

# How to Be Prepared for the Fall Planting Season

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# Site Assessment

- Visual Site Assessment & Grading Criteria
- Bob Beyfuss
- New York, Maryland, North Carolina
- Dominant tree species differed in Arkansas
- Tennessee?
  - Mid TN – 2018
  - East TN - 2019





# Methods

- Flag ginseng plants
- 10m radius (~60ft circle)
  - Densest cluster = center
- Mark all trees >2.5cm (~1")
- ID and measure trees
  - DBH (diameter at breast height)
  - Crown class
  - Canopy cover









# Ginseng Plant Measurements





# Ginseng Plant Measurements





2018 - All Sites (N=12)	
Sugar Maple	68.60
Tulip Poplar	35.37
Shagbark Hickory	25.21
Northern Red Oak	18.81
Mockernut Hickory	17.04
Ash species	15.78
Beech	12.71
Sassafrass	12.30
Dogwood	9.51
Redbud	8.15
Hackberry	7.67
Blackgum	6.95
Chinkapin Oak	6.83
Black Walnut	6.22
Red Mulberry	6.02

Trees with Diameter >15"	Percentage
Shagbark Hickory	24.3
Sugar Maple	18.9
Tulip Poplar	18.9
Northern Red Oak	13.5
Chinkapin Oak	5.4
Ash species	5.4
Black Walnut	2.7
Sweetgum	2.7
Southern Red Oak	2.7



# Preliminary take-aways

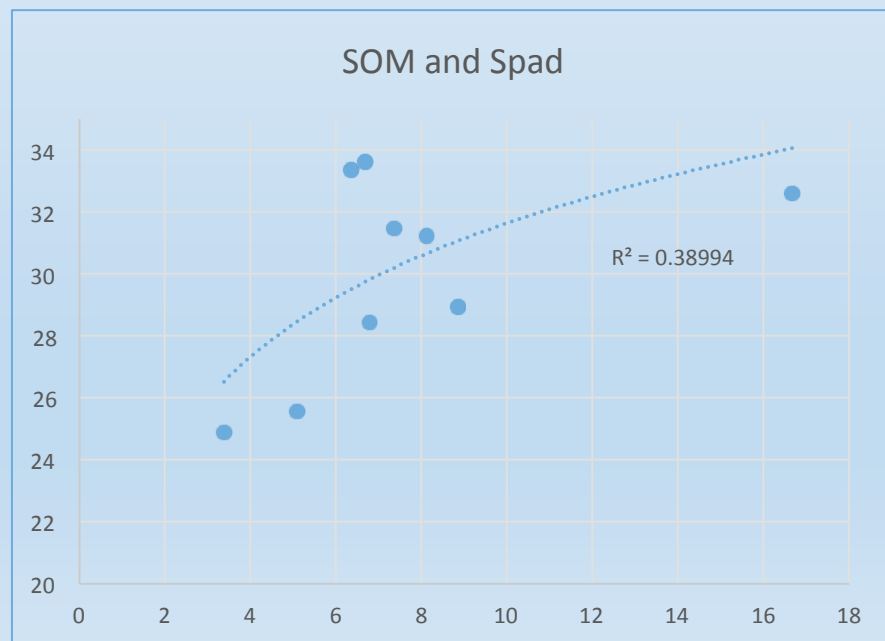
- Beyfuss - Grading Criteria
  - Very useful and applicable
- Category A – Dominant Trees
  - Consider Hickory, Tulip Poplar, Black Walnut and Red Oaks
- Differences in East TN?
  - Possibly
  - Going east in 2019

2018	
Redbud	70.25
Ash species	36.35
Black Walnut	34.06
White Oak	33.20
American Plum	31.16
Hackberry	22.23
Northern Red Oak	21.34
Chinkapin Oak	20.64
Eastern Red Cedar	14.67
Pawlonia tomentosa	9.34
Slippery Elm	6.76

# Soil Tests

- 2 soil tests for each site
  - 3 samples mixed
  - Center and periphery
- UT Soil Plant and Pest Diagnostic Center

- pH (5.17-7.61)
- P (3-10)
- K (48-166)
- Ca (424-9828)
- Mg (66-315)





# Ginseng Seed

- Deep simple double morphophysiological dormancy
  - 18+ months to germinate
  - Must retain moisture for two winters and one summer
- Reputable seed companies
  - You get what you pay for
  - Stratified seed – year in moist sand (cold/warm)
- Keep seeds moist and cold prior to planting
- Viability test
  - Float test
  - Tetrazolium test
- Anti-fungal treatment
  - 10% bleach soak for 2 minutes



# Collecting Seed

- Must plant wild seed in place
- De-pulping or fermentation
  - Not necessary
  - Reduces space needed
  - Reduces disease potential
- Fermentation process
  - Mash berries in bucket
  - Keep mixed/stirred for 6-10 days
  - Moist cloth covering the bucket (cool dark area)
- When seeds are exposed, clean and prepare to stratify



<https://upload.wikimedia.org/wikipedia/commons/ff/ff/Marathonginsengberry.jpg>



# Seed Stratification

- Same method for berries or de-pulped seeds
- You need a breathable protective container
  - Screen pouch, box, bucket, etc.
  - Protects from rodents
- Layer seed and moist sand until full or out of seeds
  - Bury container with the top 2-3" below surface
  - In ginseng planting area and or a sloped location
    - Drainage
    - Not too wet

# Planting Test Plots

- For beginners or new areas
- 3' X 3' test plots
  - 50 seeds per plot
  - 2oz = 16 test plots
- Rake back leaves, remove large rocks
  - Scratch and groove soil surface
- Plant seeds no more than ½"
- Tamp soil to ensure good soil/seed contact
- Early spring use slug traps
  - More than two before germination – control slugs
- Count number of seeds germinating
- Count surviving seedlings in fall
- Keep records and expand plots that do best



[http://www.anderra.co.uk/wp-content/uploads/blog\\_slug\\_trap\\_full.jpg](http://www.anderra.co.uk/wp-content/uploads/blog_slug_trap_full.jpg)



# Year 1 Issues

- Lack of germination
  - Poor seed, improper storage, predation prior to germination
- Damping off
  - Fungal, constriction of stem
  - Cool wet weather, straw mulch
- Slugs
- Sunburn
  - Wrong environment
- Spindly plants
  - Competition from other plants



**Alternaria blight**

# Chemical Options

- **Elevate 50WDG fungicide** - Botrytis leaf and fruit blight
- **Omega 500F fungicide** – Rhizoctonia Root Rot, Alternaria Blight, Botrytis
- **Bravo Weather Stik fungicide** – Alternaria Blight, Gray Mold
- **Forum fungicide** – Phytophthora foliar blight
- **Captan 80WDG** - Rhizoctonia, Pythium, Phytophthora, Cylindrocarpon destructans, Botrytis
- **Reason 500SC** - Phytophthora Root Rot
- **Endura fungicide** – Botrytis, Alternaria
- **Cabrio EG fungicide** – Alternaria, Cercospora, White Rust, Powdery Mildew
- **Scala SC fungicide** - Alternaria Blight, Botrytis Blight
- **Revus, Orondis Ultra B** - Phytophthora Root Rot
- **Orondis Opti A, Orondis Ultra A** - Phytophthora Root Rot
- **Quadris Top** – Alternaria Blight, Powdery Mildew
- **Deadline GT** – Slugs, Snails



# Site Preparation

- Timing – after leaf drop
- No tilling!
  - Less disturbance = healthy soil / diversity = reduced pest pressure
  - Tilling = faster growth = less valuable roots
- 5' X 50' bed – 1 ounce of seed
  - Rake off leaves
  - Pull three furrows with hoe (approx.  $\frac{3}{4}$ " deep)
  - Plant seeds 3" apart down each row
  - Rake leaf litter back on top (no more than 2")
- Apply gypsum, lime and/or phosphate
  - according to soil test



[http://www.ginsengeek.org/wp-content/uploads/2013/12/IMG\\_1780.jpg](http://www.ginsengeek.org/wp-content/uploads/2013/12/IMG_1780.jpg)



Happy Growing!





# Available Resources

- Smith, Dubois, Phillips, and Clardy, 2017. Wild Stimulant Production Methods for American Ginseng Farms in Tennessee
  - [http://www.tnstate.edu/extension/documents/wild\\_stimulant\\_production\\_ginseng\\_tennessee.pdf](http://www.tnstate.edu/extension/documents/wild_stimulant_production_ginseng_tennessee.pdf)
- Beyfuss, 2017. The Practical Guide to Growing Ginseng
  - [https://ecommons.cornell.edu/bitstream/handle/1813/54771/Practical\\_Guide\\_Publisher.pdf?sequence=4&isAllowed=y](https://ecommons.cornell.edu/bitstream/handle/1813/54771/Practical_Guide_Publisher.pdf?sequence=4&isAllowed=y)
- Hankins, 2009. Producing and Marketing Wild Simulated Ginseng in Forest and Agroforestry Systems
  - [https://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/354/354-312/354-312\\_pdf.pdf](https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/354/354-312/354-312_pdf.pdf)