

ACTION IN AGROFORESTRY

monthly newsletter of The Center for Agroforestry at the University of Missouri

May 2011

Michael Gold and Michelle Hall, editors

Vol. 2, No. 5

In the News: Maximizing Land Value through Agroforestry

The Forestry Source recently spoke with Shibu Jose, the director of The Center for Agroforestry, about the “implementation of agroforestry in the U.S. and the discipline’s potential for improving ecological services such as wildlife habitat and water quality.”

You can find the full article online at http://www.nxtbook.com/nxtbooks/saf/forestrysource_201102/index.php#/0 (pages 1 and 7). We also wanted to share some of the article with you here (thanks to *The Forestry Source* and author Joseph M. Smith):

“Why isn’t agroforestry more common in the United States?”

“Agroforestry is typically the way of life, the so-called subsistence systems, in many developing countries where you have multiple plant and animal species on the same piece of land managed as a single production system. So they have trees, agronomic species, and livestock all mixed together. Native Americas also practiced subsistence farming. However, our modern agriculture and forestry practices evolved with mechanization and cheap fossil fuels to produce massive quantities of food and wood from large tracts of land. There was no place for trees on a farm or no place for crops in a forest. Since the dustbowl of the ‘30s the environmental value of perennial vegetation on agricultural landscape has become common knowledge. We now realize that intensive monocultural cropping systems come with environmental costs, and that realization has increased the interest in agroforestry. There is also realization that farm diversification is an important part of the answer to small farm economic sustainability in a competitive global market. Agroforestry, by its very nature, offers both economic and environmental sustain-

ability. But, the cultural change from monoculture to multispecies, multicomponent agroforestry has been slow not only in the United States, but in many developed nations of the world.

“Can you discuss some of the issues that are particular to family farms and explain how agroforestry can address them?”

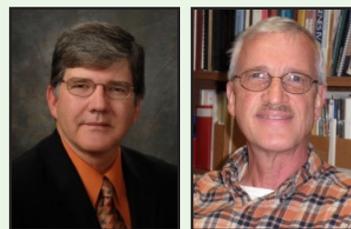
“As we all know, small farms are struggling to make ends meet (and by small farm I mean a farm with a gross farm income of less than \$250,000 per year) and these are the ones that can benefit most directly from the adoption of agroforestry practices. For example, enterprises with trees such as Chinese chestnut can increase farm income tremendously. Based on our studies, we have found that Chinese chestnut can increase gross farm income by \$3,000 to \$6,000 per acre per year, starting in the seventh year. We also have shown that silvopasture can bring in an additional \$43 per cow-calf pair, so if you are talking about a 100-head operation, that is \$4,300 in additional income as a result of weight gain in cattle alone. The value of trees is not included in this calculation. For a small farmer, combining these multiple opportunities can significantly increase their economic potential. There are also other types of specialty crops, such as elderberry, or other medicinal plants like ginseng or gourmet mushrooms that can bring in significant additional revenue to a small farm. Growing biomass for biopower or advanced biofuels is another potential opportunity or emerging enterprise for farms practicing agroforestry.”

The monthly Forestry Source is “news for forest resource professionals” published by the Society of American Foresters. Learn more about SAF at <http://www.safnet.org/>

BURNER, RAPER TO SERVE AS ADJUNCT FACULTY MEMBERS

Drs. Randy Raper and David Burner have been named MU adjunct faculty members.

Raper will serve as adjunct professor of biological engineering; Burner has been named adjunct associate professor in the Division of Plant Sciences. Both are long-time collaborators of The Center for Agroforestry.



Raper (pictured left) is an agricultural engineer and Burner (right) serves as a research agronomist, both with the U.S. Department of Agriculture/Agricultural Research Service at the Dale Bumpers

Small Farms Research Center, Booneville, Ark.

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KUDOS

Friend of The Center for Agroforestry **Wayne Lovelace** has received the Patriot Award for his support of employee **Lupe Rios**, who serves with the Missouri Army National Guard in Afghanistan on an Agriculture Development Team. **Lovelace** is president of Forrest Keeling Nursery, Elsberry, Mo. See the full article here:

http://www.nurserymanagementonline.com/forrest-keeling-president-given-patriot-award.aspx?List_id=6&email=GPRUE TT%40DELTRAYPLANTS.COM&key=

RESEARCH

Udawatta, R.P., S.H. Anderson, P.P. Motavalli, and H.E. Garrett. 2011. Calibration of a water content reflectometer and soil water dynamics for an agroforestry practice. *Agroforestry Systems* 82(1):61-75:

Researchers developed site-specific calibration equations to evaluate soil water dynamics for an agroforestry system. Putnam and Menfro soils were packed in cylinders and sensors were monitored. The field study showed significant differences between the agroforestry and row crop treatments. Also, it emphasized the importance of temperature correction during periods with larger diurnal fluctuations and site specific calibration

COMING SOON...

- June 4-9** 12th North American Agroforestry Conference
University of Georgia, Athens, Ga.
<http://hosting.caes.uga.edu/2011NAAC/>
- June 9-10** Comprehensive Elderberry Workshop
Eridu Farm, Hartsburg
<http://elderberylife.com/index.html>
- June 16** Agroforestry In-Service Workshop
LaFarge and Viola, Wis.
http://conservation-training.wisc.edu/course_listing/list_sections?course_id=59
- June 24-26** Chestnut Growers of America annual meeting
Louisiana, Mo.
<http://www.wcga.net/>
- Aug. 16, Sept. 13** Chestnut Workshops
Contact rhoadsj@missouri.edu for info.

equations. Results of the study showed that water content reflectometers can be used to estimate volumetric water content with less than ± 4 percent error and may need site-specific calibration and a temperature correction to research more precise estimates.

IMPACT

Senior **Madelyn Myers** was the winner of the Research Excellence Award at the 2011 MU Life Science Week in the Biological Engineering and Bioinformatics category for her research project "Environmental Applications of Bioactive Enzymes" (*mentor is Chung-Ho Lin*). **Myers** represented The Center for Agroforestry and the department of forestry in the competition. **Myers** also has been admitted to the Professional Science Master's Program in Biotechnology at Brandeis University with a \$20,000 scholarship.

OUTREACH

Mark Coggeshall gave the following recent presentations:

"TCD screening strategies: The search for resistance in black walnut." Thousand Cankers Disease Workshop. March 31, Purdue University. Sponsored by USDA Forest Service, Northern Research Station, Hardwood Tree Improvement and Regeneration Center and Walnut Council.

"Thousand Cankers Disease: A real threat to our walnut resource?" Class lecture in forest pathology. April 8, Michigan State University, East Lansing, Mich.

"The black walnut breeding program at the University of Missouri Center for Agroforestry." Michigan Nut Growers Association Spring Meeting. April 9, East Lansing, Mich.



Two shiitake inoculation days were held this spring at the Allen Research and Education Project (AREP), located just outside of Laurie, Mo. Faculty and staff from The Center for Agroforestry teamed up, assembly-line style, to drill evenly spaced holes in 1-meter-long logs (top), plunge the shiitake inoculum into the holes (middle) and seal the holes with sizzling hot wax (bottom left). (Finished logs at bottom right.) The logs will be placed under trees on the property in a forest farming demonstration this fall. The logs should produce a few mushrooms this autumn and come into full production next spring.



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