



**Why Ginseng?**

**USA's Green Gold:  
American's most valuable plant**

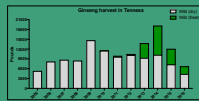


- TN was one of the earliest states to export American ginseng to the Orient, beginning in the 18th century.
- TN's massive forestland provided the best habitat for American ginseng.
- However, TN's wild harvest is declining due to overharvesting.

**Not new to Tennessee**



**The beginning of the China-US trade relationship.** In Aug 28, 1783, the first American merchant ship Empress of China sailed to Guangzhou, the only port opened for foreign trade in China at that time (Qing Dynasty). She was carrying approximate 30 tons of American Ginseng!



**Our Program**

Funded by USDA and MTSU, our program is committed to promoting wild-simulated ginseng growth in the state of Tennessee.

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. Each year, there are an average of 10,000 dried pounds of wild ginseng, (which equals about 2.5 million plants), removed due to harvest from the woods in Tennessee.

**Our Goals:** 1. conservation of this endangered plant species by replacing wild harvest, 2. increase the income of TN farmers.  
**Our Mission:** provide practical, step-by-step assistance to help farmers to grow this valuable medicinal plant.



MIDDLE TENNESSEE STATE UNIVERSITY

**Why Wild-simulated Ginseng?**

**Wild/Wild-simulated vs. Field-cultivated ginseng**

- **Wild-simulated ginseng** is grown in a forest environment to utilize the natural shade. The land is not tilled and no fertilizers, no herbicides or fungicides are used. The wild-simulated ginseng has nearly the same quality and value as wild harvested plants.
- **Field cultivated ginseng** is grown under artificial shade cloth with deep soil tillage and raised planting beds. Aggressive pest and pathogen management is essential with field cultivated. Rotations lengths of three to four years are typical and yield a high volume of lower quality roots.
- The field-cultivated roots are very easy to tell from wild/wild-simulated varieties.
- In contrast to western customer's preference for capsules and pills, Asian customers, Tennessee's main export market, favor the whole roots that have visible traits such as verifiable growth rings.



Fig. from [Holding Ginseng.com](http://Holding Ginseng.com)

**Challenges of Ginseng Cultivation**

**Growing wild-simulated ginseng can be a challenge to Tennessee Growers**

- 7-10 years to harvest mature roots
- Know your land and know this plant?
- Pests and diseases
- Nutrient deficiency
- Harvesting, drying, processing
- Marketing

**How We Can Help You**

**Pre-planting**

- Site assessment and selection: shade, vegetation, slope, soil
- Soil test interpretation
- Soil amendment recommendations



Collect soil sample

**During growing**

- Best-practice guidance to improve the quality of roots.
- Seed viability test.
- Wild-strain seedlings (under development).
- Identification of diseases and pests.
- Plant nutrient deficiency test -Foliar analysis (under development).



Seed viability test

**Harvesting**

- Ginsenoside analysis.
- Export certificate (to be developed).



Ginseng seedlings

**Post-harvesting**

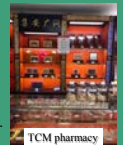
- Ginseng extract preparation
- Bioactivity analysis: anti-cancer, anti-inflammation, cardiovascular protective, and neuroprotective activities

**Marketing**

- Export market access.

**Other**

- Future workshops.
- Cost guide to growing wild-simulated ginseng.
- Trained student interns.
- Tennessee ginseng growers network.



TCM pharmacy

In 2018 May, Middle Tennessee State University and its primary research partner in China signed an agreement to create a joint ginseng institute. 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.

