



# From MTSU to Your Farm: What we can provide to assist you to grow wild-simulated ginseng

Iris Gao, Ph.D.

[ying.gao@mtsu.edu](mailto:ying.gao@mtsu.edu)

Aug 24<sup>th</sup>, 2018

# Our Program

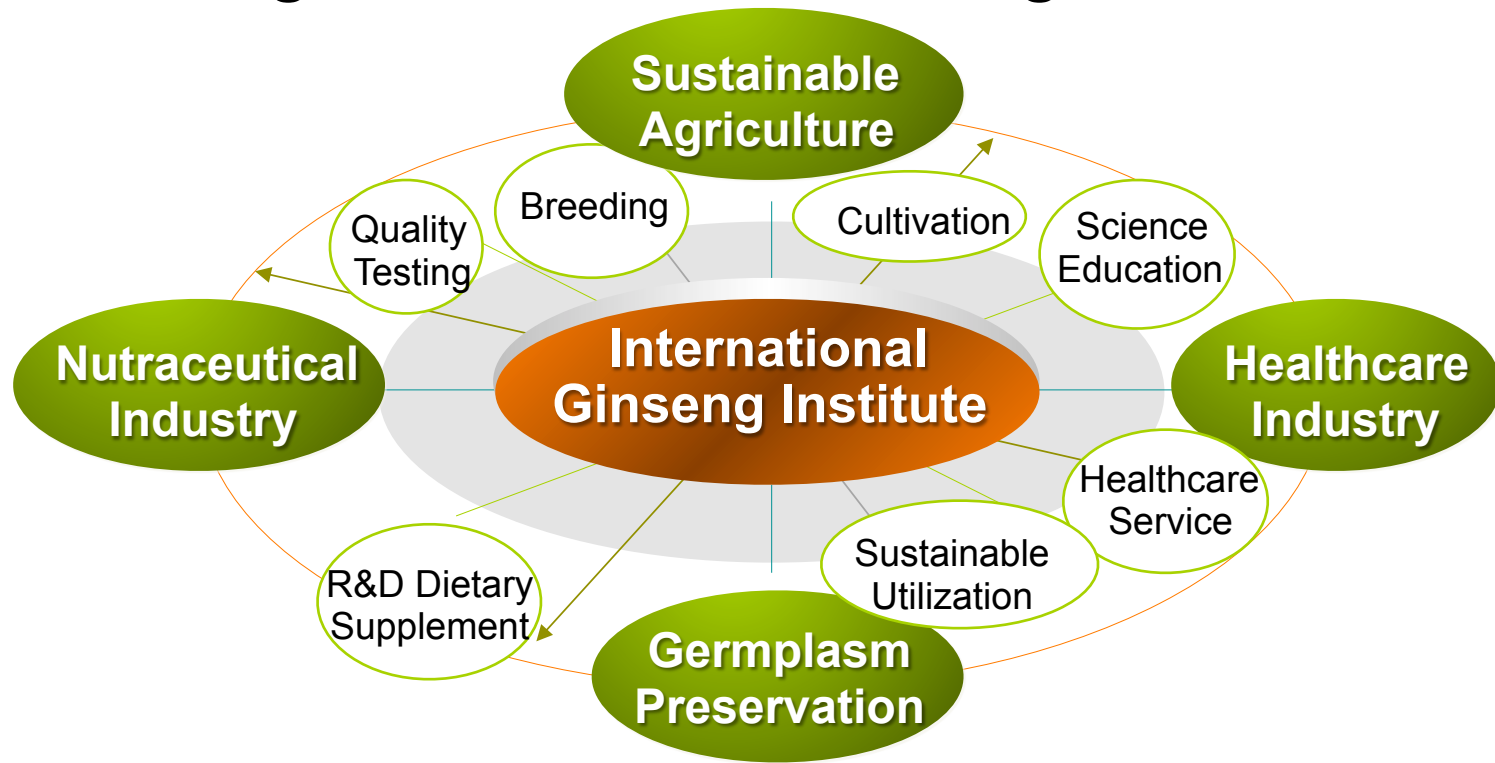
- We are here to help you grow wild-simulated ginseng in TN.
- Two goals:
  - Conservation of the endangered wild American ginseng
  - Increase your income



This program is supported by USDA and MTSU.

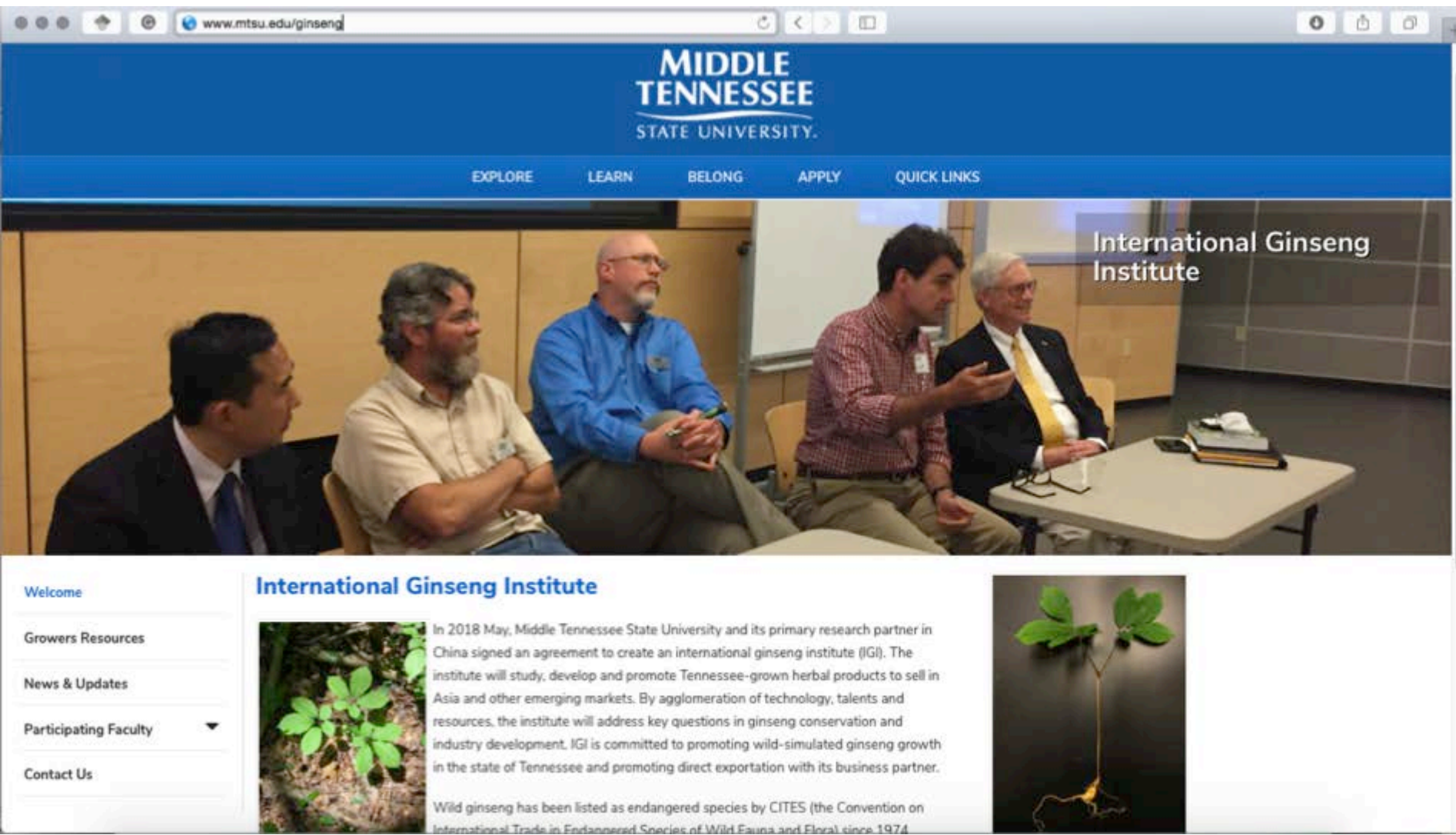
# Update of the Ginseng Program at MTSU

- Founding of International Ginseng Institute



# Update of the Ginseng Program at MTSU

- New website: [www.mtsu.edu/ginseng](http://www.mtsu.edu/ginseng)



**MIDDLE TENNESSEE STATE UNIVERSITY.**

EXPLORE LEARN BELONG APPLY QUICK LINKS

International Ginseng Institute

Welcome

Growers Resources

News & Updates

Participating Faculty

Contact Us

### International Ginseng Institute

In 2018 May, Middle Tennessee State University and its primary research partner in China signed an agreement to create an international ginseng institute (IGI). The institute will study, develop and promote Tennessee-grown herbal products to sell in Asia and other emerging markets. By agglomeration of technology, talents and resources, the institute will address key questions in ginseng conservation and industry development. IGI is committed to promoting wild-simulated ginseng growth in the state of Tennessee and promoting direct exportation with its business partner.

Wild ginseng has been listed as endangered species by CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) since 1974

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## Growers Resources

- ➔ [International Ginseng Institute Introduction](#)
- ➔ [The Health Benefits of American Ginseng](#)
- ➔ [From MTSU to Your Farm: MTSU assists you to grow wild-simulated ginseng in Tennessee](#)
- ➔ [Cost Guides for Wild-Simulated Production Models in Tennessee Mountainous Terrain](#)
- ➔ [Visual Site Assessment and Grading Criteria for Growing Wild-Simulated Ginseng](#)
- ➔ [Wild Simulant Production Methods for American Ginseng Farms in Tennessee](#)

# Update of the Ginseng Program at MTSU

- Development of a cost guide for growing wild-simulated ginseng in TN

Method	Unit	Qty	\$/Unit	Total
<b>Method 1</b>				
Seed	lb.	2	\$ 150.00	\$ 300.00
tools	dibble stick	2	\$ 8.00	\$ 16.00
Labor	hour	47	\$ 10.26	\$ 482.22
totals				<b>\$ 798.22</b>
<b>Method 2</b>				
Seed	lb.	4	\$ 150.00	\$ 600.00
tools	Rakes	2	\$ 15.00	\$ 30.00
Labor	hour	33	\$ 10.26	\$ 338.58
totals				<b>\$ 968.58</b>

## Cost Guides for Wild-Simulated Production Models in Tennessee Mountainous Terrain

Shannon Smith<sup>1</sup>, Dr. Ying Gao<sup>2</sup>, Dr. Elliot Altman<sup>1</sup>, Dr. John DuBois<sup>1</sup>, Dr. Nate Phillips<sup>2</sup>

<sup>1</sup>-Tennessee Center for Botanical Medicine Research, Middle Tennessee State University, Department of Biology  
<sup>2</sup>-Middle Tennessee State University-School of Agribusiness and Agriscience

### Introduction

Asian ginseng (*Panax ginseng*) is a fleshy root plant that has been used for millennia in Asian medicines. American ginseng, or *Panax quinquefolius*, is the North American cousin to Asian species and both are members of the ivy family. Both the Asian and American species have been valued throughout history, and collected or cultivated for use. Overseas sales records date back to colonial times in the United States. These sales have led to a change in the natural growing range of the plant. The three most prolific producers for consumption as of 2014 are China, the Korean Peninsula and North America. The market has placed a premium on wild and wild simulated roots, and typically they fetch a much higher price. Because of that, this article is detailing out the costs for producing ginseng in the wild simulated model. The reasons for this are twofold. First, wild simulated models of production require less maintenance and inputs. Secondly, wild simulated roots have been shown to fetch higher prices than row cropping methods. This guide draws heavily on Agricultural Extension sources, the Department of Labor Statistics, our partners in the Agricultural Extension programs research and the work of the Tennessee Center of Botanical Medicine Research.

### Background

The following guide relies on these assumptions relating to site selection, preparation, maintenance and security.

### Site Requirements

American ginseng is a shade-loving plant, and its preferred habitat reflects that. Locations with full shade, in deciduous hardwood forests are typically the best choices for sites when employing the wild simulated method of production. Ginseng is a plant that naturally grows in established hardwood forests, with trees that have deep roots. Deep-rooted trees will compete less for water with ginseng plants than shallow-rooted trees, while still providing cover. In addition to the light filtering, the trees deciduous nature will also give the added benefit of seasonal mulching due to leaf drop. Hilly areas with slight to moderate slope will allow for good drainage, another positive trait for the site. Since there is

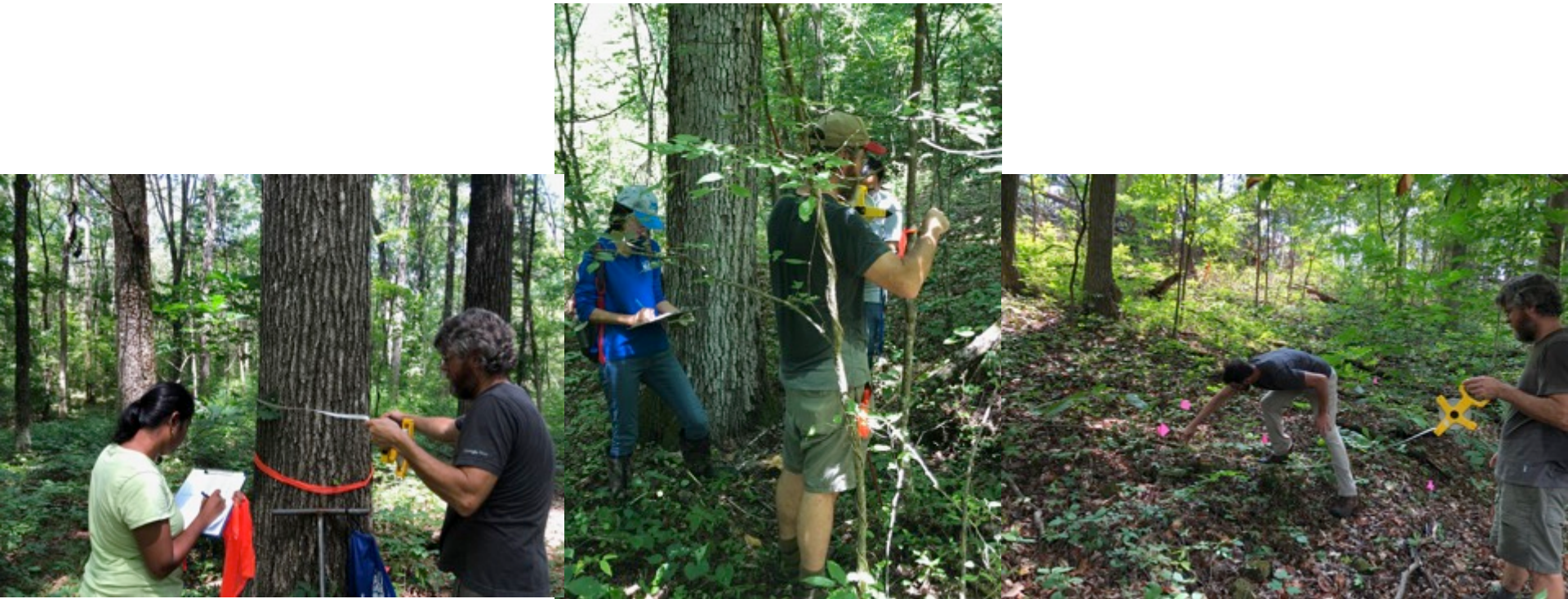
# Update of the Ginseng Program at MTSU

- Field studies on vegetation associated with wild ginseng



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- Field studies on vegetation associated with wild ginseng






# Update of the Ginseng Program at MTSU

- Development of ginsenoside testing procedures

1301 East Main Street  
Murfreesboro, TN 37132  
www.mtsu.edu/ginseng

Tel: 615-898-2430  
ginseng@mtsu.edu

**SAMPLE**

 *International Ginseng Institute*  
MIDDLE TENNESSEE STATE UNIVERSITY

## GINSENOSE ANALYSIS

**Level II – Total Crude Ginsenosides  
& Three Major Ginsenosides (Rg1, R3, and Rb1)**

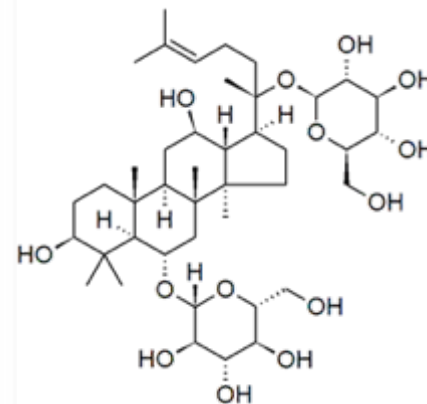
Description: Ginseng Root (dry)      Date Certified: Aug 24, 2018  
Lot No: 20180824-01      Sample Size: 12.6 g

Species:	Tolerance:	Result:*
Total Crude Ginsenosides	$\geq 20 \text{ mg/g}^3$	62.3 $\text{mg/g}^3$
Rg1 + Re	$\geq 3 \text{ mg/g}^3$	6.9 $\text{mg/g}^3$
Rb1	$\geq 2 \text{ mg/g}^3$	5.7 $\text{mg/g}^3$

\*Individual ginsenosides were quantified by high-performance liquid chromatography (HPLC) method.

Certified by \_\_\_\_\_  
Dr. Mengliang Zhang

The International Ginseng Institute at MTSU is accredited to CODEX STAN 321-2015 and People's Republic of China Pharmacopoeia 2015



## CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS

 Food and Agriculture Organization of the United Nations  World Health Organization

E-mail: [codex@fao.org](mailto:codex@fao.org) - [www.codexalimentarius.org](http://www.codexalimentarius.org)

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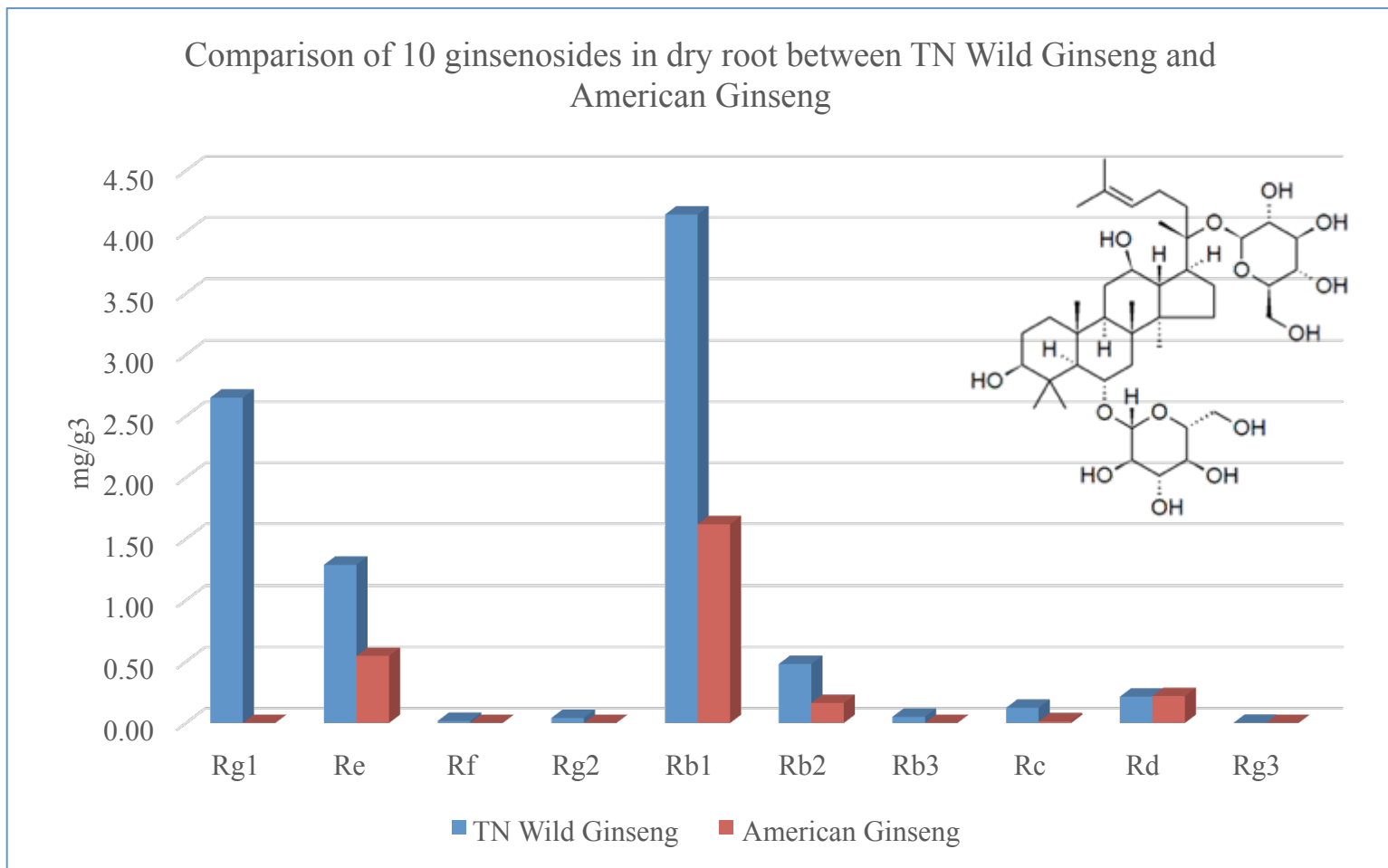
 

**STANDARD FOR GINSENG PRODUCTS**  
**CODEX STAN 321-2015**

**World Health Organization**

# Update of the Ginseng Program at MTSU

- Comparison of ginsenoside contents between TN wild ginseng and WI cultivated ginseng



# Update of the Ginseng Program at MTSU

- Ginseng nutrient study in hydroponics
  - Effect of nutrients to ginseng growth
  - Effect of pH to ginseng growth
  - An up-to-date nutrient guide to ginseng growers



# Update of the Ginseng Program at MTSU

## What's next?

- A GIS-based decision support system for preliminary assessment of ginseng growing potential
- A Collaboration with Geoscience Department at MTSU

# Update of the Ginseng Program at MTSU

## What's next?

- Market Analysis
- A Collaboration with Business and Economic Research Center, Jennings A. Jones College of Business at MTSU

# Update of the Ginseng Program at MTSU

## What's next?

- Wild-strain seedlings
- A dedicated tissue culture lab to ginseng seedling production



# Acknowledgements



Contact us at  
[ginseng@mtsu.edu](mailto:ginseng@mtsu.edu)

## Co-PIs

Dr. Nate Phillips

Dr. Mengliang Zhang

Dr. Murat Arik

Dr. Racha El Kadiri

Dr. Henrique Momm

## MTSU students

David Lee Rumble

Revathimadhubala Kuruganti

Eric Limbird

## Visiting Scholars

Dr. Yuhang Guo (GXUCM)

Dr. Jian Liang (JNU)