

Welcome! Elderberry Processing Workshop 2024

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ElderBlossom View Orchard and Winery

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ElderBlossom View Winery and Orchard

- Pure elderberry juice, elderflower nectar, wine vinegar, wines, mead
- Indoor, outdoor venue
- Live music

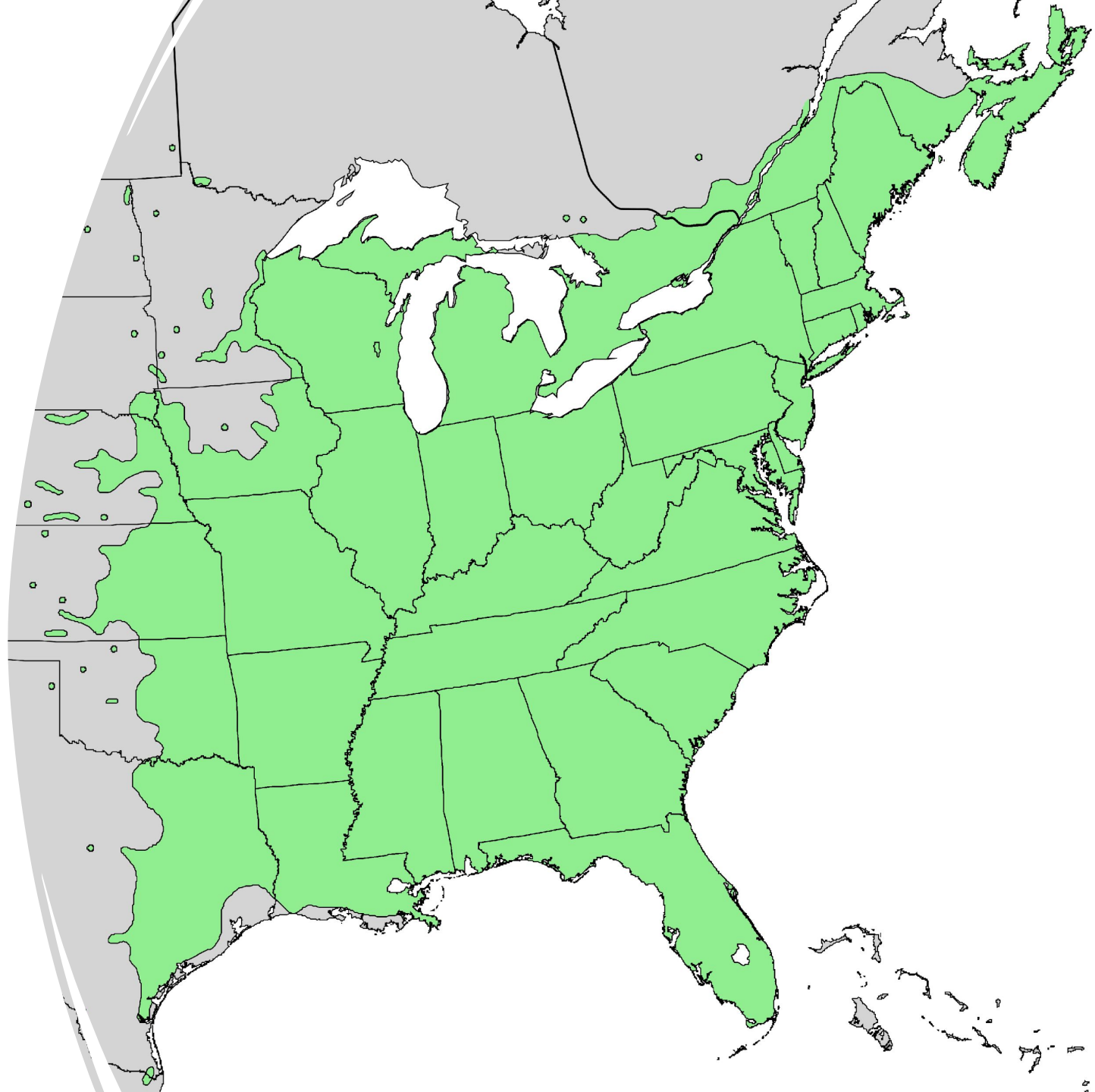


elderblossomview.com



Introduction

- Single to multi-stemmed, woody deciduous shrub
- Native perennial to eastern North America (*Sambucus nigra* subsp *canadensis*)
- Habitats
 - Moist forest edges, low forests, along water sources
 - Disturbed areas, old fields, ditches, meadows
 - Moist, fertile soils that are well to moderately well-drained
 - Full sun to lightly shaded areas
 - Transitional plant



Introduction

- Dense, mat-like root system
- Growth habit
 - Adaptable, fast grower
 - Suckers/Thicket-forming
 - 6-12 ft+ tall
 - Determinant vs indeterminate growth



Historical uses

- Hippocrates, Greek "Father of Medicine" ~ 400 BC
 - Called the elder tree his "medicine chest" for its health benefits and variety of uses
- Indigenous People of North America
 - "Elderberry is one of our most important traditional medicines and we've never stopped using it, says Sage LaPena, Nomtipom and Tunai Wintu ethnobotanist and Medical Herbalist, "When we look at our traditional ecological knowledge, how we use elderberry – which includes all of the parts of the plant: roots, wood, berry, flower – they are all harvested at specific times year."



Historical uses

- Tonics, infusions, decoctions/teas, syrup, jam, rub for meats, sweeten drinks
- Crafts, arrow shafts, dyes, flutes
- **Elderflowers and berries** made into tonics and salves to treat boils and burns; bring down fevers; cold floral tea
- **Leaves** used in steam baths to sweat out colds and headaches; wash or salves for skin conditions
 - **Green/unripe berries, stems, leaves, and bark should not be consumed**
- Traditional ecological knowledge replaced with modern chemical analysis techniques and simplified plant compounds



Interest in health benefits

- Traditionally, elderberry was believed to treat asthma, bronchitis, coughing, fever, headaches, epilepsy, syphilis, rheumatism, toothaches, burns, abrasions, swelling, sore throats, act as a diuretic, and to treat cancer (Charlebois et al., 2010)
- Where is the research?
 - High in antioxidants and antiviral activity
 - Could reduce total duration and severity of upper respiratory symptoms, as compared to a placebo group when taken at the onset of symptoms (Hawkins, Baker, Cherry, & Dunne, 2019)
 - Other potential functions highlighted in literature: stimulating immunity, antioxidant, antitumor, impact on obesity and metabolic dysfunction, antidepressant, and antidiabetic (Mocanu and Amariei, 2022)
 - Elderberry could benefit brain health and treat high blood pressure (Thole et al, 2006)
 - We're still learning!

American elderberry

What we're learning about American elderberry

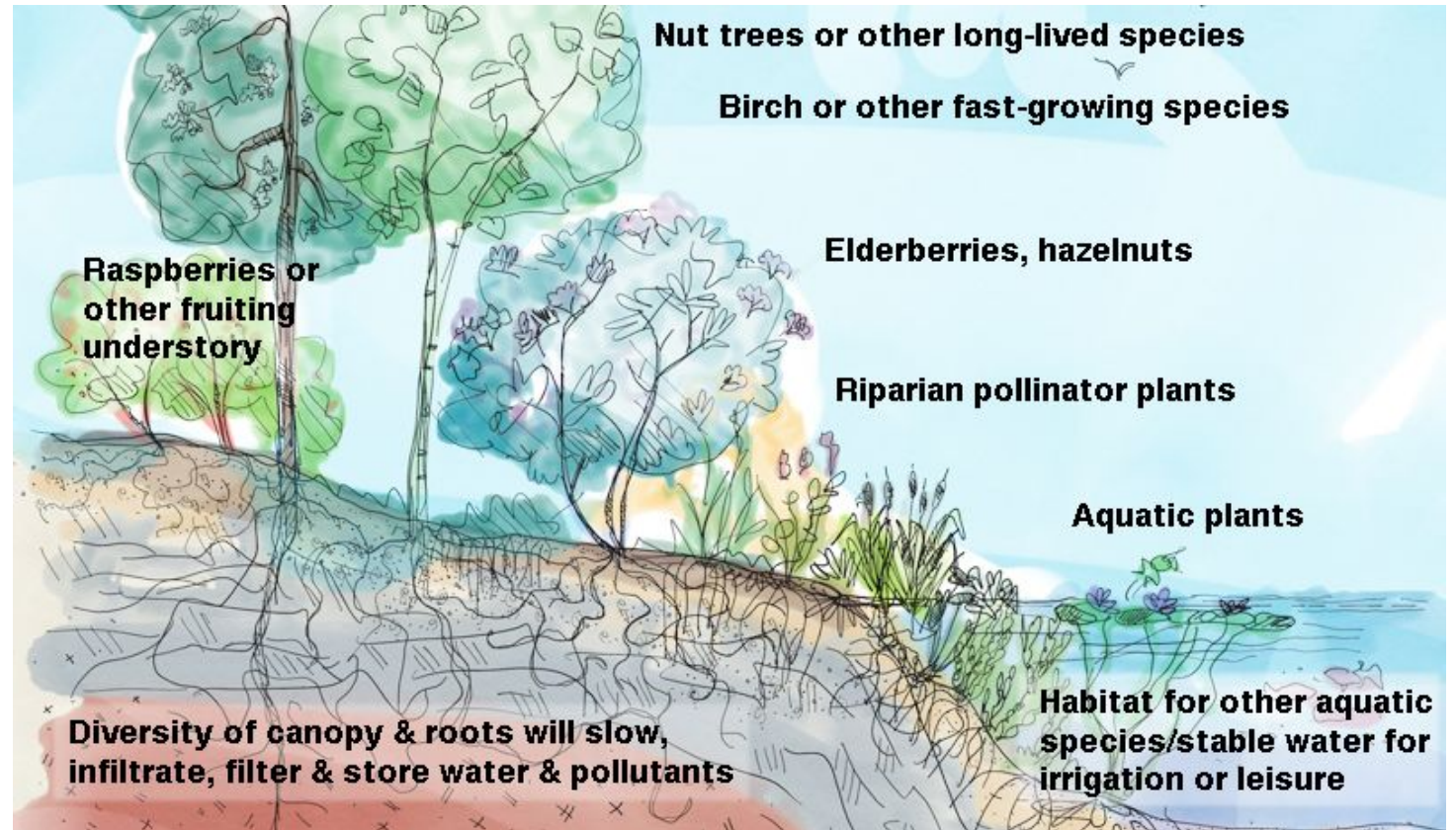
- Elderberry-based brain health dietary supplements...will be evaluated for their effect in slowing or mitigating some age-related declines in mammalian brains, including memory loss and Alzheimer's disease (Advancing American Elderberry research grant, University of Missouri)
- Higher number of anticancer bioactivities in American elderberry (Thomas et al., 2020)
- American elderberry species contains more antioxidants

From River Hills Harvest website....

"Native to the US, *Sambucus canadensis* berries are able to be processed using cooler temperatures than the European native, *Sambucus nigra*. Boiling is not required. American elderberries contain more antioxidants than others across the globe."

Interest in Ecological Restoration

- Natural Resource and Conservation Service (NRCS) -Agroforestry funding pool
- Uses in riparian areas
 - Stabilize, filter/trap, absorb, slow flow
- Pollination services, wildlife habitat, aesthetics
- Most effective when part of a system

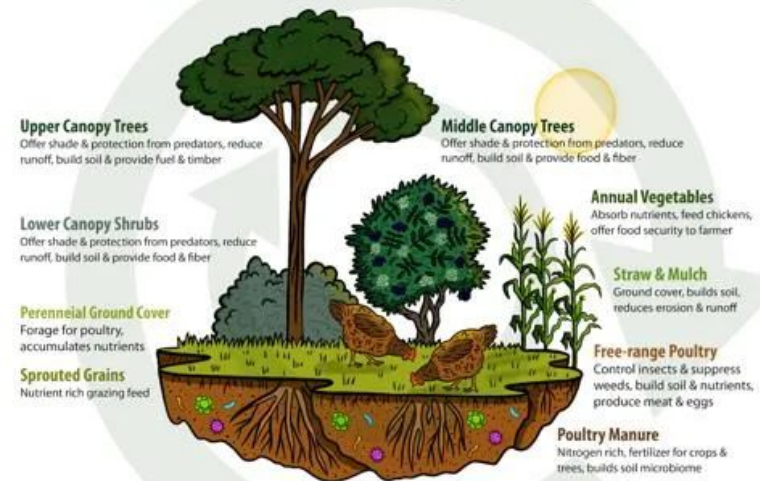


Backyard-scale

- Functional role?
- Along back fence or cluster planting (not complex)
- Functional hedgerow
- Backyard food forest
- Poultry silvopasture system? (most complex)



A Look At The Energy Cycles of Regenerative Agriculture



Site preparation

- Remove all vegetation (grass, weeds, etc)
- Amend soil with compost to...
 - Improve drainage
 - Improve moisture holding capacity
 - Add organic matter to improve soil quality and add nutrients
- Fertilization not necessary at time of planting



Planting elderberry

- Dormant cuttings (Cheapest)
- Rooted cuttings
- Bare root plants
- Container plants

Cultivar selection

- Elderberry is self-fertile but cross-pollination could improve productivity
 - Synchronous flowering
- Select for desirable traits
 - More even ripening
 - Quality of fruit
 - Chemical properties
 - Sugar content
 - Growth habit
 - Size of berries/ high yields
 - Environmental conditions



Bob Gordon

- Number one producer in trials and researchers are confident Bob Gordon is a superior cultivar for the Midwest
- Consistent performer
- Midseason ripening
- Higher brix, and often chosen for the sweetness in the berries; great for wine.
- **Recumbent** ripe berry heads that are more shielded from birds.
- Determinate
 - Grows 6 to 8 ft tall.



Ranch

- This hardy short plant seems to be most tolerant to harsh conditions. The stockiness provides a lower fruiting canopy for those short pickers. Single stemmed. Tends to grow upright and is not bushy.
- Early ripening
- One of the strongest elderberry cultivars, very woody and grows well on less fertile soils/harsher sites.
- Determinate
 - Grows 5 to 6ft tall





Pocahontas

- Fast-growing vigorous cultivar that is extremely prolific, featuring large flower cymes and berry-heads.
- Large umbels with big yields in a hurry. It blooms a bit later than other genotypes, so shorter-season plantings may find that berries may not ripen.
- Late ripening
- Indeterminant
 - Typically grows 12 feet or taller.

Planting elderberry

- Things to consider
 - Site
 - Sunlight
 - Moist, well-drained soil
 - Growth habit
 - Fast and thicket-forming (management)
 - Proximity
 - Other gardens/plants
 - Water source
 - Limiting factors
 - Light and moisture



Management

- Mulching
- Water during dry spells
- Weed management
- Benefits from nitrogen fertilization; phosphorus and potassium later years
- Monitor for pests and disease
 - Spotted wing drosophila
 - Mites
- Prune stems/canes to ground after first few years to maintain vigor, uniform ripening; potential pests (optional)



Harvesting and Storage

- Pick flowers first year to focus energy on building root system
- Reaching full productivity around year 3
- Fruiting head is called "umbel"/cyme
- Harvest once all berries are ripe (uniform, deep purple)
- Elderberries can degrade once picked so keep cool (32-40 F) or freeze if not using immediately after harvest
- Freeze for several months



Thank you!

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Elderberry Processing Demo

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@Chef_lex

