



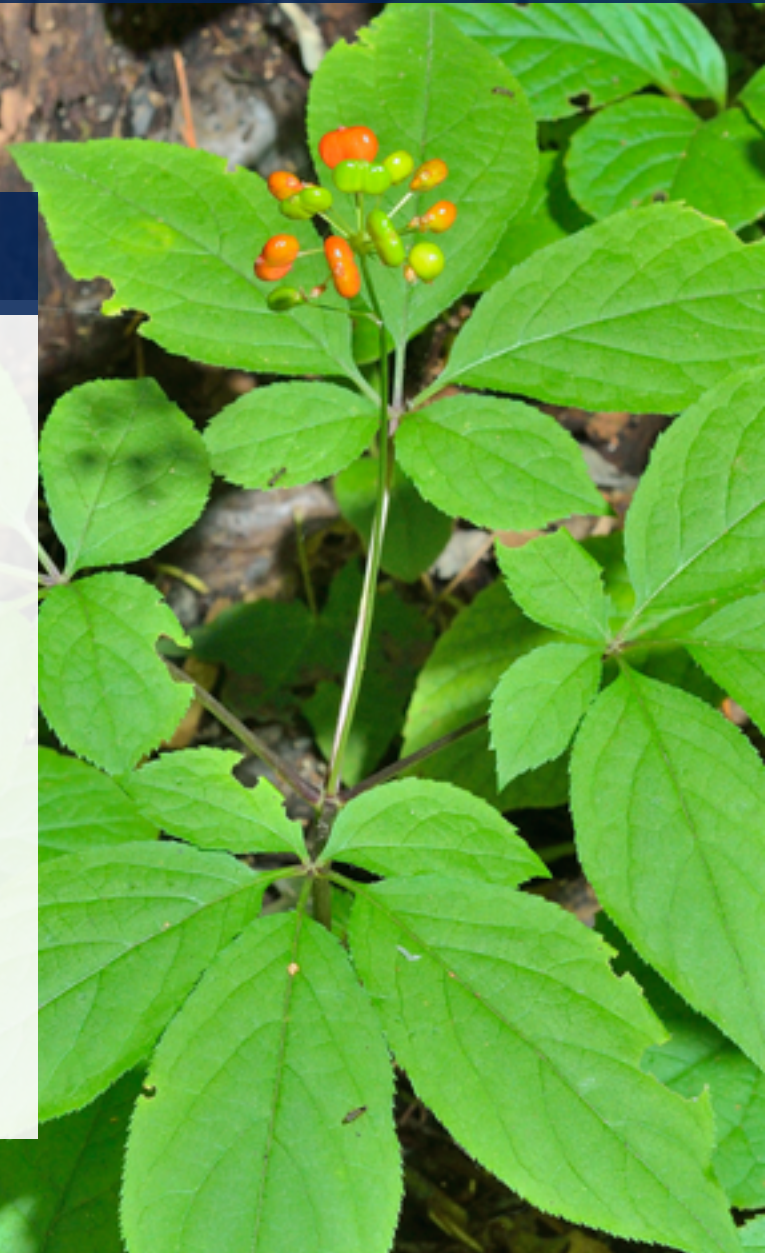
SCHOOL OF AGRICULTURE
MIDDLE TENNESSEE STATE UNIVERSITY

INTERNATIONAL GINSENG INSTITUTE

FALL 2020 NEWSLETTER

HIGHLIGHTS

- Free American ginseng seeds available, ready to be planted this fall
- MTSU helps ginseng experts map strategies for plant research, production
- MTSU study explores Tennessee's international ginseng trade
- MTSU researchers present ginseng research at state and national conferences
- Ginseng harvesting trends in Appalachia
- American ginseng in the media
- A new book about American ginseng by Dr. James McGraw



Free American ginseng seeds available for fall planting!

It's time again for planting ginseng! A big thanks goes out to **Robert "Bob" Beyfuss** for donating American ginseng seeds to IGI! These seeds are stratified, inspected, and tested for any pathogen contamination. We are happy to provide the seeds free to anyone who wants to plant them in Tennessee this fall. If you want to request some seeds, please send your mailing address to ginseng@mtsu.edu, and we will mail 1 ounce of seeds to you. If you are a first-time grower, let us know and we will send you a step-by-step instruction guide along with the seeds.

Happy Planting!



MTSU helps ginseng experts map future strategies for plant research, production



Robert "Bob" Beyfuss speaks at the Tennessee Ginseng Growers fall meeting held at Miller Education Center.

Middle Tennessee State University continues helping stakeholders statewide navigate the exciting opportunities from our ginseng that grows in the wild — and now with a growth period shortened in a university laboratory, Tennessee can lead the way.

A diverse national group of ginseng experts and enthusiasts met at MTSU to exchange ideas, evaluate current trends, and plan for the future during a two-day symposium focused on research surrounding the wild root and its medicinal and supplemental value.

In conjunction with the expert meeting, an all-day public open house in the atrium of the **Miller Education Center** was held, as was an update meeting the next day of farmers, growers, buyers, and sellers. Gao said, "The results of gathering together and discussing the latest trends and research findings provided a platform that enabled this stakeholders meeting to start with a mutual understanding and reach actionable conclusions." Three nationally renowned ginseng researchers—Bob Beyfuss, James McGraw, and Eric Burkhart—came together jointly for the first time to present their observations on and discuss the plant in Tennessee.

Murfreesboro welcomed ginseng friends from all over the country to this event. Betty Belanus, education specialist and curator at the Smithsonian Institution, Susan Leopold, executive director of United Plant Savers, Pat Ford, botanist in the Division of Scientific Authority with the U.S. Fish and Wildlife Service's CITES office, and Caitlin Elam, ginseng coordinator for the Tennessee Department of Environment and Conservation along with her colleague David Lincicome, Natural Heritage Program manager, also attended the meeting.



BERC study explores dynamics of Tennessee's international ginseng trade

A newly published study from the Business and Economic Research Center (BERC) at MTSU examines the growing international agribusiness sector of ginseng in Tennessee.

Dr. Murat Arik, director of the BERC, led the development of a pilot study to explore global supply chain dynamics for American ginseng. International demand is on the rise for wild simulated American ginseng—especially in China and South Korea—as climate conditions in parts of the United States allow for the cultivation of a suitable alternative to the endangered wild American ginseng.

The study further examines existing issues to help provide U.S. growers with suggestions to capture more market share. Research findings indicate that Tennessee's economy has the opportunity to achieve a larger market share by supporting investments in the cultivation and exportation of American ginseng. Currently, Tennessee does not partake in large agricultural ginseng operations.

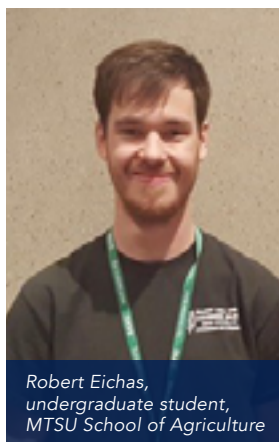
"The price of ginseng is on the rise because less volume is being circulated while the demand is increasing on the global stage," Dr. Arik said.

The study defined three major price points in the distribution chain that Tennessee growers could potentially face in the market for American ginseng: the average export price, wholesale price, and direct access price. Each of these price points is associated with greater levels of investment into market processes, such as pre-export grading and sorting.

For more details please visit mtsu.edu/berc/ginseng-study.php



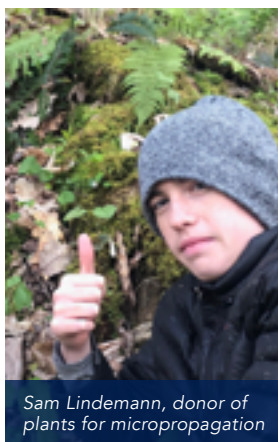
MTSU researchers presented ginseng research at state and national conferences



Robert Eichas,
undergraduate student,
MTSU School of Agriculture



Elizabeth Clippard,
undergraduate student,
MTSU Honor's College



Sam Lindemann, donor of
plants for micropropagation

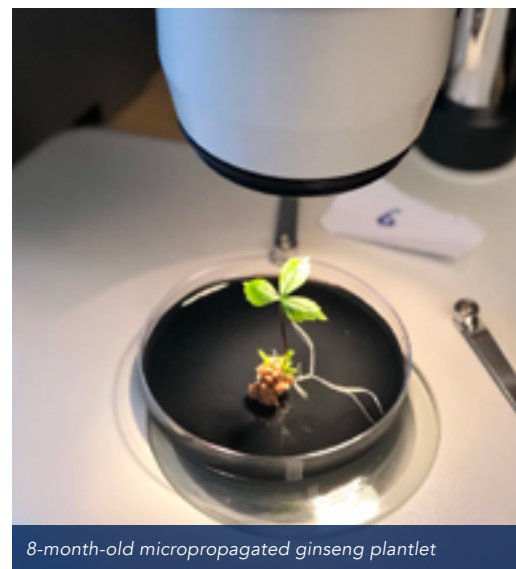
Despite the COVID-19 pandemic, our researchers have been making tremendous progress in researching ginseng and have presented some first-time findings derived from Tennessee ginseng. Here in Murfreesboro, we have established 48 experimental plots, two raised beds, and a micropropagation lab in the past two years dedicated solely to our research on this fascinating plant. We are thankful to the many ginseng donors who provide valuable materials for our research.

(continued)

We are proud that our researchers have presented ginseng research at the 2019 Tennessee Academy of Sciences Annual Conference and the 2020 American Society of Horticulture Science Annual Conference.

Here are some research topics that have been presented:

- Developmental Responses of American Ginseng (*Panax quinquefolius*) Seedlings Grown in Nutrient Solutions Absent of Either Iron, Calcium, Boron, or Manganese
- First and Second Year Growth and Development in Response to Environment and Seed Sowing Technique of Wild-Simulated American Ginseng (*Panax quinquefolius* L.) in Middle Tennessee
- Analysis of Ginsenoside Content in Tennessee Wild Ginseng by Optimized Standard CODEX Method and High-Performance Liquid Chromatography (HPLC)
- Comparison on Efficiency of Callus Induction from Various Explants of Wild American Ginseng (*Panax quinquefolius*)
- Simultaneous determination of major ginsenosides in wild American ginseng grown in Tennessee
- Wild-simulated American ginseng (*Panax quinquefolius* L.) seedling growth in response to environment and planting method
- Biotransformation of major ginseng saponins in ginseng wort via *Saccharomyces cerevisiae* accompanied with ginseng beer production



Here are our recent publications regarding ginseng:

- Recent Advances in the Tissue Culture of American Ginseng (*Panax quinquefolius*)
Chemistry & Biodiversity
- Implications of changing supply chain dynamics of global ginseng trade: A pilot study
Journal of Strategic Innovation and Sustainability
- Simultaneous determination and analysis of major ginsenosides in wild American ginseng grown in Tennessee
Chemistry & Biodiversity
- Recent Advances in Ginsenosides as Potential Therapeutics Against Breast Cancer
Current Topics in Medicinal Chemistry

Ginseng Harvesting Trends in Appalachia

We want to share with you a good resource examining ginseng harvesting trends over the past five years in Appalachia—the RootReport developed by Virginia Tech. The state of Tennessee ranks third in the amount of ginseng harvested, after Kentucky and West Virginia. The ginseng trend in Tennessee from 2015 to 2017 was from 8,725 dry pounds to 5,498 dry pounds, a drop of 37%. Overall, the ginseng harvest has been declining in all ginseng states. This decline emphasizes the need for wild-simulated or woods-grown cultivation. Additionally, we also see an increase in the green ginseng trade over the past five years.

Total amount of ginseng harvested by state in dry pounds (2015-2017)

State/Tribe	2015	2016	2017	Average	Change from 2015-2017
KY	14,533	8,413	8,400	10,449	-42%
WV	8,056	6,404	6,044	6,835	-25%
TN	8,725	4,432	5,498	6,218	-37%
NC	7,420	5,514	5,370	6,101	-28%
IN	5,590	3,833	3,283	4,235	-41%
OH	4,870	2,856	3,001	3,576	-38%
VA	4,081	2,360	2,433	2,958	-40%
IL	3,965	1,746	1,278	2,330	-68%
MN	1,950	630	1,114	1,231	-43%
PA	1,337	1,054	1,094	1,161	-18%
WI	1,295	702	591	863	-54%
MO	1,242	792	491	842	-61%
IA	558	1,152	385	698	-31%
AR	747	387	660	598	-12%
NY	718	538	403	553	-44%
AL	532	231	327	363	-39%
GA	335	132	204	224	-39%
MD	225	111	56	131	-75%
Menominee		126	63	95	n/a
VT	104	78	53	78	-49%
Total	66,284	41,490	40,748	49,507	-39%

Average roots per dry pound and percentage of total pounds reported as dry by state (2017)

State	Roots Per Pound	Percent Bought Dry
AR	250	93%
AL	119	n/a
GA	140	39%
IA	135	28%
IL	n/a	97%
IN	311	n/a
KY	284	83%
MD	363	91%
MN	150	64%
MO	183	n/a
NC	314	34%
NY	160	2%
OH	327	56%
PA	127	65%
TN	216	65%
VA	213	n/a
VT	130	n/a
WI	114	25%
WV	225	49%
Average Roots Per Pound	209	

Tables sourced from *RootReport: Spotlight on Ginseng*. Steve Kruger & John Munsell, Virginia Tech. For the full report please visit rootreport.frec.vt.edu/docs/ginseng2020.pdf

Ginseng in the Media



**NATIONAL
GEOGRAPHIC**

The January 2020 issue of National Geographic magazine has published an article: *Demand for ginseng is creating a "wild west" in Appalachia*. The IGI was interviewed and quoted in this article. You can find the full article at nationalgeographic.com/animals/2020/01/ginseng-root-appalachia.html



The IGI is also represented for ginseng on the Smithsonian's 2020/2021 Folk Life Festival. Here are some links to several interesting blogs about American ginseng: festival.si.edu/blog/2020-folklife-festival/american-ginseng

"Story Circle: Women to the Rescue! Conserving American Ginseng" is a conversation among women who advocate for the conservation of American ginseng, a valuable medicinal plant native to the Appalachian region.

When: May 14, 2020

Where: Broadcasting live on the [Smithsonian Folklife Facebook](#) page

For centuries, wild American ginseng has been used by Native Americans and traded with China for its medicinal properties. Native to the Appalachian region, the valuable plant now suffers from overharvesting and land development. In a Smithsonian Folklife Festival event on Facebook Live, meet three women who are passionate about conserving American ginseng in their communities.

<https://s.si.edu/2WILHDI>

American ginseng got a lot of attention this year. Here's a broadcast on NPR.

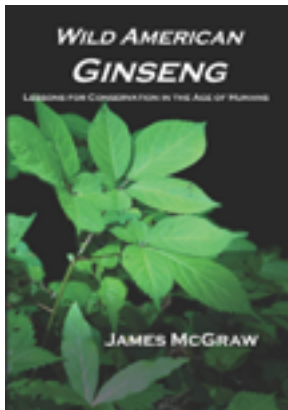
"The Problem of The Root"

When: June 17, 2020

Where: npr.org/2020/06/17/879511496/the-problem-of-the-root

"...But not all ginseng is created equal. There's cultivated ginseng and wild ginseng. And the wild stuff is where the money is. It can cost a thousand dollars a pound, or more. There is a problem with this market: No one quite knows what wild is. Today on the show, we go to a hidden ginseng farm and try to find out."

A New Ginseng Book Recommendation



Wild American Ginseng: Lessons for Conservation in the Age of Humans by James McGraw was released on June 10, 2020. This book became the #1 New Release in the Amazon categories of Endangered Species, Environmentalism, and Nature Conservation.

Wild American Ginseng, America's most famous medicinal plant, is in trouble. In plain prose, Dr. James McGraw explains why as he translates the latest in ecological and conservation science findings on this unassuming understory herb. As the world's foremost authority on wild ginseng, Dr. McGraw is uniquely poised to present this story based on over 20 years of uninterrupted field research. In this volume, he traces the dramatic ecological history of ginseng in North America, documenting the ginseng-centric view of a world increasingly dominated by both direct and indirect actions of humans. Far more than a story of a single plant species, ginseng becomes a parable, a canary in the coal fields, for what is happening

to dwindling wild species across the globe. He documents lingchi, death by a thousand cuts, in human interactions with wild species, that is slowly eroding biodiversity and diminishing our collective 'biotreasury.' Not content to just document our destruction of nature, Dr. McGraw offers a pathway to an optimistic future for ginseng and the wild species with whom we share the planet. He suggests a New Deal with Nature is required, and to implement it requires us to both heed the scientific warnings before us, and to take concrete action in which our policies toward nature take on a holistic, ecosystem view with a long time horizon. A dramatic expansion of our commitment to sharing the planet with our fellow planetary companions is the key to preservation, and now is the time to do so.

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 mtsu.edu/ginseng, and write to us at ginseng@mtsu.edu

I AM *true*
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