



*Please note: The following presentation summaries from the **First International Symposium on ELDERBERRY** held June 9-14, 2013 and hosted at Stoney Creek Inn, Columbia, MO by the University of Missouri. The first half of each entry quotes directly from the printed presentation abstracts provided by the authors in bold font. My personal evaluation of potential present and future relevance to elderberry growers and consumers of elder fruit and flower products follow each quotation in regular font.*

*Of course, in both cases a large amount of information has been left out due to my editorial objectives of reporting concise statements of key learnings. My selection of what was important represents my own experiential bias without intentional critique of anyone's research. Also, I could not physically attend all presentations; therefore, some presentations will have more commentary due my including information derived from the questions and answers that occurred after each presentation. The full presentations will be publish in a special edition of **Acta Horticulturae**, hopefully by the middle of 2014.*

Exploring the Health Benefits and Economic Opportunities of the Bioactive Phytochemicals – A Overview of Phytochemical Research at the University of Missouri Center for Agroforestry

Chung-Ho Lin, Hsin-Yeh Hsieh, George Stewart, Brian Thomson, Xiaoqin Zou, Nazif Ullah, Che-Min Su, Michael Gold and Shibu Jose

Many of the isolated phytochemicals not have shown strong anti-microbial activities against a wide range of pathogenic bacteria, but also strong inhibitory activities against melanin biosynthesis. Recently, several isolated phytochemicals have been recognized as promising anti-inflammatory, anti-microbial, estrogenic and skin-whitening agents by cosmetic and pharmaceutical industries.

This research expands beyond elderberry to include species like red cedar. Their research identifies significant commercial potential, which justifies further research into the best cost-effective and environmentally friendly bio-production practices. For elderberry and other dark berry growers, this research demonstrates and explores the potential for extracted ingredients made from naturally occurring compounds in the plants' berries, flowers and leaves.

An Industry Perspective on Elderberry

Jan Mills, Artemis International, Inc.

Artemis International, Inc. with a headquarters in Fort Wayne, Indiana, has been a leader in the elderberry market for over 17 years. Artemis supplies elderberry and other phytonutrient-rich dark berry ingredients to food, beverage, and dietary supplement companies while maintaining Field to Function[™] expertise in the berry industry...

What began as primarily a natural colorant market has evolved into one with an increasing focus on tangible health benefits backed by scientific substantiation. Continued health benefit and mechanism-based research is essential to the future of commercial elderberry products as

consumers seek claims of efficacy and points of differentiation across elderberry products...*Sambucus canadensis* has been the variety of choice for many U.S. research institutions in recent years.

This paper supports the conclusion of MEC's feasibility study that longer term, increased elderberry cultivation must be supported by the development of elderberry food coloring, dyes and ingredient components as currently exists in Europe. The dark coloring of elderberry may be used as a substitute for blue, purple and red dyes used in food and beverages that are being phased out of use due to consumer health concerns or regulation.

The potential market category for elderberry ingredients is huge, embracing several domestic and export alternatives, but not currently quantifiable due to small size and lack of documentation. Ingredient alternatives include fresh fruit, de-stemmed and washed, sanitized, frozen fruit packed in containers and freeze-dried powders.