Back Yard Maple Syrup and Ginseng Production

Jesse A. Randall
ISU Forestry Extension
515-294-1168
An American tradition
Why Maple? Why Now

- History of maple production in Iowa
- Conversion from oak/hickory to maple/basswood
- Land ownerships change (smaller parcel size)
- Family and Community centered tradition
- Spring is syrup season
  - (warm days / freezing nights)
- Syrup self-markets!
• 1809 – Graves family in WNY
• 1848 – Bush family – commercial maple operation
• 1918 – Tapped 2100 buckets (basswood & cucumber)
• 1950 – Tapping 4000 buckets
1975

Under the guise of “teaching the kids the family tradition”, Mission Creep begins!
1982
1 mile of mainline pipe
4-5 miles of lateral lines
1985
Sugar house was expanded to included a reverse osmosis machine

2007 - 2008
Expand from 2000 to 6500 taps
This hobby does not have to be costly !!!

Drill
Spiles
Collection bucket
Sap storage
Boiling pan and fuel
Syrup filter and storage
Drill a 7/16\textsuperscript{th} hole with a slight upwards angle – 1.5-2” deep
Lightly tap in spile
Hang the bucket
Wait!

- Do not let sap freeze in the buckets

$10-15$ per $25$ taps
Boiling sap takes lots of time and fuel!!

40 gallons of sap = 1 gallon of syrup
1 tap = 10 gallons of sap = 1 quart of syrup
Raising Ginseng in your woods!

- *Panax ginseng* – Asian ginseng
- *Panax quinquefolium* – American ginseng

- Not Siberian, Brazilian, or Indian Ginsengs
  - No/limited ginsenocides compounds
Panax quinquefolius

- Perennial, herbaceous and long-lived
- Regrows from root
- Annual stem
- Compound leaves
  - Ovate & serrated
  - Form “prongs”
- Flower spike
Distribution

- Native to eastern North America
  - Ontario & Quebec
  - New England
  - Appalachia
  - Ozarks
  - Upper Midwest
Seed Production

• Flowers in May
• Ripen in August
• 1-3 seeds in berries
• Stratify 18-22 months
• Germinate in April
Prong Development

• 1 year seedling
  – Trifoliate, 2-3”
• 2 year plant
  – Single prong, 4-7”
• 3 - 6 year plants
  – Two prongs
• 7 - 9 year plants
  – Three prongs
• 10 to 11 year plants
  – Four prongs, 20-24”
Aging Roots

Diagram showing the structure of aging roots with labeled parts:
- Aerial Shoot
- Aerial Shoot Bud
- Root Collar
- Adventitious Root

Numbers 1 to 10 indicate different sections or features of the roots.
Preferred Conditions

• Hardwood forest
• North to east slopes
• 5-20% grade
• 75% shade or more
• Cool and moist
Preferred Soils

• Loamy to sandy loam
• High organic matter
• Well drained
• 4.5-7 pH
• 4000 lbs/acre calcium
• 95 lbs/acre phosphorus
Overstory Indicators

- Sugar maple, *Acer saccharum*
- Basswood, *Tilia americana*
- Black walnut, *Juglans nigra*
- Red Elm, *Ulmus americana*
- Red oak, *Quercus rubra*
Understory Indicators

• Maidenhair fern, *Adiantum pedatum*
• False Solomon’s seal, *Smilacina racemosa*
• Rattlesnake fern, *Botrychium virginianum*
• May apple, *Podophyllum peltatum*
• White baneberry, *Actaea pachypoda*
• Hepatica, *Hepatica acutiloba*
• Blue cohosh, *Caulophyllum thalictroides*
Understory Indicators

- Jack-in-pulpit, *Arisaema triphyllum*
- Christmas fern, *Polystichum acrostichoides*
- Goldenseal, *Hydrastis canadensis*
- Blood root, *Sanguinaria canadensis*
- Leeks, *Allium tricoccum*
- Trillium, *Trillium spp.*
- Wild ginger, *Asarum canadense*
Field Cultivated

- Artificial shade
- Field soils
- Straw mulch
- Raised beds
- 3-4 year rotations
- 100 lbs/acre of seed
- 2,500 lbs/acre of root
- Worth 8-10 dollars / pound
Woods Cultivated

- Natural shade
- Forest soils
- Leaf mulch
- Raised beds
- 6-9 year rotations
- 48 lbs/acre of seed
- 600 lbs/acre of root

- Worth $150-$250 / pound
Wild Simulated

- Natural shade
- Forest soils
- Leaf mulch
- No Tillage
- 9-12 year rotations
- 20 lbs/acre of seed
- 160 lbs/acre of root

- Worth $300 - $400 / pound
Wild Ginseng

- Becoming rare across its range
- Harvest is regulated
  - Permit from the IDNR
  - Harvest season (Sept – October)
  - Reseeding requirements
- ($600 - $1000/lb)
Woods vs. Field Grown

- Rotation length
- Pest issues
- Labor and cost
- Root yield
- Root quality
Seed

- Must be stratified!
- Plant in the fall
  - 1/2 - 1" deep
  - Hand plant
  - Broadcast
  - Machine planter
- 6,500 seeds/ lb.
- $80 - $140/ lb.
Fertilizer

• Test soil every 2-3 years
• Need 1,000 lbs/acre Ca
  – Add 50lbs/1,000 sq. ft
  – Limestone for pH < 4.5
  – Gypsum for pH > 4.5
• Need 95 lbs/acre P
Planting Beds

• Mix organic matter and/or fertilizers
  – 4 - 6’ wide
  – 6 - 9” tall
• Plant seeds
  – 6 - 9” rows
  – 1’ apart
  – Broadcast
• Mulch 1 - 3”
Harvesting

• Loosen soil 8 -12” around root
• Dig by hand with spade or “sang” hoe
• Keep fine root hairs attached
• Follow regulations
Washing

- Rinse don’t soak
- Brush don’t scrub
- Leave “skin” on
- Don’t remove all the soil
Drying

- Slowly dry
- Stable humidity
- Air circulation
- Below 100° F
- Space roots apart
- Remove rotten roots
Drying

- Roots will shrink
- Lose 1/3 green weight
- Should break crisply
- Keep roots intact
Producing Seed

- Harvest ripe berries
- Depulp seed
- Stratify in sand
  - Root cellar
  - Burry in boxes
Production Guides

- ISU Forestry Extension Series F400, F401, F402 & F403
How to find more information

F-400- Ginseng Ecology
F-401- Ginseng Growing
F-402-Ginseng Disease & Pests
F-403- Ginseng Regulations
F-337- Maple Syrup Production