this same site that are being pruned and thinned annually.

Which type of property sale do you intend to leave your heirs?

"FOR SALE – Small parcels of idle acres, along streams and creeks with brush and undetermined species of woody vegetation."

OR

"FOR SALE – Well managed black walnut plantation on prime farmland growing quality timber at an above average rate of growth."

Periodic evaluations or reappraisals are recommended to help document a logical increase in property value from the growth of those trees AND to capture likely changes in market values over time. In summary, you do not need to wait 40, 50 or more years to see financial growth from planting trees. Like stocks, your trees can increase in value before they are sold. You may not have actual cash in hand from a timber sale yet, but your planting stock has increased in value on paper and those trees are increasing in volume at an exponentially faster rate. Plus, all those other virtues of trees are improving our ecosystem! One day, those acres may even qualify for carbon credits. They did once; they may well be eligible again one day!

For those individuals still questioning the cost outlay of tree planting in relation to an annual return on investment, there are forms of financial assistance available from USDA, Missouri Department of Conservation, and the Missouri Department of Natural Resources to assist landowners in applying conservation practices such as tree planting and site preparation. Over time those practices maintain or even improve our soil, water, air, plant and animal resources improving our ecosystem. Financial assistance funds are intended for situations where the cost of those activities exceeds the landowner's capacity. It has been determined within USDA the environmental benefits from tree planting often justifies financial assistance to

help landowners in completing practices they otherwise may not be able to complete.

Regardless of your reasons for planting or managing trees, now is the time to finalize your decisions. Contact a professional forester now, develop a planting or management plan and order your trees if needed for planting yet this fall or in the spring of 2019. For your convenience in ordering trees, here is a direct link to the Missouri State Nursery: <https://mdc.mo.gov/trees-plants/tree-seedlings/order-seedlings>

About Missouri Chapter News

Missouri Chapter News is distributed to members of the Missouri Chapter, Walnut Council. The newsletter is intended to keep members informed about timely events while also distributing general information about the management of fine hardwoods. Members are encouraged to provide feedback about this outreach approach and suggest topics for future issues. Comments and suggestions can be emailed to [Aaron Twombly](mailto:Aaron.Twombly), Chapter Secretary. During the year we will also distribute "technical articles" on specific topics of interest to woodland landowners. Both the newsletters and technical articles will be archived at our [chapter website](#).

Signs of Damage

Dicamba and 2,4-D are part of a larger group of broadleaf herbicides that includes picloram, 2,4-DP, and MCPP which act as plant growth regulators³ or super-auxins. Because they abnormally regulate plant growth, symptoms are most pronounced on new growth following exposure. Symptoms can include leaf distortion including cupping, curling, abnormal elongation of leaf margins (epinasty) and parallel leaf venation. New shoot growth may be twisted and flattened rather than round or angular. Leaf necrosis, dieback, and mortality may be evident in severe instances especially with dicamba and picloram. Leaf and twig distortions from these growth-regulator herbicides may look similar to late spring frost injury.

Typical injury of black walnut seedlings at 14 or 28 days after spraying is shown for Xtendimax (dicamba + glyphosate) in Figure 1 and Enlist Duo (2,4-D + glyphosate) in Figure 2 at half the recommended rates for weed control in resistant soybeans and cotton. Dosages were intentionally higher than expected from drift to better assess injuries and sensitivities.

¹ Bradley, Kevin. Integrated Pest Management Online Reports; <https://ipm.missouri.edu/IPCMI/>

² Photos & sensitivity charts courtesy of Michele Warmund, Extension Fruit Specialist, and from an online Power Point presentation with Brian Dintelmann and Kevin Bradley, Division of Plant Sciences, University of Missouri; https://www.greatplainsgrowersconference.org/uploads/2/9/1/4/29140369/2018_gpgc_trees_evaluations_of_dicamba_and_24-d_injury.pdf.

³ Fraedrich, B.R. Diagnosing and Preventing Herbicide Injury to Trees. Bartlett Tree Research Laboratory Technical Report TR-43. Online at <https://pace.oregonstate.edu/courses/sites/default/files/resources/pdf/diagnosing-and-preventing-herbicide-injury-to-trees.pdf>



Figure 2: 2,4-D damage after 14 days (top) and 28 days (bottom)

Save these Dates

Friday & Saturday, October 5-6, 2018

Our fall meeting will be held in the Southwest region. Here is a sneak peek at the activities planned:

Friday starting at 1pm: MU Southwest Research Center

The Center is well known for beef, dairy, and forage research, as well as horticulture and agroforestry. Black walnut, pecan, hickories, and other tree crops are grown in orchard settings for nut and fruit production as part of numerous long-term research projects. We will be hosted at the Center by Andrew Thomas, Research Assistant Professor in the Division of Plant Sciences, who has worked there for 22 years. We will tour the nut orchards, as well as other horticulture / agroforestry research projects underway.

Friday Evening:

Dinner in Mt. Vernon with possible evening program

Saturday:

It has been 6 years since the Walnut Council has visited Dennis Evan's direct seeding project near Neosho. Activities will include: A tour of the site and discussion of the advantages and disadvantages of direct seeding. Planting the correct species of trees on the correct soil will be discussed. A field exercise of selecting trees for removal, including removing walnut trees.

In the plantation area of the farm, we will review the CCF (crown competition factor) spreadsheet that Michael Williams has been testing and discuss why certain trees were selected as crop trees.

We will have lunch at the nearby historical Jolly Mill site. After lunch we will tour Robert Haskins walnut stand and stream bank restoration projects.