



Action in Agroforestry

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Michael Gold and Hyelee Won, editors

UMCA/MU Students/Faculty Present Diverse Research Findings at MU Life Sciences Week

1. Danh Cong Vu, Mark Coggeshall, Brian Mooney, Zhentian Lei, Lloyd Sumner, Michael Greenlief, Daniel Pote, Chung-Ho Lin. Identifying health promoting phytochemicals in black walnuts (*Juglans nigra* L.)
2. Van Ho, Danh C. Vu, Park Jihyun, Nahom Ghile, Mark Coggeshall, Dan Pote, Anuradha Roy, Zhentian Lei, Lloyd Sumner, Michael Greenlief, Brian Mooney, Chung-Ho Lin. Exploring health benefits of phytochemicals in black walnuts (*Juglans nigra* L.)
3. Jihyun Park, Nahom Taddese Ghile, Zhentian Lei, Lloyd Sumner, Michael Greenlief, Brian Mooney and Chung-Ho Lin. Identifying bioactive phytochemicals in spent coffee grounds for cosmetics application through global metabolite analysis.
4. Danh Vu, Gustavo Carlo, Alexandra Davis, Phuc Vo, Thi Ho, Mohamed Bayati, Jane McElroy, Francisco Palermo, Susan Nagel and Chung-Ho Lin. Pilot data on air quality and exposure to environmental toxicants in early childhood education centers.
5. Ade Ayu Dewayani, Shibu Jose, Ron Zalesny, and Chung-Ho Lin. Developing bio-remediation technology using *Pseudomonas putida* and poplar for restoring the petroleum contaminated sites.
6. Danh Cong Vu, Susan Nagel, Thi Ho, Phuc H Vo, Enji Mohamed Jamil, Christopher Kassotis, Chung-Ho Lin. Identification and quantification of the contaminants associated with hydraulic fracturing activities in urine and wastewater.
7. Thi L. Ho, Danh C. Vu, Fengzhen Wang, Craig Cuvellier, Steve Huebotter, Enos Inniss, Ranjith Udawatta, Shibu Jose, Chung-Ho Lin. Effectiveness of the engineered wetlands in removing 85 pharmaceuticals and personal care products in municipal wastewater.
8. Shu-Yu Hsu, Hsin-Yeh Hsieh, Minh Ma, George Stewart, Chung-Ho Lin. Dibenzofuran degradation pathway of *Pseudomonas mendocina* NSYSU.
9. Minh Ma, Hsin-Yeh Hsieh, Shu-Yu Hsu, Chung-Ho Lin, George Stewart. Degrading chlorinated dioxins using a *Bacillus thuringiensis* spore expression system.
10. William Neer, Melanie Body, Chung-Ho Lin, Rex Cocroft, Heidi Appel. Analysis of volatile organic compounds released by *Arabidopsis* in response to feeding vibrations.
11. Mélanie Body, Heidi M. Appel, Ryan A. Richardson, Chung-Ho Lin, Matthew Zinkgraf, Thomas Whitham, and Jack Schultz. Correlation between phytohormone patterns and resistance of poplar trees to a gall-inducing aphid.

Temperate Agroforestry Research – Considering Multifunctional Woody Polycultures and the Design of Long-Term Field Trials.

Lovell, S.T., C. Dupraz, M. Gold, S. Jose, R. Revord, E. Stanek and K. Wolz. 2017.
Agroforestry Systems doi:10.1007/s10457-017-0087-4

Abstract:

The many benefits of agroforestry are well documented, from ecological functions such as biodiversity conservation and water quality improvement, to cultural functions including aesthetic value. In North American agroforestry, however, little emphasis has been placed on production capacity of the woody plants themselves, taking into account their ability to transform portions of the landscape from annual monoculture systems to diversified perennial systems capable of producing fruits, nuts, and timber products. In this paper, we introduce the concept of multifunctional woody polycultures and consider the design of long-term experimental trials for supporting research on agroforestry emphasizing tree crops. Critical aspects of long-term agroforestry experiments are summarized, and two existing well-documented research sites are presented as case studies. A new long-term agroforestry trial at the University of Illinois, “Agroforestry for Food,” is introduced as an experiment designed to test the performance of increasingly complex woody plant combinations in an alley cropping system with productive tree crops. This trial intends to address important themes of food security, climate change, multifunctionality, and applied solutions. The challenges of establishing, maintaining, and funding long-term agroforestry research trials are discussed.

UPCOMING EVENTS

Agroforestry Workshop

8:30 a.m. – 4:30 p.m. | April 29, 2017 | Allen Project Site, Laurie, Mo

Workshop Features:

- Growing Ginseng
- Shiitake Mushrooms, Other Forest Products
- Forest Management for Forest Products Control of invasive species in fields & forests
- Birds of Prey and Eagle Nest Viewing
- Glade Restoration and Management
- Natural Beekeeping

For more information: <http://www.centerforagroforestry.org/events/DA%20field%20day%202017%20FLYER.pdf>

Registration: \$10

SNR Research Day

8:00 a.m. – 6:30 a.m. | May 3, 2017 | MU Campus

Monsanto Auditorium, Bond Life Sciences Building, University of Missouri

Celebrate SNR Research! Free and Open to the public.

2017 Missouri Tree Farm Conference

May 19-20 | Chillicothe, MO

Cost \$35 for 2 days.

Contact information: Mike Hoffmann (573) 418-6221

5th Annual Agroforestry Academy

July 23-28, 2017 | Columbia, Mo.

Registration closes June 30. Limited scholarships available for military veterans.

For more information: <http://www.centerforagroforestry.org/academy/2017/RegistrationBrochure.pdf>

Agroforestry for a Vibrant Future

June 27-29, 2017 | Squires Student Center, Virginia Tech, Blacksburg, Virginia

Connecting People, Creating Livelihoods, Sustaining Places

The 15th North American Agroforestry Conference is for agroforestry producers, researchers, educators and those involved with related work in the fields of permaculture and agroecology.

For more information: www.regonline.com/NAAC2017



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