



MIDDLE
TENNESSEE
STATE UNIVERSITY
INTERNATIONAL
GINSENG INSTITUTE

Middle Tennessee State University
School of Agriculture
International Ginseng Institute
July 2019 Newsletter

Welcome to Our New Tissue Culture Laboratory at IGI!



A new tissue culture laboratory created especially for the International Ginseng Institute was inaugurated in April, 2019. Located at MTSU's SAG Building, it will explore the idea that an efficient tissue culture regeneration system could allow asexual propagation of the crop, the selection and propagation of uniform germplasm, and manipulation of the genetic make-up of the plant. Although considerable progress has been made much more research and development is needed to understand and optimize tissue culture regeneration systems for American ginseng. Currently, we are adapting recently published tissue culture methods toward the development of efficient tissue culture regeneration systems via either somatic embryogenesis or shoot organogenesis using various explants derived from seed, leaf, petiole, or root.



Left (upper): Callus induction from ginseng flower stalk.
Left (lower): Callus induction from ginseng leaf disk.
Callus is the group of cells that can generate embryos and therefore the whole plant.



Right: A mature ginseng plant growing in June showing flowers.

New Raised Beds

Two 8ft X 12ft raised beds were built with the help of Dr. Nate Phillips and MTSU undergraduate students Killen Middleton and Federico Vollmer. They now house the wild ginseng plants generously donated in 2018 by Mr. Joe Tevepaugh who lives in Eastern Tennessee. These raised beds will serve as our plant stock, and allow community members and students to observe plant growth throughout the year.



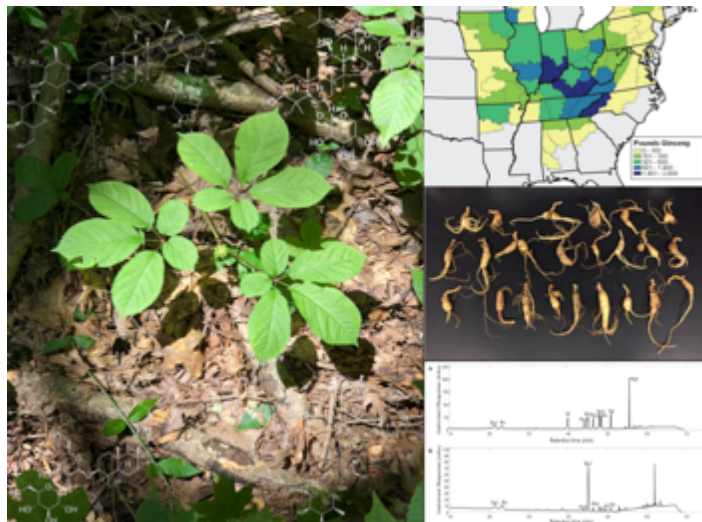
A big thank-you to Mr. Joe Tevepaugh for donating the plants!



Cover Story for *Chemistry & Biodiversity* Journal about Tennessee Ginseng

Our manuscript on ginsenoside analysis of Tennessee ginseng was recently published on the journal of *Chemistry & Biodiversity* in June 2019 and was chosen for a cover story in its July issue. This is the first study of TN wild ginseng ever published. The abstract of the article entitled “Simultaneous Determination and Analysis of Major Ginsenosides in Wild American Ginseng Grown in Tennessee” can be read at the journal website (<https://onlinelibrary.wiley.com/doi/10.1002/cbdv.201900203>). The full text will be available on IGI website once the final print version is released.

Ginsenosides are the major constituents responsible for the health effects of American ginseng. The content of ginsenosides indicate the potency of ginseng. Our findings showed that, despite of marked variations in TN wild ginseng populations, TN wild ginseng has significant higher (>3.5 times) ginsenoside content and more ginsenoside diversity than the cultivated ginseng.



Presentation on Ginseng Market Analysis at the College of Business

Murat Arik, Director of Business and Economic Research Center, and Iris Gao, Director of International Ginseng Institute, co-presented a study of “Analyzing Market Dynamics for Wild American Ginseng” at the Jones College of Business at MTSU on May 1, 2019. The study investigated some of the key questions in ginseng market: “Who are the key players in ginseng trade?” “What are the global trade dynamics in ginseng?” “What does the global retail market for American ginseng look like?” “What is the average price difference between wholesale and retail for wild American ginseng in Hong Kong market?” “What is the journey of wild American ginseng from the U.S. to Asian consumers?” “What are the implications of current market dynamics for wild American ginseng in TN?”... The study will soon be available in manuscript form and made available publicly.



Smithsonian 2020 Folklore festival on American Ginseng

AMERICAN GINSENG

LOCAL KNOWLEDGE, GLOBAL ROOTS

We were excited to learn that the Smithsonian Institution, the world’s largest museum, education, and research complex, is going to hold the 2020 Smithsonian Folklife Festival on American Ginseng. It will bring together participants with intimate knowledge of gathering, growing, trading, conservation, and medicinal use of this fascinating plant. During 10 days on the National Mall, the program will reach an estimated 700,000 visitors from the United States and around the world. Visitors will learn about “hunting” ginseng deep in the Appalachian forest, how ginseng is used in traditional Chinese medicine, cooking with ginseng, and promoting good stewardship of the plant and its environs. National recognition of the importance of American ginseng to regional culture, economy, ecology, and medicine will help further efforts to conserve the plant and its habitats.

Dr. Iris Gao was invited to be on the festival advisory committee and will join the first committee meeting in July 2019. The festival brochure is attached to the newsletter. Find out more on the Smithsonian’s digital magazine blog *Folklife*:

<https://folklife.si.edu/magazine/chocolate-ginseng-truffles>

New Legislative Benefits Tennessee Ginseng Growers

Legislation spearheaded by conservationist George Lindermann with assistance from the IGI was passed in Tennessee (HB0103 by Faison and SB0919 by Southerland) to legally classify as “wild” the undisturbed growth of planted seeds, plantlets, and transplanted roots. The amendment to TCA Title 70, Chapter 8, Part 2, was signed into law by Governor Lee in April. This amendment to the Tennessee Code has direct beneficial economic impact on the ginseng trade and opens the door for better stewardship of the plant by encouraging broader adoption of proven conservation methods which will sustain the harvest.

As always, remember that the International Ginseng Institute is your resource for all things Ginseng. Don't hesitate to contact us with your thoughts or concerns. We will keep you connected with the Community and continue to make this a better experience for all.

Visit us at www.mtsu.edu/ginseng

Write to us at ginseng@mtsu.edu