

green horizons

Growing tomorrow's future today.

May 2015

A newsletter from the Center for Agroforestry in
conjunction with the Forest and Woodland Association of Missouri

Volume 19 • Number 2
Mike Gold, Gene Garrett and Savannah Kannberg,
editors

AGROFORESTRY

The Right Tree in the Right Place

By KIM YOUNG | *Forrest Keeling Nursery*
WAYNE LOVELACE | *Forrest Keeling Nursery*

You can take a seed out of the south, but can you take the south out of the seed? To trees, there is something to that old saying “There is no place like home”. Within a seed is a plant’s “internal clock,” or provenance. Provenance is the origin or the original source of the seed. Provenance is coded by a plant’s cycles of growth and reproduction, which are influenced by climatic zones, temperature and moisture zones.

This genetic coding dictates time of flowering, leafing, fruiting and dormancy for the seedlings that will germinate from its seeds. When planted outside of the mother plant’s climatic zone, offspring may not perform to full potential. Trees grown from seed collected from Southern sources will inherit the clock of the parent tree, which bud and leaf earlier than their Northern counter parts (see photos). Trees grown from seed collected outside of a geographic area may perform fine for many years, but when we experience an extreme weather event (e.g., late spring frost, extreme low winter temperatures), these trees are at high risk for damage and may not survive.

Trees in nature adapt to their specific climate and growing conditions. Provenance is a long- term genetic code passed from parents to offspring that is developed through generations of natural selection. Critical traits such as plant hardiness, drought resistance, and flood



Differences in leaf emergence due to provenance. Photos taken April 15, 2015 in Elsberry, Mo., which is, on average, the last date for frost in mid-Missouri. Left image, pin oak from seed of Southern origin; at right, pin oak from seed of local origin.

tolerance are all inherited from parent trees. The gradual process of natural selection also encourages disease and pest resistance in future generations of plants. Successful establishment and development of healthy trees is dependent on a tree’s innate ability to adapt to environmental fluctuations and extremes.

We have observed an increase in the number of planting projects requiring native plants grown from local seed sources. Most projects request plants grown within a geographic area of approximately 150 miles. Foresters prefer that seedlings for reforestation not be moved more than one hardiness zone north or south of the native stand where seed originated. It is also of importance to track seed from flood plains and seed from upland sites. We recently observed seed collected from two trees of *Diospyros virginiana* (Persimmon). The seed collected from an upland area germinated

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FOREST CONSERVATION

Conservation Federation of Missouri: The voice for Missouri's great outdoors

By BRANDON BUTLER | *Executive Director, Conservation Federation of Missouri*

As the first few rays of sunlight slid through the stand of giant oaks to the east of my ground blind, the forest came alive around me. An owl hoot triggered a turkey gobble. Squirrels began to chatter and frolic. Deeper down the holler, a deer snorted. The purple flowers of eastern redbuds began to stand out from the crowd.

I can't claim to know much about the science of forestry. I couldn't even guess the financial value of a tree. Truthfully, I can't even identify all the trees on my property. What I know, what I understand, is the intrinsic value of a forest. The feeling of serenity found deep inside the trees is alluring, and it draws me back as often as time affords.

You surely know more about forestry than I do, but there's a good chance I know more about catching trout on a dry fly than you do. You see, we may not have the same primary passions that drive us to be conservationists, but that's good. If we are to protect all of our natural resources in Missouri, then we need individuals to support their diverse specific interests.

Greater than the individual though, is the collective whole. Missouri needs the individuals representing specific interests to be unified as a collective, powerful voice fighting together for all of our natural resources. The Conservation Federation of Missouri (CFM) has been doing this since 1935.

CFM is the "Voice for Missouri Outdoors." We are a Federation in the truest sense of the word. CFM is made up of over 80 affiliate organizations that represent conservation interests as diverse as forestry, wildlife, fisheries, air quality, water quality and more. Our affiliates may not always agree on each specific issue, but collectively the membership of CFM believes in the importance of conserving our natural resources for the benefit of future Missourians. We stand united behind this belief and strive to always work towards our mission,

which is: To ensure conservation of Missouri's wildlife and natural resources, and preservation of our state's rich outdoor heritage through advocacy, education and partnerships.

Early members of CFM were instrumental in the creation of the Conservation Commission, which you recognize today as the Missouri Department of Conservation, and the passage of the one-eighth cent Conservation Sales Tax. If Missourians shall continue to live in a state with thriving forest, fish and wildlife resources, then today's citizens must be engaged in the process of protecting our unique system of authority from ongoing attempts of some who are determined to undermine what most American conservationists refer to as the greatest state conservation agency to ever exist.

From 1935 until today, Missourians have been working to restore and conserve our state's natural resources and wildlife species. Missouri has once more become a land rich in game and habitat. We only have these resources because of the citizen conservationists who came before us. They restored our natural resources. Now we must conserve them for our children and our children's children. Please do your part. If you're not already a member of the Conservation Federation of Missouri, joining today would be a great start.

Membership is only \$35 per year and joining online is a quick and simple process. Simply visit www.confedmo.org/join

"You see, we may not have the same primary passions that drive us to be conservationists, but that's good. If we are to protect all of our natural resources in Missouri, then we need individuals to support their diverse specific interests."



SOIL + WATER CONSERVATION

The role of the DNR: Reducing Nonpoint Source Pollution in our Missouri Water

By ROBERT STOUT | *Missouri DNR*

The Missouri Department of Natural Resources (department) is the agency in Missouri responsible for protecting Missouri's air, land and water. The department's responsibility is to keep pollution out of Missouri's water. We have made strides in reducing pollution from permitted sources, but nonpoint source pollution offers significant challenges.

When we hear the terms point source and nonpoint source pollution, what do these terms mean? We call the wastewater that is discharged from a facility, such as a sewage treatment plant or the discharge from a power plant or industrial facility, point source pollution. It is usually a regulated discharge from a treatment system that must meet the conditions spelled out in a Missouri State Operating Permit. Nonpoint source pollution, in contrast, is untreated pollution that generally cannot be traced back to a single source. We rely on voluntary efforts to address this type of pollution. Often, nonpoint source pollution can be traced to multiple sources (both natural and manmade) within a watershed, such as storm water runoff, agricultural/land disturbance activities, or faulty septic systems. It is critical that we understand that we collectively influence nonpoint source pollution and what we can do about it.

Nonpoint source pollution is responsible for most of the water quality impairments in the United States. Nonpoint source pollution occurs as rainfall, snowmelt, or irrigation that runs over land or through the ground and picks up pollutants such as nutrients, road salt, and sediments. These pollutants are then deposited into rivers, lakes, and coastal waters or introduced into ground water, resulting in ecological impairments to aquatic ecosystems. Nonpoint source pollution is widespread and associated with numerous activities, including agriculture, forestry, grazing, septic systems, recreational boating, urban runoff, and construction.

The department has begun to look at the problems of water pollution through a watershed-based approach that we call Our Missouri Waters. Watersheds are drainage basins. They are systems that



Photo courtesy of Dick Schultz, Iowa State

An agroforestry riparian buffer offers both financial gain and ecosystem services.

are influenced by the people who live and work in them. Pollution in a watershed affects where we can fish and swim, how clean our drinking water is, and whether we have sufficient clean water for agriculture and industry. The department understands that our role is to provide technical information, listen to our citizens input and priorities and help provide solutions to address those priorities. Local participation and partnerships are the keys to successfully addressing these problems. When we understand the problems, we can identify the resources and actions that can be taken to successfully address them.

Continues on page 4 >

‘The role of the DNR’

< *Continued from page 3*

There are many actions that can help reduce nonpoint source pollution:

- We can use best management practices in our work and home activities.
- We can install rain gardens and bioretention and infiltration basins to reduce runoff.
- We can maintain riparian buffers to help filter pollutants and reduce erosion.
- We can institute planned grazing and watering practices.
- We can create wetlands to capture and treat pollutants.
- We can follow good nutrient management strategies.

All of these activities can contribute to significant reductions of sediment and nutrients.

The department has several programs that can provide technical and financial help to citizens and partners who want to address these problems. The department’s Soil and Water Conservation Program operates a cost-share program, which provides incentives for landowners to install conservation practices that prevent or control excessive erosion and protect water quality. Landowners can receive

up to 75 percent of the estimated cost of the approved practices they install. Promoting good farming and forestry techniques keeps soil on the fields and waters clean. The program helps conserve the productivity of Missouri’s working lands. This effort is funded through the one-tenth cent Parks, Soils and Water sales tax.

The department also uses federal funds provided under Section 319(h) of the federal Clean Water Act to support voluntary, watershed-based efforts to reduce nonpoint sources of pollution.

In addition to the department’s efforts, other agencies such as the USDA Natural Resources Conservation Service and the Missouri Department of Conservation as well as many non-profit groups, organizations and partners offer resources to assist in reducing nonpoint source pollution.

In the final analysis, keeping Our Missouri Waters clean requires everyone’s commitment and efforts. Because we want to leave the legacy of a clean environment to the next generation, what we do now matters.

“Because we want to leave the legacy of a clean environment to the next generation, what we do now matters.”

‘Right tree’

< *Continued from page 1*

three weeks earlier than seed collected just one half mile away from a wetland area. Was the wetland source waiting for likely spring floods to recede? As a general rule, a wetland source will perform in an upland planting, but an upland source may struggle in a flood plain planting.

Currently, there are few nurseries that consider provenance when marketing trees. It is both time consuming and complicates inventory. Tracking trees to their parent seed source is a common

practice at Forrest Keeling Nursery. Established seed orchards, which consist of trees from numerous geographic areas, as well as upland and wetland sources enable the nursery to provide trees with appropriate provenance to their customers. Street trees, trees in parks and landscapes are typically from unknown seed sources. It is important to obtain seed from native stands to ensure its true geographic provenance. Selecting the right tree will help ensure the long-term success of your planting and investment.

FORESTS + WILDLIFE

Managing Open Forests for Wildlife and Timber

By FRANK R. THOMPSON III | *U.S. Forest Service Research Wildlife Biologist*

JOHN KABRICK | *U.S. Forest Service Research Forester*

Open forests, also referred to as woodlands and savannas, have more open canopies and lower tree densities than closed canopy forests. These transitional communities were once widespread and common throughout the Midwest, but after European settlement, most were either converted to other land uses or fire suppression resulted in their succession to closed-canopy forests. Open forests require periodic disturbance in the form of mechanical treatments such as tree harvest or fire to maintain their open canopy, suppress invasion of woody vegetation and sustain the herbaceous and shrubby ground cover. There is great interest in managing for open forests in Missouri because they have been greatly reduced in extent from being abundant to becoming rare and because of their floristic and wildlife diversity. Open forests can support a diverse array of wildlife because they are transitional habitat types. They can include species that overlap from forest or grassland habitats, are savanna or woodland specialists or are generalists that occur across most of the habitat gradient. Open forests can provide excellent habitat for game species such as bobwhite quail, turkey and deer. The abundant ground vegetation that develops in open forests provides seeds for adult quail and turkeys, abundant insects for their chicks and browse for deer. Open forests also provide habitat for numerous songbirds, some of which are conservation priorities including the Blue-winged warbler, Prairie warbler, Eastern towhee and Eastern Pewee. How open a forest is will determine what specific species will benefit the most. Species such as bobwhite quail, prairie warbler and blue-winged warbler prefer open woodland and savanna with 10-50% canopy cover, whereas species such as the eastern pewee and summer tanagers prefer closed woodlands and forests with greater than 50% canopy cover. Deer and turkey will use this whole gradient of habitats. Generally, habitat conditions can best be met for these species by a combination of tree harvest and prescribed fire as opposed to using only one of these methods.

How open a condition you manage your forest for and the tools that you use will also depend on non-wildlife objectives such as timber. Where timber is also



Photo courtesy of Rich Guyette

An open woodland demonstrating excellent groundcover for wildlife species and large-crowned trees for mast production.

an important objective, thinning to remove the smallest and least desirable trees in the midstory and understory and leaving only the largest trees with full crowns will create stands with small gaps in the overstory and an open understory. This will provide light to the ground to stimulate the growth of the herbaceous plants and will accelerate the growth rate of the remaining trees much like any other timber stand improvement (TSI) practice. The application of herbicide during the thinning will prevent the production of stump sprouts, keeping the understory open longer. Prescribed fire can be used judiciously to remove leaf litter and to periodically burn off tree seedlings and shrubs in the understory. Care must be taken not to damage the timber with prescribed fire by burning on calm days when fuel moisture and relative humidity are high.

Where open woodland or savanna conditions are desired for wildlife, tree removals can include some of the larger overstory trees that ordinarily would be retained for timber production. Because the open conditions will favor the development of a woody understory, prescribed fire may need to be applied on a regular basis—once every three to five years—to burn off the woody regrowth and maintain an open understory. The combination of prescribed fire and open stand condition will stimulate the growth of a diverse array of forbs and grasses that are beneficial to wildlife species adapted to open forests. For assistance with managing open forests, contact a professional forester.

URBAN FORESTRY

Pruning Young Shade Trees

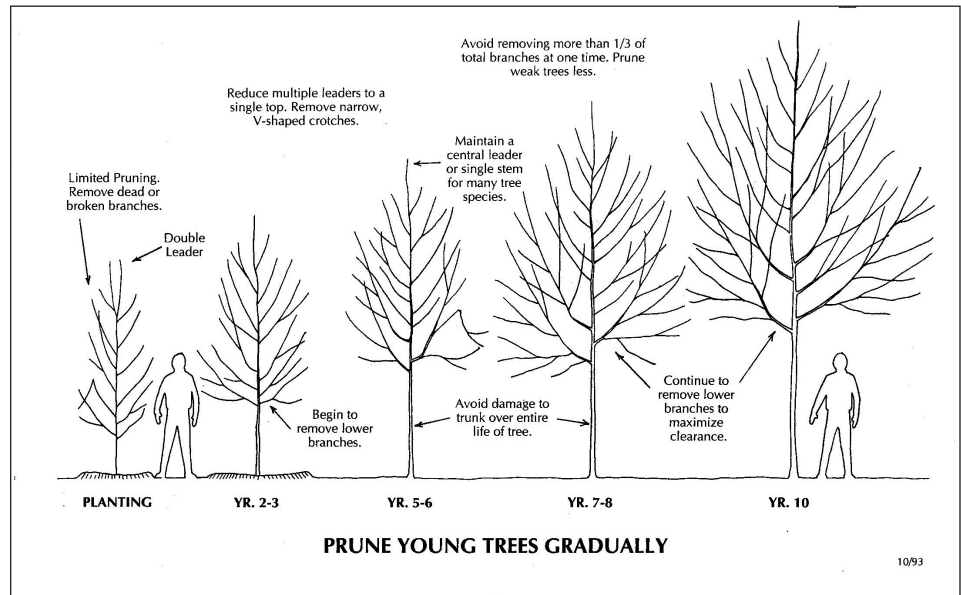
By EUGENE L. BRUNK

As the twig is bent, so grows the tree. This admonition, originally aimed at getting students started in the right direction with regard to their education, also serves as the cardinal principle for pruning trees. How you prune your tree during its first few years, will affect its shape, strength, and life span. In addition, proper pruning will save you money and give you safer, healthier, more beautiful, and easier to maintain trees.

Most people tend to keep a closer eye on a newly planted tree than on one that is well established. Sometimes this is a good thing, because one can readily address any problems that might arise, which endanger the young tree. However, a person must also be careful to avoid trying to do too much to “help the tree along,” which might also endanger it. In general, it is best to step back and let the newly planted tree establish itself and grow as much as possible during the first year. Of course, it does need the basic protection from mowers, weed whips, insect and disease attacks, etc. There is plenty of time to “bend the twig” after the first year.

In general, you should leave as many branches as possible on a newly

“In general, it is best to step back and let the newly planted tree establish itself and grow as much as possible during the first year.”



This illustration provided by the Missouri Department of Conservation depicts the general time frame for pruning young landscape trees.

planted tree during the first growing season. Remove them only if they are broken. During all stages of the trees life, pruning should be done as lightly as possible, and only when there is good reason to prune. Never remove more than one-third of a trees crown in a season. Remember, it is the leaves which generate the nutrients necessary for good growth (through the photosynthetic process); so the less leaf surface there is, the less food-generating ability the tree has, and that equals less growth and development.

Keys to proper pruning are:

1. Prune early in the life of a tree, but don't start until the third year or so, unless there are broken limbs or twigs that need removal immediately.
2. Identify the best leader and lateral branches before you begin pruning, and remove any defective parts before pruning to form.

3. Keep pruning tools sharp. A clean cut assures faster healing of the pruning wound.

Prune with an eye to the future:

- Remember that a branch does not move up the trunk as a tree grows. A branch 5 feet off the ground now will still be 5 feet off the ground ten years from now – only thicker and longer than it is now.
- Try to visualize the future shape that is desired and prune limbs that won't fit that shape.
- Remove branches that will cause an obvious problem in the future (e.g., a double leader).
- Prune as lightly as possible, and only when there is good reason to prune.
- Never remove more than one-third of a trees crown in one season.



FOREST MANAGEMENT

Forest management assistance from the Natural Resources Conservation Service

By NATE GOODRICH | NRCS, Mo. State Forester

The Natural Resources Conservation Service (NRCS) provides conservation technical assistance to land users to address opportunities, concerns, and problems related to the use of the natural resources and to help landowners make sound natural resource management decisions.

The assistance can help landowners develop conservation plans to improve forest health and wildlife habitat, enhance recreational opportunities, protect and improve water quality and quantity, and explore opportunities to diversify agricultural operations. Farm Bill programs are available to landowners to provide financial assistance to implement their conservation plan or forest management plan. Funds are also available to landowners for the development of a forest management plan which will serve as the road map for addressing resource concerns on their forest land in the future.

Missouri NRCS currently has four forestry specialists that provide technical assistance to woodland owners, but the assistance is limited due to the number of counties that each covers. These foresters also provide technical assistance to Farm Bill participants including design, installation, and approval of forest and wildlife-

related conservation practices.

To find out about forest management technical assistance or Farm Bill financial assistance for completing forest management activities on your property, visit the Missouri NRCS website and click the “Contact Us” link to find your local USDA Service Center: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/mo/contact/>

“[NRCS] assistance can help landowners develop conservation plans to improve forest health and wildlife habitat, enhance recreational opportunities, protect and improve water quality and quantity, and explore opportunities to diversify agricultural operations.”

FOREST PEST UPDATE

Thousand Cankers Disease in Missouri

Thousand Cankers Disease kills black walnut trees. Help watch for it in Missouri. Missouri’s Department of Conservation and Department of Agriculture will once again be evaluating black walnut trees in midsummer for symptoms of thousand cankers disease, which has not yet been detected in Missouri.

How you can help:

- View photos of thousand cankers disease on black walnut at MU Extension’s TreePests website (<http://extension.missouri.edu/treepests/thousandcankers.aspx>).
- Find information about other diseases that affect black walnuts.
- Use the online form to report black walnut trees with symptoms that look like thousand cankers disease.
- Please do not take any samples because it could spread pests.

FOREST MANAGEMENT

NRCS and Forest Service Partner, Provide Assistance for Forest Land in Southern Missouri

The USDA Natural Resources Conservation Service (NRCS), in partnership with the U.S. Forest Service, is accepting applications for the Missouri Ozark Highlands Restoration Partnership. The partnership will provide \$1.2 million to help landowners improve the health and resiliency of forest ecosystems where the Mark Twain National Forest and private lands meet in southern Missouri. This marks the second year that NRCS and the Forest Service have partnered on this effort and the first year that Missouri has been selected as a recipient of funds.

Forest landowners in 27 Missouri counties are eligible to apply for Environmental Quality Incentives Program (EQIP) funds to develop and implement forest management plans. The Forest Service will target funds to the Mark Twain National Forest in an effort to remove invasive species and improve water quality on the Eleven Point Ranger District. Overall implementation of this project, on both private and public lands, will reduce wildfire threats by advancing conservation practices such as forest stand improvement, firebreaks, prescribed burning and brush management.

Additionally, implementation will reduce sedimentation in surface water and improve habitat for numerous threatened and endangered species.

“The partnership with the U.S. Forest Service will provide significant and immediate impact to forested areas in the Ozark Highlands,” State Conservationist J.R. Flores said. “Over the course of three years, these EQIP funds will allow forest landowners to address priority resource concerns including forest health, plant and water quality degradation, fish and wildlife habitat and soil erosion.”

NRCS accepts applications for financial assistance on a continuous basis, but applications for initial funding consideration during this fiscal year must be received by June 5. For a complete list of the 27 counties affected by the Missouri Ozark Highlands restoration Partnership, visit the Missouri NRCS website. To locate an NRCS service center near you, visit the “contact us” section of the website, or look in the telephone directory under, “U.S. Government, Department of Agriculture.”

FOREST INDUSTRY

The Bid Box

By HANK STELZER | *MU Forestry Extension*

COLE COUNTY, MO.

38 acres

378 mixed hardwoods

Doyle tree scale used: 52,000 bd.ft.

- 27,000 bd. ft. white oak, including 3,500 bd. ft. with potential stave quality
- 15,400 bd. ft. red/black oak
- 2,700 bd. ft. black walnut
- 6,900 bd. ft. other mixed hardwood species

Forester valued sale: \$13,500

4 bids: \$8,000 - over \$22,000

Bid of \$16,000 taken

Return: \$421/acre

The landowner had very specific goals and wishes regarding the protection of his land. Prior to the bid opening, the forester met with three of the bidders explaining the landowner's goals and wishes. He showed the bidders proposed entrances to the property, access roads and log landing areas. The fourth bidder was located several hours away and did not view the timber before submitting his bid.

Of course, the high bid was from the logger who did not view the timber. After several weeks and a few phone calls to the high bidder, he still had not made an appointment to handle the contract and eventually backed out on his bid.

Fortunately, the second highest bidder who had bid \$16,000, was located much closer (within 30 miles), had a very good reputation and was someone the consulting forester had worked with in the past. The forester arranged for the two parties to meet. Afterwards the landowner seemed very comfortable with this buyer, they signed the contract, and the landowner received payment for his trees a couple weeks ago. The harvest is slated to begin later this summer.

The Take-home Message

A professional forester is your advocate in harvesting your trees. He or she will work with you to ensure your land management goals and objectives are met. They take the hassle out of selling your timber by working with prospective buyers and advising you when the highest bid isn't all that it's cracked up to be!

FOREST MANAGEMENT

Grapevines — Are they good or bad?

By SCOTT BRUNDAGE | *Consulting Forester*
GENE GARRETT | *Outreach Specialist*

Grapevines can be a major problem in forest management on high quality sites and, to a lesser extent, on poorer quality sites. Since grapevines need sunlight, as do trees, to maximize their growth and development, they rapidly climb through the trees' crown until they reach the top. At this point they lay down a blanket of leaves that serve to intercept sunlight that should go towards the production of food for tree growth. Once established, grapevines can be found growing throughout the trees' crown creating undesirable shade. This shade results in a dramatic reduction in the growth of the tree. Moreover, the sheer weight of the vines can cause physical damage resulting in reducing a once potentially valuable tree to a cull that is in need of removal. Breakage in the tops of larger trees and bending and distortion of stems in smaller "pole size" trees are especially prevalent under conditions that combine the weight of the vines with high winds, snow, and ice.

Most professional foresters would argue that, due to the damage caused by grapevines, they should be eliminated in managed stands. Wildlife biologists, on the other hand, see them as a food source for wildlife and might argue that a certain percentage of them should be retained. So, what is right for a landowner? The answer lies in "the eyes of the beholder"! If a landowner wishes to emphasize "aesthetics", then it may be desirable to leave some vines to increase the diversity of food available. However, it is important that the landowner understand the problems created by the vines and the "tradeoffs" that will occur. Not only will the grapevines cause physical damage to their host trees, those trees will also lose their vigor which means, there will be a sharp reduction in the production of their food crop (acorns, berries, etc). While the diversity of food available on an acre may increase, the quantity may actually decrease.

Regardless of the position one takes on the value of grapevines, there is always an occasion where a grapevine is in need of removal. Simply cutting the vine is ineffective and will only result in multiple

sprouts developing--where you once had a single vine you now have many to contend with. The success in killing grapevines is found in the timing and the application of an herbicide known to be effective. Grapevines can be killed at any time during the year except between about March and mid-May, a period when sap is actively flowing. The flow of sap makes it very difficult for the herbicide to enter the plant and be translocated to the root system. The vine should be severed just above the ground. In many instances, a single vine may have more than one rooted area and it is important that it be cut just above each location where it enters and exits the soil. The herbicide of choice should be applied directly to each cut surface immediately after cutting. While there are undoubtedly many herbicides that can be effectively used on grapevines, one that is often used and is known to be effective and economical is Pathway (active ingredients Picloram 5.4% and 2,4-D 20.9 %) used in an undiluted concentration. Pathway is identical to Tordon RTU.

"Most professional foresters would argue that, due to the damage caused by grapevines, they should be eliminated in managed stands. Wildlife biologists, on the other hand, see them as a food source for wildlife and might argue that a certain percentage of them should be retained."

MARK YOUR CALENDARS

Agroforestry Academy registration has opened



The 2015 Agroforestry Academy will be held from July 20 - 24, 2015 in Columbia, Mo. The week-long training includes classroom workshops, on-farm visits and practical agroforestry planning and design, led by experienced trainers. Advanced training is provided on the five recognized temperate zone agroforestry practices integrated with options for bioenergy, marketing, economics, policy, social dimensions and environmental services. Full registration (including lodging, food and local travel) is \$1,000/person. There are limited scholarships available for U.S. military veterans. For more information, contact Michael Gold at goldm@missouri.edu or Gregory Ormsby Mori at ormsbyg@missouri.edu.

Link for other details: <http://www.centerforagroforestry.org/events/AgroforestryAcademy.php>

TRAINERS

Experienced trainers will be drawn from the MU Center for Agroforestry, USDA National Agroforestry Center, Extension and NRCS agroforestry specialists, other selected experts from the U.S. and Canada, farmer educators and agroforestry practitioners. The list includes:

- Michael Gold, UMCA
- Larry Godsey, Missouri Valley
- Richard Straight, National Agroforestry Center
- Bruce Wight, Consultant
- Charlotte Clifford-Rathert, Lincoln University
- Terry Durham, Elderberry Producer
- Grant Schultz, Versaland

Benefits from previous participants included:

"a sense of hope and momentum for conservation agriculture," "a sense of inspiration knowing that there are so many people doing the work," "a better knowledge of where and when specific practices may be applicable on the ground," among other responses.



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The Center for Agroforestry
University of Missouri

A Global Center for Agroforestry, Entrepreneurship and the Environment

Calendar of Events

May 20 - 21, 2015 — Agroforestry Workshop: Incorporating trees and shrubs into contemporary agricultural systems, Topeka, Kansas. Email Mary Howell (kfu.mary@gmail.com) or call 785.562.8726 for more information and registration.

May 31 - June 3, 2015 — North American Agroforestry Conference, Ames, Iowa. - www.aftaweb.org

June 12 - 14, 2015 — Chestnut Growers of America annual meeting, Stockton, California. - www.chestnutgrowers.com/

June 14 - 17, 2015 — National Walnut Council meeting, St. Charles, Mo. - www.walnutcouncil.org/annual-meeting/

June 18 - 19, 2015 — Elderberry Workshop, Carver Farm, Lincoln University, Jefferson City, Mo. - <https://2015elderberryworkshop.wordpress.com/>

July 20 - 24, 2015 — Agroforestry Academy, Columbia, Mo. - www.centerforagroforestry.org/events/AgroforestryAcademy.php

July 26 - 29, 2015 — 106th Annual Meeting of the Northern Nutgrowers Associations (NNGA), University of Wisconsin - La Crosse, La Crosse, Wisconsin - www.nutgrowing.org/meetinfo.htm