ELDERBERRY
GREAT TASTE W/POTENTIAL HEALTH BENEFITS

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PRIMARY PROPERTIES

- Most commonly known as antiviral herb, which was the subject of early clinical research on colds, flu, coughs and other respiratory issues
- More recently, elderberry’s anti-inflammatory potential has attracted more research grants.
- Direct and indirect anti-inflammatory effects: joints, muscles, brain
- Nutritionally dense, deep berry color with a sweet neutral flavor
- Gland stimulation, digestion, pancreas - hypoglycemia, type 2 diabetes
- Antibacterial qualities
NUTRIENTS

- European S. nigra has 4 different antioxidants
- North American S. canadensis has 7 identified antioxidants
  - Same 4 as S. nigra with 3 additional ones
  - S. n. and S. c. levels of antioxidants considered roughly equal
- Anthocyanins, flavonoids, and other polyphenolics, amino acids
- Anti-inflammatory flavonoids Quercetin & Rutin (glycoside version)
- Relatively high in Vitamins A, C, & B6 - minerals K, Ca, P and Fe (USDA chart)
Hippocrates wrote a book on elderberry’s uses

Proceedings of the First International Symposium on Elderberry
http://www.actahort.org/books/1061/

Held at the University of Missouri, Columbia in June 2013
  - About 53 papers from 17 nations
  - Elderberry cultivation and clinical health research

All parts of the plant, berries and flowers studied

All major researchers and producers present
OF INTEREST

- Ukrainian research on using leaf extracts to repair DNA damaged from radiation like Chernobyl
- Elderflower seems a little more potent in treating allergies
- Anti-inflammatory research supported preventative practices, such as consuming a tablespoon of elderberry juice/day
- Compromised immune systems helped - asthma, allergies, bronchitis, congestion, perhaps some cancers, chemo side-effects, skin problems
- “Elderberry is a potent sedative and helps induce sleep. It helps relax your nerves and muscles and imparts a feeling of well-being.”
  (http://www.home-remedies-for-you.com/articles/Elderberry-juice.html)
Elderberry is best known to the public for fighting flu and colds.

Seems to work on every virus due to its capacity to inhibit or prevent the reproduction of viruses.

Much of early antiviral research used and was funded by Sambucol.

Jerusalem Zoo chimps & prevention against unknown infection.

Israeli and Norwegian studies on those already ill.

Potential use against exotic viruses, pets & animal husbandry.

MEC website as a resource: (http://minnesota-elderberry.coop/health--nutrition/index.html)
HEALING REPAIR

- How antiviral properties strengthen the immune system - the advantage of systemic energy in prevention
- Indirect & direct anti-inflammatory effects may imply similarly active benefits in other biological system balancing.
- High levels of antioxidants promote gum health, circulatory system health, quicker muscle recovery from exercise
- Used to reduce side effects experienced with various treatments
- Secondary health support to other prescribed medical treatments
- “In order to derive maximum elderberry benefits, the best thing is to drink fresh juice of the elderberry fruits.“
  (http://www.home-remedies-for-you.com/articles/Elderberry-juice.html)
INGREDIENT POTENTIAL

- Relative variability of elderberry nutrient, antioxidant, sweetness, acidity, fiber, color profiles by cultivar and location only partly known.
- Large existing market for freeze dried powders, extracts and concentrates - Europe
- Identification of desired ingredients
  - Food & beverage specific raw material: colorant, seed oil and/or antioxidant
  - Medical catalysts and active agents
- Quality control of harvest: field and cultivar, documentation of harvest
  - Different quality grades and pricing linked to customer’s purpose
  - Cultivar selection for defined/desired biochemical qualities
- Elderberry processing by-product marketing: people and animals
NUTRACEUTICAL FOOD

- Anti-inflammatory benefits key to growing year-round consumption
- Elderberry juice is a tasty, colorful, sweet neutral, nutrient-dense flavor easily added to food and beverages: mix @ 2 oz/quart or 1 tbs/glass
- Most US products use European CONCENTRATE (heated for 3 days) vs. cool processed juice (5 min @ 180°F) - taste, nutritional advantages
- Flower & berry cordials, extracts, teas, infusions, jellies, jams & spreads
- Wine, mead, brewed beer & vinegars, liquors, kombucha
- Food/beverage coloring: tasty nutritious fun with a purplish passion!
DEVELOPMENT PARTNERSHIPS

- A growers cooperative can better coordinate with multiple partners
- Quality control and identification, ingredient spec development
- Support & encourage continuing academic research
- Harvest aggregation, sorting and volume commitments
- Cooperation from field to customer to consumer
- Better able to make and maintain make long term supply agreements
- Participate in / distribute to larger markets - national, global