

action in AGROFORESTRY

M The Center for Agroforestry
University of Missouri

A Global Center for Agroforestry, Entrepreneurship and the Environment

Michael Gold and Cade Cleavelin, editors
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The Future of Temperate Agroforestry in the United States

Shibu Jose, Michael A. Gold and H. E. Garrett

Abstract:

Agroforestry has been practiced in the United States since the 1930s in the form of windbreaks; however, science-based agroforestry research and practice gained attention only in the 1970s. Even then, the progress of agroforestry and its acceptance by practitioners, farmers and policy makers were hindered by the paucity of hard evidence to support the practice.

The scientific foundation that has been laid, over the past decade in particular, has elevated agroforestry's role as an integral component of a multifunctional working landscape in the United States.

Recent trends in the agriculture sector necessitate

farm diversification as an essential strategy for economic competitiveness in a global market.

The realization that agroforestry systems are well



Windbreak | Jay Wilford

suited for diversifying farm income while providing environmental services and ecosystem benefits has increased receptivity on the part of some landowners.

Agroforestry systems offer great promise for the production of biomass for biofuel, specialty and

organic crops, pasture-based dairy, and beef, among others.

Agroforestry also offers proven strategies for carbon sequestration, soil enrichment, biodiversity conservation, and air and water quality improve-

ment not only for the landowners or farmers but for society at large. The USDA Agroforestry Strategic Framework released in 2011 identifies agroforestry as an im-

portant component of a much-needed national strategy to "enhance America's agricultural landscapes, watersheds, and rural communities." Minor shifts in national agricultural policy can catalyze the growth of agroforestry further.

In an era of environmental sustainability and green business, the realization that agroforestry is an environmentally sound, ecologically sustainable, and economically viable alternative to traditional farming will propel its adoption to newer heights in the coming decades.

Shibu Jose, Michael A. Gold and H. E. Garrett. 2012. The Future of Temperate Agroforestry in the United States. In: P.K.R. Nair and D. Garrity (eds.), Agroforestry - The Future of Global Land Use, Advances in Agroforestry 9, DOI 10.1007/978-94-007-4676-3_14, © Springer Science+Business Media Dordrecht



Kudos--

On August 30, Dr. Michael Gold gave an invited presentation at the North American Chestnut Farm Workshop in Jackson, Michigan, entitled: "Developing Chestnut Farms in Missouri". Along with presentations from Michigan, Ohio and Oregon, the workshop also included a set of invited presentations from China, Italy, Turkey, and Australia.

Recent publications

Agroforestry strategies to sequester carbon in temperate North America.

From the abstract:

Information on carbon sequestration potential of agroforestry practices is needed to develop economically beneficial and ecologically and environmentally sustainable agriculture management plans. The synthesis will provide a review of carbon sequestration opportunities for agroforestry practices in temperate North America and the estimated carbon sequestration potential in the US.

The carbon sequestered by agroforestry could help offset US fossil fuel emissions by 33%. Despite data limitation and uncertainty of land area, these estimates indicate the important role agroforestry could play as a promising CO₂ mitigation strategy in the US and temperate North America. The analysis also emphasizes the need for long-term regional carbon sequestration research for all agroforestry practices and standardized protocols for carbon monitoring.

Ranjith P. Udawatta and Shibu Jose. 2012. Agroforestry strategies to sequester carbon in temperate North America. *Agroforestry Systems* 86(2): 225-242. DOI: 10.1007/s10457-012-9561-1

Equations for estimating aboveground biomass of cadaghi trees in farm windbreaks.

From the abstract:

Agroforestry systems have received global attention lately as a strategy for carbon mitigation, but still are one of the least studied systems. This study was conducted in south Florida to develop biomass equa-

tions for windbreak grown cadaghi (*Corymbia torelliana*) trees and to estimate biomass in various aged windbreaks.

Trees were selected for destructive sampling based on diameter at breast height (DBH) distribution from five windbreaks. Crown biomass was estimated using randomized branch sampling (RBS) and trunk biomass by taking disks every 1.5 m along the stem.

Results indicated that DBH alone was sufficient to predict above-ground biomass, but including height in the models gave better results. Oven-dry whole tree biomass per 100m of windbreak ranged between 166 and 26,605 kg.

Because fast-growing cadaghi can produce significantly more biomass in a short period than other windbreak species, landowners can expect higher returns from biomass or carbon trade over a shorter period.

Bijay Tamang, Michael G. Andreu, Christina L. Staudhammer, Donald L. Rockwood and Shibu Jose. 2012. Equations for estimating aboveground biomass of cadaghi (*Corymbia torelliana*) trees in farm windbreaks. *Agroforestry Systems* 86(2): 255-266. DOI: 10.1007/s10457-012-9490-z

Agroforestry for biomass production and carbon sequestration: an overview

From the abstract:

Ever since the Kyoto Protocol, agroforestry has gained increased attention as a strategy to sequester carbon and mitigate global climate change. However, our understanding of carbon sequestration in specific agroforestry practices from around the world is rudimentary at best. Similarly, while agroforestry is well recognized as a land use practice capable of producing biomass for biopower and biofuels, very little information is available on this topic.

This thematic issue is an attempt to bring together a collection of articles on carbon sequestration and biomass for energy, two topics that are inextricably interlinked and of great importance to the agroforestry community the world over.

These papers not only address the aboveground carbon sequestration, but also the belowground carbon and the role of decomposition and nutrient cycling. The biological and economic realities of producing biomass in agroforestry practices are also discussed.

Shibu Jose & Sougata Bardhan. 2012. Agroforestry for biomass production and carbon sequestration: an overview. *Agroforestry Systems* 86 (2):105-111. DOI: 10.1007/s10457-012-9573-x

Coming up:

October 20

Third Annual Great River Road Chestnut Roast
hosted by Forrest Keeling Nursery
Elsberry, Missouri
10:00a.m. – 4:00p.m.
More details here:
fknursery.com

October 26

Elderberry Winemaking Workshop
Bleu Restaurant | Columbia, MO
Click here for more information and registration by snail mail:
centerforagroforestry.org
Click here to register online:
brownpapertickets.com

November 2

Farmers Forum:
Elderberry: A Rapidly Growing Specialty Crop Industry in the U.S. Midwest
National Small Farm Trade Show
Central Missouri Event Center
smallfarmtoday.com

November 3

National Small Farm Trade Show
Elderberries short course given by Terry Durham
2:30 – 5:00 p.m. | Cost \$25
Central Missouri Event Center

Farewell and welcome:

The Center for Agroforestry would like to bid farewell to Laura Orozco, who interned as the information specialist this past summer. Laura is working this semester as a marketing intern at the Mizzou Alumni Association as well as a communications specialist at Rose Media.

For the fall semester, the center would like to welcome Cade Cleavelin, who will be filling Laura's position as the new intern. Cade is a junior at MU studying science and agricultural journalism.

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