

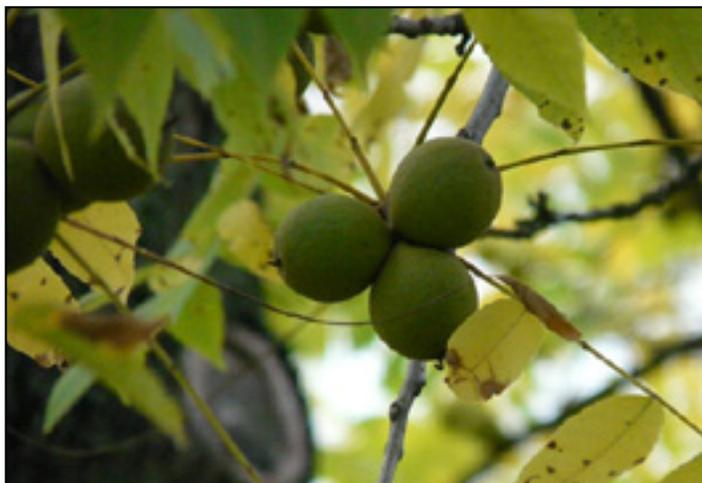
action in AGROFORESTRY

MU The Center for Agroforestry
University of Missouri

A Global Center for Agroforestry, Entrepreneurship and the Environment

Michael Gold and Katie Moritz, editors
Volume 4, No. 2

Abundant Missouri black walnuts could bring in Russian trade



Missouri's black walnut industry was touted to confecturers in Russia during a visit in early December by Jon Hagler, director of the Missouri Department of Agriculture.

Hagler, who was part of a U.S. Department of Agriculture delegation to Russia, was the keynote speaker at the University of Missouri Crop Management Conference in mid-December.

Hagler spoke of Missouri's strong positioning to be a major exporter of agribusiness products and said Russian officials showed interest in Missouri's walnuts and native pecans. Russia imports tree nuts, almonds, pistachios and English walnuts.

"Russia is excited about the opportunity to do business with America," he said. "I'm excited about what the possibilities could be down the road."

Russia's growing middle class wants and can afford more protein and higher-quality food, Hagler said. This opens the doors for Missouri agribusinesses that want to export both traditional agricultural products as well as nontraditional ones such as wine and nuts.

Missouri is the world's largest producer of black walnuts. Native to Missouri, walnut trees grow in every county in the state, said Mark Coggeshall, research assistant professor of forestry at the MU College of Agriculture, Food and Natural Resources.

—Linda Geist, MU Cooperative Media Group

Research: Agroforestry might mitigate livestock antibiotics' harmful impacts

Irene Unger and Keith Goyné's Center for Agroforestry-funded research, "Antibiotic effects on microbial community characteristics in soils under conservation managements practices," was recently published in the Soil Science Society of America Journal. Contact Unger at irene.unger@westminstermo.edu.

Abstract: Veterinary antibiotics (VA) administered to livestock are introduced to agroecosystems via land application of manure, posing a potential human and environmental health risk. Recent evidence suggests that agroforestry and grass vegetative filter strips (VFS) may act to mitigate VA transport or enhance VA degradation; however, VAs may adversely affect soil microbial communities within VFS and thus alter the primary functioning of the VFS.

The objectives of this research were to investigate potential changes in microbial community structure and function and to quantify the development of antibiotic resistance in VFS and no-till soils exposed to various VA classes and concentrations. Laboratory mesocosms were established using soils collected from no-till cropland and two VFS (grass and agroforestry). Soils were treated with oxytetracycline or lincomycin (5–200 mg kg⁻¹ soil). Individual mesocosms underwent destructive sampling at nine time points during 63 d, and the soils were tested for soil microbial function (C-utilization, dehydrogenase, and fluorescein diacetate hydrolysis assays), community structure (phospholipid fatty acid analysis), and antibiotic resistance. Functional assays associated with all VA treatments showed an initial inhibitory effect, but this trend was generally reversed by



the seventh day. Shifts in microbial community structure and increased antibiotic resistance were not observed, suggesting that the soil microbial communities were robust to the effects of oxytetracycline and lincomycin at test concentrations. This work indicates that using VFS to mitigate VA loss from agroecosystems will not diminish important primary functions associated with VFS use in agriculture.

Food and Agriculture Organization releases agroforestry paper

The United Nations' Food and Agriculture Organization released its new publication, "Advancing Agroforestry on the Policy Agenda: A guide for decision makers," earlier this year. The organization's agroforestry papers aim to spark discussions about farming practices. Read an excerpt below.

Executive summary: The potential of agroforestry to contribute to sustainable development has been recognized in international policy meetings, including the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity, justifying increased investment in its development.

Yet agroforestry continues to face challenges such as, unfavorable policy incentives, inadequate knowledge dissemination, legal constraints and poor coordination among the multiple sectors to which it contributes. Nor is it sufficiently addressed in national policy making, land-use planning and rural development programs. As a result, its potential contribution to the economy and sustainable development goals has not been fully recognized or exploited.

One of the policy challenges facing agroforestry in many countries is the emphasis on monoculture food, industrial agricultural crops and mechanized farming (often subsidized) discouraging the integration of trees into farmland. Moreover, in some countries, the bureaucracy involved for accessing both land and tree-based products, combined with land ownership problems creates long-term uncertainty that further restricts agroforestry initiatives. Farmers may also perceive trees as incompatible with their farm operations and may not benefit from programs which offer training or access to tree related inputs (e.g. germplasm) to the extent that they do for other agricultural enterprises.

A lack of knowledge of the advantages of agroforestry inadvertently leads to the perception that it is peripheral to agriculture and is a low output subsistence system.

As the agroforestry industry is often impeded by legal, policy and institutional arrangements, its environmental benefits unrewarded, and investment discouraged by the time between adoption and returns, policies are needed that will promote the benefits of agroforestry. The general objective of the new policy guide is to assist countries to develop policy, legal and institutional conditions that facilitate the adoption of agroforestry and recognize its contribution to national development. This includes better communication between sectors and the mainstreaming of agroforestry in national policies.

Faculty organize soil health workshop

Ranjith Udawatta and David Hammer organized a workshop entitled "Soil Health for Conservation, Sustainable Productivity, and Ecosystem Benefits" for the 2013 Missouri Natural Resources Conference on Jan. 31 at Tan-Tar-A.

The USDA-NRCS, MU, and USDA-ARS are collaborating to establish an assessment of cover cropping at a Soil Health Demonstration Farm in Chariton County.

The workshop included the following presentations by UMCA faculty:

- Physical Properties and Healthy Soil (C.J. Gantzer and R.P. Udawatta)
- The Missouri Soil Health Demonstration Farm (Y. Titus, R.P. Udawatta and M. Snellen)



Thanks, Cade!
Welcome, Katie!

Senior Katie Moritz will be taking over for Cade Cleavelin as this semester's information specialist intern for the Center for Agroforestry. Reach her at KatherineCMoritz@gmail.com or visit her in ABNR 1-14. Thanks for a semester of hard work, Cade!



Like us on Facebook!
facebook.com/centerforagroforestry

Coming soon!

Comprehensive Elderberry Mentoring Workshop

What: A workshop for farmers and other growers who want to learn more about elderberry and go home with a flat of plants.

When: Saturday, March 16

8 a.m. to 4 p.m.

Where: American Legion Hall
Hartsburg, MO

Cost: \$185 per person
Lunch and refreshments will be provided.

Interested? Contact Terry Durham at (573)999-3034 or eridu_farms@yahoo.com

The Center for Agroforestry
University of Missouri
203 Anheuser-Busch Natural Resources
(573) 884-2874
centerforagroforestry.org
Shibu Jose, Ph.D., Director



College of
Agriculture,
Food and
Natural
Resources