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 $\underline{\text{SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER-FOREST SECTOR/FORESTY PRODUCTS INTEREST GROUP}\\11/12/15$

Landowners may benefit by growing crops among trees

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BATON ROUGE, La. – Growing crops among trees in a managed forest can contribute to rural economic development, a group of LSU AgCenter researchers said during a presentation recently at the national convention of the Society of American Foresters.

The week-long convention brought more than 1,400 participants to Baton Rouge, said Buck Vandersteen, executive director of the Louisiana Forestry Association.

Landowners can take advantage of several approaches to growing timber, said Terry Clason, a retired LSU AgCenter researcher.

A silvopasture is a land-use management system that integrates timber, forage and livestock, providing diversified marketing opportunities that can stimulate rural economic development, Clason said.

The interaction among timber, forage and livestock components is intentionally created and intensively managed, he said. This simultaneously supports a timber crop, high-quality forage and livestock production while sustaining the ecosystem.

In addition to silvopasture, another practice is what Clason calls forest farming, where fruits and vegetables are grown under the tree canopy.

"The biggest management needs are tree spacing and establishment," Clason said. Seedlings have to be planted appropriate distances apart to allow for the agricultural crops that will be grown and harvested. And fertility and other practices need to be managed to ensure the trees get off to a good start.

Forest farming by growing fruits and vegetables among the trees works well for small landowners, Clason said.

Another approach, alley cropping, provides several benefits, said AgCenter forest researcher Mike Blazier. He's growing switchgrass in a series of trials in Louisiana and Arkansas.

Two studies consist of cultivating switchgrass as a biofuel feedstock within alleys between loblolly pine and eastern cottonwood.

"Switchgrass is a model energy crop," Blazier said. "After years of research, we've determined it's feasible to grow it with trees."

Blazier has planted switchgrass with cottonwood trees in "retired" pastures and soybean fields that had historical low yields.

"Cottonwood and switchgrass provide wildlife diversity in alley cropping," Blazier said. Switchgrass can be grown for grazing, hay or biofuels, and cottonwood has potential as a fuel feedstock.

"Biofuel is an unestablished market with potential," he said. "But in the meantime, we've learned about growing the crops."



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Blazier has harvested four tons of switchgrass per acre per year without fertilization between loblolly pine trees and 12 tons per acre per year with fertilization between cottonwood trees.

"Even in a bad year for hay, trees still are growing and wildlife habitat is improved," Clason said.

Michelle Gonzales, a research associate with Blazier at the AgCenter Hill Farm Research Station in Homer, has been studying soil quality in the cottonwood-and-switchgrass trials.

Alternative crops such as switchgrass and cottonwood trees capture soil carbon and produce less nitrogen in soil water, Gonzales said.

Switchgrass provides the highest rates of biomass growth and the highest rates of soil carbon accumulation, she said. Switchgrass moves carbon into the soil and exceeded soybean and sorghum production in the unirrigated, retired fields in the study.

"Through concurrent meetings – science sessions and technical sessions – the meeting provided something for everybody," Vandersteen said.

The convention also included local tours to such locations as the Atchafalaya Basin, the Barataria Preserve and the Southern Forest Heritage Museum.

One highlight was a book signing by Mason Carter, retired LSU AgCenter forestry professor and dean of the LSU College of Agriculture.

Carter wrote the recently published book "Forestry in the U.S. South: A History" along with Robert C. Kellison and R. Scott Wallinger.

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