

### Vol. 9 No. 4 Growing Tomorrow's Future Today Crop tree release: focusing on the best trees Focusing on



#### Hank Stelzer, Extension Forester

Think of crop tree release as crown thinning, or thinning from above. This practice focuses one's effort on the best trees in the stand. It pays more attention to managing tree canopies. So, just what are crop trees?

Crop tree release is thinning from above, or focusing on management of tree canopies. The goal is to maximize space around each crop tree.

Crop trees are trees that produce, or have the potential to produce, the desired landowner benefits. If, for example, improved deer or turkey habitat is desired, a large-crowned white oak tree that produces abundant acorns would be a valuable crop tree. If increased economic value is an important ownership objective, a 14"-diameter black walnut tree with a straight, defect-free trunk and healthy crown would be a valuable crop tree.

Since the focus is on maximizing growing space around each crop tree, it can result in a pretty heavy cut. From a personal aesthetics point of view, if you want your woodland to have a dense forest look and feel, then releasing all of your crop trees may result in an unacceptable visual effect. If that is the case, release fewer crop trees. It is far more desirable to completely release fewer crop trees than to partially release more. Research has shown that partially released trees grow at a much slower rate than completely released trees. In just a few short years the crop tree crowns will expand and lessen any negative visual effect and you can completely release another group of adjacent crop trees. Because the intensity of this practice depends upon your objectives, and realizing that no two woodlands are the same, you might want to initially seek the help of your forester. For example, if you own 10 acres and intend only to release three or four hard mast-producing trees per acre to improve wildlife habitat, you may need to do little more than walk over the property and select trees based on the selection criteria and their spacing throughout the woodland. On the other hand, if you own 50 acres and wish to release 20 to 30 crop trees per acre to favor timber production and wildlife habitat, you may need a fairly detailed inventory to determine the number of suitable crop trees, identify their location, evaluate their potential to respond to release, and indicate how many trees need to be removed to release those crop trees. Also, if the trees to be removed are (**cont. pg. 3**)

Fall 2005

## Important changes to federal income tax laws for private forest landowners

#### Larry Godsey, Economist, MU Center for Agroforestry

**S** everal changes were made to the Federal Income Tax laws in 2004 that affect private forest landowners. Most notably is the elimination of the reforestation investment credit that allowed landowners to take a tax credit of up to ten percent of the first \$10,000 spent on commercial afforestation/reforestation. Reforestation expenses that are incurred before October 22, 2004 are still eligible for this tax credit. However, reforestation expenses that are incurred after October 22, 2004 are now eligible for a new amortization and deduction that allows the landowner to deduct the first \$10,000 of qualified reforestation expenses in the year that they occur and any amount over \$10,000 can be amortized over an 84-month period.

In addition to the reforestation deductions available, the Section 179 business investment deductions have increased. Section 179 deductions are limited by the maximum dollar limit, the investment limit, and the taxable income limit. In 2004 the maximum dollar limit increased from \$100,000 to \$102,000. In other words, the Section 179 deduction cannot exceed \$102,000. Likewise, the investment limit was increased in 2004 from \$400,000 to \$410,000. In other words, if a landowner invests \$420,000 on Section 179 property, then the amount that can be deducted is reduced by \$10,000 (\$420,000 -\$410,000 = \$10,000). The total deduction on that investment would be \$92,000 (\$102,000 - \$10,000 = \$92,000). This deduction cannot exceed the taxpayer's taxable income for that year. Property that qualifies (**next pg.**)

## Changes to federal income tax laws (cont. from page 1)

for the Section 179 deduction includes:

- Tangible personal property (e.g. agricultural fences, machinery, and equipment)
- Business property (all business property, other than structural components, contained in or attached to a building... e.g. office equipment)
- Livestock
- Single purpose agricultural (livestock) or horticultural structures.

Because of the numerous assumptions and exceptions to taxable income deductions, it would be to the advantage of the taxpayer to seek professional guidance when more than one deduction is available.

Another change that took affect in 2004 is the addition of the Forest Land Enhancement Program (FLEP) in the list of small watershed programs that qualify for the Section 126 income exclusion. Under Section 126, all or a portion of cost-share payments received under a select list of conservation programs can be excluded from gross income. Other programs that qualify for the Section 126 income exclusion include the Forestry Incentive Program (FIP), Forest Stewardship Incentive Program (SIP), the Wetlands Reserve Program (WRP), the Environmental Quality Incentives Program (EQIP), the Wildlife Habitat Incentive Program (WHIP), the Conservation Reserve Program (CRP) and various State programs designed to improve forests. To determine the amount of the exclusion, a four-step procedure is followed. For more information on this procedure, consult the IRS Publication 225 Farmer's Tax Guide or your local tax professional.

Finally, the most important change for forest landowner's who manage their timber as part of a business is the ability to apply capital gains treatment to a "lump sum" timber sale. Prior to 2005, the only way timber business owner's could get capital gains treatment for the sale of their timber was to sell the timber as either a Section 631(a) (cutting of standing timber with an election to treat as a sale) or Section 631(b)(disposal of standing timber with an economic interest retained) transaction. The new change allows lump sum sales of standing timber that is cut after December 31, 2004, to be taxed as a capital gain. The timber must meet the requirements of long-term capital assets, more specifically, the timber must be held for more than one year prior to the date of disposal. The date of disposal for outright sales may be the date that payment is received. It is important to note that income from the sale of cut products, such as logs, is considered ordinary income. For more information regarding capital gains treatment on the disposal of standing timber, consult the IRS Publication 225 Farmer's Tax Guide, IRS Publication 544 Sales and Other Dispositions of Assets, or your local tax professional.

For more information about forestry tax laws visit the National Timber Tax web site at **www.timbertax.org.** 

### "Missouri Woodland Steward" Short Course begins January 2006

The University of Missouri Extension announces a new short course that will be offered beginning January, 2006, for individuals interested in improving both the trees and wildlife on their property. Missouri Woodland Steward is an introductory, five-session course that will help landowners begin to realize their woodland dreams.

Through four indoor sessions, individuals will learn how to "see the forest for the trees." Participants will understand the process of assessing the timber and wildlife potential of their woodlands. They will also become familiar with some basic principles and practices of forest and wildlife management. The last session will help participants begin synthesizing all of this information into a plan specific to their needs.

The short course will conclude with a field trip to see first-hand some of the practices presented in the indoor sessions. The field trip will also include a visit to an unmanaged woodland where participants will gain experience in assessing the current woodland situation and make recommendations.

This short course is an excellent opportunity to become acquainted with professional foresters and wildlife biologists in your area, as well as share ideas and knowledge with other interested landowners.

To find out when Missouri Woodland Steward will be offered in your area, contact your MU County Extension Center or MU Forestry Extension (573) 882-4444, or email: stelzerh@missouri.edu.



Forest landowners in the West Plains area were the first to attend the Missouri Woodland Steward Short Course.

### Crop tree release (cont. from page 1)

merchantable and the removal is to be a commercial sale, some form of formal inventory will be desirable for marketing purposes. Now you definitely need the assistance of a trained and experienced professional.

It is often a good idea the first time you perform a crop tree release to visually identify your crop trees and trees to be removed by placing a ribbon around the trunk of the trees. For example, you could use blue flagging for your crop trees and red flagging for the trees to be removed or deadened. Evaluating the visual impact before cutting will allow for adjustments if the anticipated results are not desired. The old carpenter's rule, "measure twice, cut once" is a good rule to follow, especially in the forest!

Trees to be removed are those individuals whose crowns touch the sides of, or overtop, the crowns of the crop trees. Trees whose crowns are below those of the crop trees' crowns do not provide significant competition and are usually not removed or deadened. Ideally, a crop tree should be released from competing crowns on all four sides of its crown.

Occasionally, two crop trees will be close enough to each other that both trees cannot be released on four sides. It's okay to keep both trees. Simply release the other three non-competing sides. In general, younger stands will require more crop trees to be released since not all crop trees will survive until the stand matures. In the winter issue of *Green Horizons*, we will talk about ways to remove your unwanted trees.

## Restoring shortleaf pine from the air: A progressive forest management technique

Doug Enyart, ACF, Senior Forester, Clearwater Forest Consultants, LLC

On Sept. 9, 2005, a Tree Farm® in eastern Wayne County, Mo., was host to a progressive forest management practice called early release. This practice consists of the aerial application of a forestry herbicide called Arsenal® AC with a low flying and slow moving helicopter. While not innovative—this practice has been used extensively in the southern U.S. and elsewhere aerial release applications have not been seen in the Ozarks region of Missouri since the 1960s.

The project, coordinated by Clearwater Forest Consultants (CFC) of Piedmont, Mo., is designed to restore pine to a portion of the landscape while realizing a return on investment. Arsenal® AC was applied to pine plantations that have completed two or three growing seasons as part of the restoration project.

For the owners of this Tree Farm®, managing pine is a solid objective. At one time, shortleaf pine was the dominant tree in their forest. In addition, the selected sites are better (**cont. pg 6**)

### Central Region Woodland Stewardship Conference: Nov. 18-19, 2005



The hazelnut field trial on the grounds of the Lied Conference Center will be one of four Friday afternoon field sessions.

The 8th annual Central Region Woodland Stewardship Conference will be held November 18-19 at the beautiful National Arbor Day Foundation's Lied Conference Center in Nebraska City, Neb. It is sponsored by University of Missouri Extension and the Missouri Department of Conservation in conjunction with State and Extension Forestry in Iowa, Kansas and Nebraska. Landowners will learn how to manage their woodlands and related natural resources using good stewardship principles.

Pre-conference workshops on measuring timber, hazelnuts, and tree identification will be offered Friday afternoon. The conference kicks off Saturday morning with an opportunity for landowners to talk with professional foresters and will then proceed into concurrent presentations covering topics in woodland management, tree health, agroforestry and wildlife.

The conference registration fee of \$40 per person (\$50 if post-marked after November 16) includes a great buffet luncheon, refreshments, and handout materials. Attendance is limited to 250, so early registration is encouraged.

For more information or a conference brochure, contact MU Extension Forester, Hank Stelzer at (573) 882-4444, or email stelzerh@missouri.edu.



# New directions for the black walnut breeding program at the University of Missouri

Mark Coggeshall, Tree Improvement Specialist, MU Center for Agroforestry



Mark Coggeshall, tree improvement specialist, shoots pollen into a pollination bag on black walnut. During controlled pollinations, specific trees are bred based on a suite of desirable traits.

#### Applied black walnut breeding program

An applied breeding program to develop new black walnut nut varieties for use in agroforestry-based systems was initiated in 1996 at the University of Missouri Center for Agroforestry. Since then, a total of 105 different black walnut nut cultivars have been acquired and placed in a series of grafted orchard collections at the University of Missouri Horticulture and Agroforestry Research Center (HARC) in New Franklin, Mo. Each cultivar is represented by at least two grafted trees in these clonal repositories.

Beginning in 2000, a series of careful observations were initiated on an annual basis for all of the repository trees. This information allows us to learn more about how a species can vary for a number of adaptive and commercially important characteristics. Among these adaptive traits are budbreak date, flowering habit, nut harvest date and season length. Some of the important commercial traits of interest include: early and annual nut productivity, disease resistance, nut size and kernel percent.

#### Genetic "fingerprinting" of cultivars

In addition to these traditional descriptor values, we have also initiated an effort to further characterize these trees on the basis of their unique "genetic fingerprint." This project has proven quite valuable, as it can help define the trees within our collection that are closely related, or may be mislabeled. These results are helping to accurately identify all the trees in the Center's collection, which is critical to our overall goal of developing new nut cultivars for Missouri.

#### Cross-pollinating for desired traits

By using these high-tech tools and studying how trees vary for commercially important traits, we can define the "best" trees in our collection to serve as potential parents in a breeding program. Specific trees are crossed based on their suite of desirable traits, using traditional control-pollination methods. These efforts have resulted in 160 control-pollinated seedling trees, which are established in a new planting site at HARC. As these trees mature, we will examine how they grow by using the same descriptive categories we employed for their parents. Those trees that outperform their parents will potentially become new cultivars.

#### Cultivation for an orchard setting

In addition to evaluating both the parent trees and their seedling offspring in the breeding program, we are also very interested in developing a better understanding of how to cultivate this species in an orchard setting. For example, pruning schedules, fertilization and pest control measures, etc., can have a (**cont. pg 7**)

## Landowners share ideas at Walnut Council meetings

#### Dusty Walter, MU Center for Agroforestry

The Missouri Walnut Council works to promote the growth and use of black walnut. In recent years, efforts have broadened to include growing other high quality fine hardwood species in addition to black walnut.

The Missouri Chapter is part of the larger, nationally organized Walnut Council that was founded in 1970. Currently, the Walnut Council represents nearly 1,000 woodland owners, foresters, forest scientists, and wood-producing industry representatives in 45 states and seven foreign countries.

Every year the Walnut Council holds an annual meeting. This year's meeting, titled "Reality Forestry," was held in Moline, III., from July 31 – Aug. 3. Long days, primarily in the woods, were filled with information that included discussions from the value of standing timber, to the actual felling and skidding of trees from the woods to a log landing where they were graded and valued. The meeting provided an excellent opportunity to gain a better understanding of how log buyers assess value to standing timber. Additional tours and talks covered forest management, crop tree release, vine removal, the proper use of herbicides and forest farming for products including ginseng, golden seal and shiitake mushrooms.

In addition to the annual national meeting, the Missouri state chapter of the Walnut Council meets 2 to 3 times each year, often as field days held on members' lands or farms. This is an opportunity for landowners to show-and-tell about efforts to enhance the growth and value of their black walnut and forested lands. On Aug. 20, the Missouri Walnut Council met on the farm of Mr. Lloyd Grafton. Mr. Grafton has more than 600 acres of land enrolled in the Conservation Reserve Program (CRP) and planted with a mix of trees that includes black walnut and white oak. In many places, he has black walnut trees that are doing quite well; in others, the white oak is outperforming the walnut. This was quite a testimony to planting the right tree on the right sight! Soils, and changes in the availability of moisture based on a trees position on a slope, play key roles in the growth and development of trees and will vary by the species of tree planted. Among other lessons, the field day at the Grafton farm illustrated clearly that white oak and black walnut have preferences about the sites that they grow on -- and the sites on which they will grow best. These differences were especially marked in height and diameter variations between trees on given sites.

We welcome you to join us as we work to promote the growth and use of our state's hardwood treasures. For more information, visit **www.walnutcouncil.org** and select Missouri from the State Chapters link; or contact Harlan Palm, Walnut Council president, at (573) 882-1402; or email palmh@missouri.edu.



## Landowner Spotlight – Wild Crops Farm hosts educational native plants field day; explores value-added opportunities



Rachel McCoy, MU Center for Agroforestry

Echoing the resilient qualities of Missouri's native plants, one of summer's hottest days couldn't keep several land and forest owners, natural resources professionals, hobbyists and research-

ers from gathering in Licking, Mo., in late July to do something good for the land.

George and Penny Frazier, owners of Goods from the Woods, an on-farm pine nut and wild craft herbal business, together with local farmers and other interested organizations collaborated to host an enlightening field day on native plant systems and the market opportunities they present. The Fraziers work with neighbors to preserve the fragile Ozark ecosystem through the cultivation of native forest plants and outreach activities to educate fellow landowners, and the public, about the medicinal and household properties found in many native species.

The Frazier family's work with wild plant species began in 1993 with the intent to promote land conservation through creating economic incentives based on native plant systems. Their 12-acre farm (called Wild Crops Farm) holds two USDA certificates – Certified Wild Crops and Certified Organic. Wild Crops Certification is similar to Organic Certification, in that the land must be kept free of prohibitive substances and a sustainable harvest plan must be utilized.

The Fraziers, working with groups from across Missouri, created the July field day — called "Central Ozarks Natives: History and Future" — as an opportunity for knowledge exchange about the region's native plant systems. "We explored ways of protecting native plant systems, our rural communities, our forests and our farms," Penny said, "because you can't know the land by sitting in an office or in the house. You need to get out on the land to know the land."

The day began with open dialogue led by Katie Auman of Yellville, Ark., focusing on the stories and experiences of what Penny Frazier calls our "elders who have lived in this region for generations." J.D. Vankirk, a local farmer whose mother lived on the land that is now Wild Crops Farm, addressed changes in land use. He remembered learning about goldenseal and ginseng, valuable medicinal herbs, from watching his great uncle harvest and cultivate them.

"People are in danger of forgetting the original intention of a farm — for mixed use that benefits the crops, the trees and the wildlife both now and in years to come," said Vankirk. "We may not be using the land to its full potential if we approach it with only one or two crops in mind. There's generational knowledge out there to be shared if we will seek it out."

Penny and George Frazier agree, citing the importance of the economic value of mixed use that includes native plant species. Wild Crops Farm has identified 78 different native species with the potential for value-added, distilled hydrosols and other botanical values. A hydrosol consists of the plant waters and plant essences remaining after the essential oils have been removed during a distillation process. Hydrosols are ten to 15 times stronger in medicinal properties than herbal teas, and can be used for any purpose herbs would be used for. While the Fraziers' "Goods from the Woods" product line is not sold as a food or beverage, a thimble full of hydrosol offers health benefits equal to an entire cup of herbal tea.

"Some say hydrosols are the real aromatherapy," says Penny. "They contain the water-soluble volatile components of the plant and are therapeutic and extremely mild. Unlike essential oils, they can be applied directly to the skin as spray mists, splashes, compresses or soaks."

Following distillation, the hydrosols are conveniently packaged into hand-held pump spray bottles. An emerging market cited by the Fraziers is the pet industry, with certain hydrosols effective for flea and tick protection and control without the potentially harmful properties of some essential oils when applied directly to the skin.

Wild Crops Farm demonstrates what the Fraziers and Vankirk believe from experience, that valuable native plants don't just require harvesting from the wild – they can be equally as valuable, both economically and from a health perspective, when transplanted and cultivated to a well-managed farm setting.

"We have to start showing people economic reasons why these species with food and medicinal value are important," says George. "As people look to restore their lands, (**cont. pg 8**)



Participants at the July field day learn about the Fraziers' cultivation of ecotyped Echinacea for its seed, medicinal and ornamental values.



## Restoring shortleaf pine from the air (cont. from pg. 3)

suited for pine than for oak and other hardwood species. The virgin pine forest types were maintained by low intensity ground fires that passed through forests every 3-15 years. Early 1900's logging and an increase in severe fires, followed by a period of fire suppression, drastically changed the landscape and forest vegetation types. Today there are not enough naturally occurring pine trees to serve as a seed source. Also, bringing back fire will not restore shortleaf pine. Prescribed fire is expensive, requires skill and is restricted to small windows of opportunity. A better way to bring back the pine forest is to establish plantations.



Helicopter beginning a run at the edge of the tree line.

When a pine tree is planted, it faces an uphill battle because it must spend time and resources establishing its root system before it can even begin to compete. From a pine tree's perspective, survival depends on capturing more of those resources than the grasses, vines, briars, and hardwood stump sprouts surrounding it. Resprouts from nearby hardwood stumps quickly overtop the pine seedlings, eventually shading them out.

An early release spraying with Arsenal® should eliminate competing hardwood, grass, and vine competition, but will not harm the planted pine trees. Arsenal® works by entering a plant through the leaf. Pine trees are not harmed by the herbicide because they metabolize the herbicide faster than broadleaved plants and work it out of their systems before the chemical has a chance to kill them. In addition, the shape of the pine leaf (needle) and its waxy outer layers naturally reduce the amount of chemical encountered by the tree. Following application, the herbicide has killed most of the hardwood and grass competition by the following spring, giving the planted pine seedlings a head start in the race for growing space.

Another benefit of herbicides like Arsenal® is that they can actually enhance wildlife habitat. Arsenal® kills the hardwood and grass vegetation that typically crowds out many legumes and other herbaceous plants wildlife species, like deer, utilize for survival. The amino acids attacked by the herbicide are non-essential to animals, including insects, reptiles, amphibians, birds and mammals. For private landowners, the cost of restoration projects has been considered prohibitive. However, it is quite common in the southern states for private landowners and investors to pay for site preparation or release projects out of their pocket. In Missouri, cost share programs can make such projects a reality for many landowners, including the owners of the Tree Farm® featured in this article. According to a BASF Corporation representative, one of the best features of pine restoration is that investments in activities like site preparation and early release applications can pay off, offering a rate of return between 8 and 15 percent. By incorporating cost share benefits into the equation, returns on investment can be even higher.

Site preparation and early release applications can be carried out in several ways ranging from backpack sprayers to helicopter spraying. If the critical mass of acreage is available, helicopter spraying is less expensive than any other method. Cooperation among neighboring or nearby landowners can provide this critical mass of acreage. Site preparation and early release must be done at the proper times of the year in the development of the stand, which can lead to project coordination challenges. The services of a professional forestry consultant, such as Clearwater Forest Consultants, can truly benefit landowners in a successful pine restoration.



Summit Helicopter's crew loading mix into the helicopter from the tank truck. Pine seedlings are buried under the brush in the foreground.

#### The Bid Box

The following bids were received on 173 black walnut trees (approximately 15,000 board feet on the Doyle Tree Scale) growing in central Missouri:

•	\$6,920 \$8,670	A difference of <b>\$12,580</b> (182%) between the low and high bid!!
• • •	\$9,360 \$16,550 \$18,100 \$19,500	The take home message here is that the market remains strong for good walnut and that quality crop tree management pays.



## New directions for black walnut program (cont. from page 4)

major impact on orchard productivity and profitability, and we are beginning to address these important questions. Also, since black walnut cultivars must be propagated via grafting, the selection of specific rootstocks for use in establishing new orchards may be very important. In fact, results from a young rootstock study indicate that both the planting site and rootstock source can have a major influence on early seed production, at least at age 5. It will be interesting to see if these early results will predict future orchard productivity.

Through these efforts, we have learned that black walnut is a species that has great potential for use in future orchard plantings. It is highly diverse for all of the adaptive and commercially important traits we have examined so far. This significant genetic diversity will allow us to make major strides in developing new cultivated varieties for Missouri in the future.



Mark Coggeshall, far right, leads a group through the HARC black walnut research site. The trees are grown on a trellis system to stimulate the production of flowers on easily accessible branches. These flowers can then be hand pollinated to produce nuts. The nuts are sown in containers, and the resulting seedlings will be evaluated for a series of years to determine if they out-perform their parents in terms of nut quality and productivity.

## Forest Management Firm Receives International Certification

Clearwater Forest Consultants (CFC) of Piedmont, Mo., has become the first consulting forest management company in the state to receive the prestigious "SmartWood" certification, accredited by the Forest Stewardship Council (FSC). SmartWood is the world's oldest and leading non-profit accredited FSC certifying body. Three Piedmont-area forest landowners are presently participating in the program.

"Clearwater Forest Consultants should be commended for the significant amount of work they went through to meet the Principles and Criteria of the FSC" said Loy Jones, senior forester, SmartWood U.S. region. "By completing this process, they have made FSC certification attainable for individual landowners in Missouri, allowing them to have their lands managed under the most rigorous forest management standards in the world today and that are independently verified by a third party."

There are two forest certification systems operating in the US. One is the Sustainable Forestry Initiative (SFI), a certification system developed by the American Forest and Paper Association. The second



Clearwater Forest Consultants owner Doug Enyart and forester Joe Schwartz display the firm's newly achieved certification as a "Smart-Wood" resource management company. In the background is a recently harvested property, one of three area timberlands currently participating in the certification program.

is FSC. Both systems value responsible management in the forest and local community, and the production of quality timber from generation to generation. To receive the FSC certification, Clearwater (cont. pg. 11)

## Center begins new series of trainings for professionals

The University of Missouri Center for Agroforestry is expanding the depth and reach of its training program, beginning in Jan. 2006, as part of an ongoing commitment to increase the knowledge and adoption of agroforestry practices across Missouri and the Midwest.

The Center earned a Sustainable Agriculture Research and Education (SARE) Professional Development Program grant to fund a series of agroforestry trainings geared toward a targeted audience: individuals from state and government federal agencies, University Extension personnel, and non-profit and professional organizations dealing with issues that directly impact landowners and their management of forests and farms.

The first training event funded through the SARE Professional Development Program is Jan. 10 and 11, 2006, in Columbia, Mo.

#### Agroforestry Professional Training Workshop Jan. 10 - 11, 2006 Columbia, Mo.

- Targeted toward professionals working with land and forest owners
- Utilizes new and updated Agroforestry Training Manual designed to facilitate all phases of creating a successful agroforestry practice
- Topics Include: Comprehensive presentations on the latest science in support of agroforestry
- Assisting landowners with budgeting/ planning for agroforestry practices and marketing the products they grow
- Designing agroforestry for wildlife
   habitat management
- Opportunities to develop networks between various resource agencies
- Public policy and institutional barriers affecting agroforestry
- Case study to practice agroforestry design and encourage collaborative agency efforts

For additional information, or to receive a registration form by email when it is available, email Julie Rhoads, UMCA Events Coordinator, at rhoadsj@missouri. edu. An informational flyer is available at **www.centerforagroforestry.org**, with a registration form online soon.



## Landowner Spotlight: Field day features native plants, plant products (cont. from page 5)

why not restore with native plants with the potential to help provide livelihood benefits? While people restore for wildlife, they can also restore for non-timber forest product values."

When choosing a species to cultivate, Penny and George seek plants with a multitude of uses. Some of the most popular and economically viable natives the Fraziers cultivate are elderberry and native mints, including wild bergamont, skullcap, white leaf mountain mint and wild spearmint.

They are cultivating ecotyped Echinacea for its seed, medicinal and ornamental values, together with potential hydrosol values. Through the process of collecting seeds from the wild, then restoring the plants to their native habitat, the Fraziers market plant products that have been produced through the use of either wild or organic plants. The products themselves are not certified, but the plants used to produce them are.

"We choose ecotypical plants that suit the land well," says Penny, "and use local soil, which offers a range of ecological as well as financial benefits. This way, producers need to supply little to no inputs, and the plants are disease resistant and well-suited for this climate and growing region. The native floral plants also bring plenty of pollinators to the land."

Participants at the field day learned these benefits hands-on from the Fraziers through tours of their acreage, which included a wild plum, mulberry and persimmon orchard, goldenseal, yarrow, spice bush and witch hazel.

Additional tours from other native plant growers in the region included a farm harvesting pine and yarrow for distillation and cultivating passion flower; and Bob's Garden, a local nursery focused on the importance of ecotypes.

A distillation demonstration for producing herbal hydrosols hosted by the Fraziers introduced the group to additional cottage-industry opportunities in the medicinal plants market. The distillation unit was purchased in part with a USDA Sustainable Agriculture Research and Education (SARE) grant the native plant growers received. The SARE grant also helped George and



Penny create "seed beds"

George and Penny Frazier demonstrate the distillation process for native plants. The distillation unit was purchased in part with a SARE grant the landowners received. to ensure an easily harvestable supply of native plant seeds and a growing environment to ease root harvest and root division. The day concluded with a group discussion about ways to encourage landowners, consumers and resource professionals to consider both the long- and short-term impacts of their practices.

"Our livelihood is connected in wanting to keep the land and keep on it," says Penny.

For more information on Wild Crops Farm and their native plant products, visit **www.pinenut.com**.



A variety of value-added products can be marketed from native plant production, including hydrosol sprays, soaps, teas and fresh pine nuts.



3rd Annual Missouri Chestnut Roast! Saturday, October 29, 2005 10 a.m. - 4 p.m. Horticulture & Agroforestry Research Center, New Franklin, Mo.

Guided tours of the 660-acre Horticulture and Agroforestry Research Center featuring diverse agroforestry practices

Showcase for Missouri's outstanding agricultural products, including wines; jams and jellies; pecan, walnut and chestnut products; locally produced honey; cheeses & meats

Children's activities, including a farm display, storytelling, a live bat demonstration and arts and crafts

Demonstrations of new research on profitable specialty products produced through agroforestry, including pine straw and chestnuts

Free fresh-roasted chestnuts, and samples, displays and sales of Missouri pecans and black walnuts set amidst the beautiful Missouri River Hills

Free admission! All activities under tents for comfort, rain or shine! For maps, event schedule and information, visit www.centerforagroforestry.org or call (573) 884-2874.

GREEN HORIZONS

# Northern Nut Growers Association meeting addresses diverse list of nut tree challenges, opportunities

From chestnuts to paw paws, the 96th annual meeting of the Northern Nut Growers Association (NNGA) spanned the gamut of nut and related fruit crops. More than 150 NNGA members from across the country attended the meeting held July 31-Aug. 3 at Central College in Pella, Iowa, an event that has become an excellent opportunity for researchers, hobbyists and commercial growers to exchange ideas and learn about advances and new markets in the industry.



Participants attend a discussion about the advantages of managing a black walnut orchard using grafted trees at Billie and Geri Hanson's orchard near Centerville, Iowa, just north of the Missouri border.

A board meeting and the traditional show-and-tell event kicked off the meeting on July 31. Monday included several educational talks and sessions, the majority featuring chestnuts. Dennis Fulbright, professor, Department of Plant Pathology, Michigan State University, presented a series of images from his chestnut sabbatical to Italy. Fulbright explained the overwhelming popularity, familiarity and interest in chestnuts in Italy, including a series of chestnut festivals during the month of October and chestnut posters, displays and themed items appearing in nearly every store window and street corner. "Chestnuts in the fall in Italy are as common as seeing a fall leaf or a pumpkin in the United States," he said.

Sandra Anagnostakis, Agricultural Scientist at The Connecticut Agricultural Experiment Station (CAES), presented a talk on her work in studying the nutritional factors of chestnuts that affect storage and taste. Research includes evaluating which crosses result in a higher protein and oil content, as well as the effects of a pollinizer on these factors. She is studying crosses based on linoleic and oleic acid levels in the nutmeat, because higher oleic acid has been reported to provide enhanced flavor and sweetness and low linoleic acid to improve storage.

Greg Miller, owner of Empire Chestnut Company, discussed the advantages and disadvantages of planting chestnut seedlings versus grafted trees. Problems Miller cited with grafted seedlings include graft failure, variable growth and difficulty in transplanting. Advantages to planting grafted trees include a more significant level of early production. Seedling orchards are viable only for Chinese chestnuts; other species do not have a high enough proportion of good seedlings. Challenges to planting seedling chestnut trees include genetic variation, a longer preproductive period, and greater difficulty to maintain as small trees. However, Miller described seedlings as less expensive to plant and manage than grafted trees and as a "more forgiving" tree in terms of grower error. He recommends overplanting then thinning out seedling trees if necessary, spacing the trees from 30 to 40 feet and being patient with production speed. For grafted trees, Miller suggests planting trees 15-40 feet, pruning or thinning at close spacings, using intensive cultural inputs, such as weed control, fertilizer, and irrigation. Topworking established seedlings may be more successful than transplanting grafted trees.

Ken Hunt, post-doctoral fellow, University of Missouri-Columbia Center for Agroforestry (UMCA), described Chinese chestnut cultivar performance in Missouri at the University of Missouri Horticulture and Agroforestry Research Center (HARC). The major program focus is screening cultivars for commercial use. There are three field studies, a repository with 55 cultivars (2 trees of each type); a cultivar trial, with 12 cultivars (5 trees of each type); and a nut production orchard, with 3 cultivars (8 sixtree replications). Factors tested include nut yield, nut size, date of nut maturity, timing of bud break, flowering and tree growth habit.

Results of the Center's recent chestnut market analysis and report were presented by Mike Gold, associate director, UMCA. The Center's long term objective is to create a thriving domestic chestnut industry, focusing its efforts on three key areas: national market research, production techniques/orchard management and increasing consumer demand and awareness. The outcome of this effort will be an active program that reaches out to potential producers and establishes a multi-million dollar chestnut industry within the state of Missouri and surrounding states. Through national market surveys sent to producers, and (**next pg.**)



The annual auction offers a range of hardwood and nut-themed items for sale, serving as a fundraiser for NNGA research programs.



## NNGA meeting explores potential of nut varieties (cont. from page 9)

businesses active in the U.S. chestnut market the Center reported that the U.S. chestnut industry is in its infancy. The majority of producers have been in business less than 10 years, many just beginning commercial production. Current production volume is low, less than 1.5 million pounds nationwide. Demand exceeds supply, and grower prices often exceed \$3.50 a pound. Barriers to success in the chestnut business include the lack of information for producers, retailers and consumers, a 5 to 10 year time lag to get a return on investment, and a shortage of available chestnut nursery stock of commercial cultivars.

Monday afternoon's talks offered a variety of additional nut themes, including insect pests on hickory and walnut, the restoration of butternut in Southern forests, nitrogen fertilization for hazelnuts and the potential of paw paws in the upper Midwest.

Nut forums allowed NNGA members to openly discuss challenges, successes and experiences with various crops in a small group setting. Attendees could attend forums on seven different types of nuts, in addition to persimmon and paw paw: black walnut, chestnut, hazel nut, heartnut, hickory and pecan. At the chestnut forum, discussion topics included types of sites best suited for chestnut, pollination, temperature effects, marketing, organic production, graft failure and root stock development.

The annual auction highlighted Monday evening's events, offering a range of hardwood or nut-themed items for sale, many the result of members' agricultural or craft endeavors - including seedling nut trees, homemade nut-themed baked items, handcarved wooden kitchen items, honey and wines. Proceeds from the annual auction support nut tree research.

Tuesday morning's talks featured pecan and black walnut, with presentations by researchers including Bill Reid, associate professor, Kansas State University, who spoke about Northern pecan cultivars and the phenology of early ripening across the northern Midwest (primarily Kansas, Missouri and Illinois). Reid described an increasing interest in growing pecan orchards in these states and presented an order of ripening for varieties used in this region.

Dave Brauer, Agricultural Research Service (ARS) agronomist/ research leader, presented a talk on the growth potential and establishment of black walnut varieties in North Central Tennessee, a potential replacement crop for tobacco farmers. Brauer emphasized the importance of positioning plantings properly in the landscape to control flooding.

An update on the Black Walnut Cultivar Performance Project was presented by Billie Hanson of Ben's Black Walnuts, Centerville, Iowa. The goal of the project, funded in part by NNGA, Farm Bureau and others, is to help determine which cultivars are best suited for six regions of Iowa. Production and nut quality data may be available soon, as well as data collection on frost sensitivity and ripening. Mark Coggeshall, Tree Improvement Specialist, UMCA, shared the progress of the black walnut breeding program and rootstock evaluation underway at the Center's research farm. The Center's black walnut research program is designed to uncover new and improved usages for black walnut in agroforestry practices. Coggeshall is currently working on a project for identifying specific species exactly and accurately, using DNA fingerprinting. Due to propagation or data collection errors, many black walnut cultivars have been determined to be "problematic," and the DNA fingerprinting project will help confirm the cultivars' original identities. Bud break, leaf-out date, fruit shape and husk thickness are some of the characteristics under evaluation.

Tigernut (from Africa) and vegetation management for tree growth were also included in Tuesday morning's presentation topics. Key topics for Tuesday afternoon's discussions centered around potential markets for commercial nuts and nut products.

Larry Godsey, Research Associate/Economist, UMCA, presented a financial model for determining the economic feasibility of establishing a nut tree crop, including a tree growth model for use as an income projection tool. Tom Wahl, of Red Fern Farm, Wapello, Iowa, offered insights on the differences between producing nuts commercially or as a hobby crop. Wahl's recommendations included having a mission statement, business plan, and market research in place prior to beginning a commercial operation.

Wednesday's field tours brought participants to the black walnut orchards and production facility of Ben's Black Walnuts, a prototype commercial black walnut operation in Centerville, Iowa. A project planting for the Iowa Black Walnut Cultivar Performance Project was viewed at the orchard of Merlyn Carter, also in Iowa.

For more information, visit www.nutgrowing.org.



Attendees examine part of the equipment that Billie and Geri Hanson use to remove the husk, float and wash black walnut nuts in a 1000 ppm chlorine solution before moving clean nuts to a drying bin.

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## SmartWood Certification (cont. from pg 7))

Forest Consultants underwent a rigorous assessment by trained SmartWood auditors that found their management met the FSC 10 Principles and 52 Criteria.

One element of these criteria require forest management programs to continue to produce quality timber from generation to generation, without the nearly century-long gap that often results from clear cutting and similar practices. Equally as important is sustaining the range of ecological values on the property and ensuring that any social or community concerns as a result of management, if they occur, are considered during management.

"Prior to the implementation of this program, the harvesting of timber in this area has remained unchanged for the last century," Envart said. "There is hardly an acre of forest in this area that would not benefit from timber thinning and forest management. I hope this is the beginning of a new direction, not only for CFC, but for the forests of Missouri." More than 70% of the forestland in Wayne County is privately owned, Envart added.

Certified wood and paper products are now carried by several major national retail chains. The global market for FSC-certified wood is now estimated to exceed \$5 billion annually.

Additional information about Clearwater Forest Consultants and the certification award is available by contacting Doug Envart at (573) 223-7010 or by email at cfc@semo.net; or visit www. clearwaterforestconsultants.com. For more information about the SmartWood program and FSC, visit www.smartwood.org; or contact Emily Jaklitsch by email at ejaklitsch@smartwood.org. © 1996 Forest Stewardship Council A.C.

*Note*: Currently, Missouri does not require landowners to have third party certification associated with a sale of wood from their forest lands. However, certification may be appealing to many landowners as a marketing tool that may increase the value of harvested wood. For additional reference on the guidelines and requirements associated with certifying your forests and their sustainable management, please visit the following web sites:

www.treefarmsystem.org www.aboutsfi.org/core.asp www.rainforest-alliance.org/programs/forestry/smartwood www.fscus.org www.csa-international.org/testing certification us www.merid.org/comparison www.maineenvironment.org/nwoods/FSC\_SFI\_comparison.htm



## N UNDIZONY

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#### **Resource Available for** Nut Growers

#### Now Available: "A Guide to Nut Tree Culture in North America, Volume 1"

The successor to the Northern Nutgrowers Association's (NNGA) successful Nut Tree Culture in North America by Richard Javnes has evolved into two volumes. "A Guide to Nut Tree Culture in North America. Volume 1" is now available.

More than 18 experts offer advice and information on nut tree growing for pecan, walnut, hickory, hazelnut, pine nuts, beech nuts and chestnuts. Topics include nut growing history, propagation, rootstocks, processing, fruiting, marketing, and timber sales and wildlife issues related to nut trees. The cost is \$65 for NNGA non-members; \$45 for members plus postage of \$5 to a US address.

To order a book online, or join NNGA, visit www.nutgrowing.org. Discounts available for quantity orders.



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## **Calendar of Events**

**Oct. 29, 2005: 3rd Annual Missouri Chestnut Roast, Horticulture and Agroforestry Research Center (HARC), New Franklin, Mo.** The Chestnut Roast is an outreach and educational opportunity featuring guided farm tours of the 660-acre HARC farm, agricultural exhibits and displays, free samples of fresh Missouri roasted chestnuts and children's activities. Hours are 10 a.m. to 4 p.m; free admission. Visit www.centerforagroforestry.org for more information.

Nov. 18-19, 2005: 8th Annual Central Region Woodland Stewardship Conference, National Arbor Day Foundation's Lied Conference Center, Nebraska City, Neb. Landowners will learn how to manage their woodlands and related natural resources using good stewardship principles. See additional information, page 3.

Nov. 28-29, 2005: Missouri Soil and Water Conservation District Annual Conference, Tan-Tar-A Resort, Osage Beach, Mo. Exhibits, educational presentations and speakers. For more information, contact Shelly Sumpter at (660) 263-5702, ext. 113, or by email at shelly. sumpter@maswcd.net.

Jan. 10-11, 2006: Agroforestry Professional Training Workshop, Columbia, Mo. Hosted by the University of Missouri Center for Agroforestry, the workshop is targeted toward professionals working with land and forest owners. Workshop will utilize a new and updated Agroforestry Training Manual designed to facilitate all phases of creating a successful agroforestry practice. For list of topics, see page 7. For additional information, or to receive a registration form by email when it is available, email Julie Rhoads, UMCA Events Coordinator, at rhoadsj@missouri.edu. An informational flyer is available at www.centerforagroforestry.org.

Feb. 1-3, 2006: Missouri Natural Resource Conference, Tan-Tar-A Resort, Osage Beach. Details available at www.mnrc.org

Feb 3-4, 2006: Missouri Nut Growers Association Winter Meeting and Nut Show, Nevada, Missouri. For additional information contact Jerry Van Sambeek at jvansambeek@fs.fed.us

Save the Date!! February 17-19, 2006: Specialty Mushroom Workshop, Columbia, Mo. Hosted by the University of Missouri Center for Agroforestry. Expert speakers, educational presentations and a field tour. For additional information, email Julie Rhoads at rhoadsj@missouri.edu, or call (573) 882-3234. Information and registration form posted soon at www.centerforagroforestry.org.

**February 24-25, 2006: Missouri Tree Farm Conference, Columbia, Mo.** Themed "Adding Value to Missouri's Forest Products," the conference begins Friday with demonstrations on crop tree management and specialty wood products at the MU Horticulture and Agroforestry Research Center in New Franklin, Mo. Friday evening will feature an informal landowner show-and-tell. On Saturday expert speakers will share the latest information on identifying new value-added products from Missouri's forests. Information will be posted soon at www.moforest.org.