

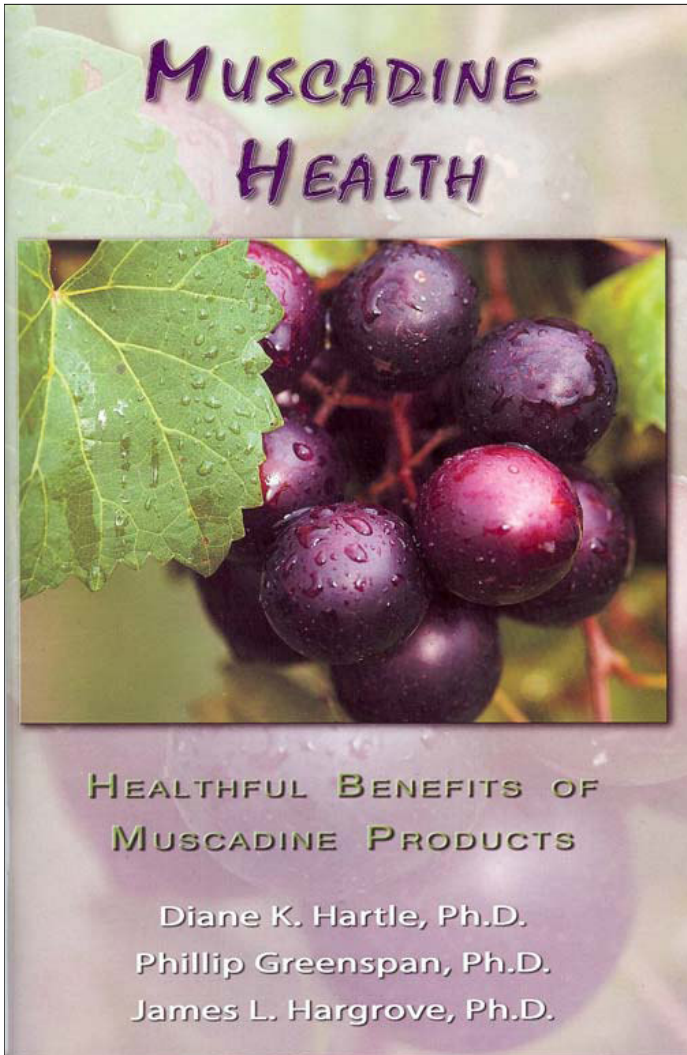
Muscadine Health

This 80-page booklet (\$9 from MAC 800-378-6005) may be the most valuable read you will ever find. It explains and discusses the health implications of the amazing Muscadine grape, the #1 ingredient (of four) in the **Heartland Select** health blend.

Muscadines are an American fruit (endemic to the Southeast US, where the heat and humidity are right) and can properly be termed a berry or a grape. Unlike table wine grapes from America, Europe, South America or elsewhere, Muscadines have a more complex biochemistry.

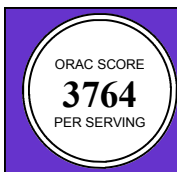
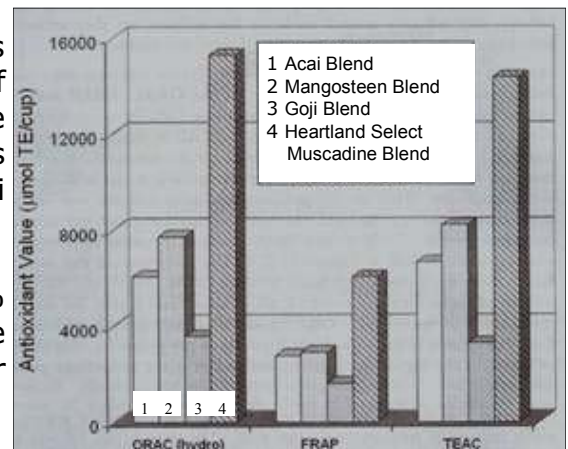
The term “phyto-chemical” describes the almost infinite variety of natural compounds that exist in nature. The plant kingdom is so vast and varied that thousands or even millions of potentially important phytochemicals remain in hiding. Cures for many diseases—including problems associated with aging—lay undiscovered somewhere in the world’s forests, oceans and hedgerows.

Heartland Select gives consumers access to the exciting buffet of phytochemicals that are found in Muscadines and two other grape species that make up the **Superior Heartland Select** blend.



Phytochemical-rich pomace, made from the seeds and skins of grapes, is ingredient number four. The combination of three natural fruits and their pomace has resulted in the world’s **best** health blend value, **Heartland Select**. Heartland’s margin of superiority over Acai, Mangosteen, Noni and Goji blends is dramatic.

Phytochemical drinks are pricey, so why use a 50% to 75% less potent product when **Heartland Select** is roughly the same cost per bottle and so much more potent? The ORAC per serving is right on the label of every bottle →



The standards of comparison: **ORAC** stands for **Oxygen Radical Absorbance Capacity**. This standard for comparing the antioxidant value of foods was developed by the National Institute on Aging, a department of the National Institutes of Health. *For most Americans, an extra daily ORAC intake of 3764 would more than double the fresh fruit and vegetable “intake quotient” of their normal routine.*

The **FRAP** assay also measures the antioxidant potential of biological fluids and represents yet another option for comparative analysis. The Trolox Equivalent Antioxidant Capacity assay (**TEAC**) evaluates antioxidant strength using vitamin E as a standard. In other words, all three systems are measuring the same capabilities, but in different ways.

Interesting Science Articles

Unique Grape Skin Extract Inhibits Prostate Cancer Cell Growth in the Laboratory

<http://www.nih.gov/news/pr/aug2007/nci-31.htm>

Extracted from the on line text ...

"Using a series of human prostate cancer cells, representing different stages of prostate cancer progression, the researchers showed that MSKE (muscadine grape skin extract) significantly inhibits the growth of cancerous, but not normal, prostate cells, primarily by inducing a process called apoptosis, or programmed cell death. Programmed cell death is one of the mechanisms the body uses to rid itself of cells with un-repaired genetic damage before those cells can duplicate themselves."

"The fact that all of the cells studied, which cover the different stages of prostate cancer tumor progression, responded to MSKE suggests that the active compounds in this extract may inhibit tumor development at very early stages."

"The muscadine grape (*Vitis rotundifolia*) is distinct from the more common red grapes used to produce red wines, a major source of resveratrol. The chemical constituents of muscadine grapes differ from most other grape varieties, as they are richer in chemicals called **anthocyanins**. Anthocyanins have strong antioxidant activity and have shown several anti-tumor effects, including inhibition of DNA synthesis in breast cancer cells, of blood vessel growth in some tumors, and of enzymes involved in tumor spread. Muscadine grapes can be found growing wild from Delaware to the Gulf of Mexico and westward from Missouri to Texas."

Berries curb cancer cells - Science Update - Brief Article

http://findarticles.com/p/articles/mi_m3741/is_6_50/ai_88109761?tag=content;coll

Fruits and vegetables contain a wide array of compounds—phytonutrients—reported to have anti-cancer activity in cell cultures. Berries are [especially] rich in antioxidant phytonutrients; so researchers have been probing several berries, including muscadine grapes, for their ability to inhibit growth of cell lines originally cultured from breast and cervical tumors. Preliminary studies show that various extracts from muscadines cut growth of breast cancer and cervical cancer cell lines by more than half. The scientists use solvents and different parts of the fruit—the juice, skin and seeds. They then send samples to Dr. Lyndon Larcom at Clemson University in South Carolina for assays on the cancer cell lines.

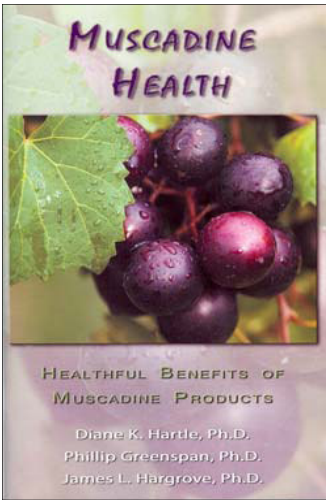
Blueberries and blackberry extracts weren't effective against the two cervical cancer cell lines tested, but they suppressed breast cancer cell growth—each fruit suppressing a different cell line. Muscadine grape extracts suppressed a third breast cancer cell line much more than they suppressed a line of healthy cells from the same donor. These findings deal with suppression of cancer cells in the second stage of development. Researchers are also assaying fruit extracts for their ability to prevent mutations.

From the Brunswick Laboratories website (Brunswick Laboratories, the most respected lab in this field, developed the data that are illustrated on page 1 of this newsletter)

Oxidative stress is the adverse effect oxidants have on physiological function. It has been implicated in the progression of aging and disease, and has been shown to be reduced by antioxidants.

The study of oxidative stress is a core scientific focus at Brunswick Laboratories. Analyzing the correlation between the intake and depletion or losses of antioxidants and actual changes in oxidative stress levels in physiological fluids is a key part of what we do.

Brunswick Laboratories' emphasis on output, or oxidative stress, is essential to our leadership in the advancement of condition-specific health solutions.



Chapters and Major Headings

Muscadines and Muscadine Products

A list of Muscadine Phytochemicals is provided

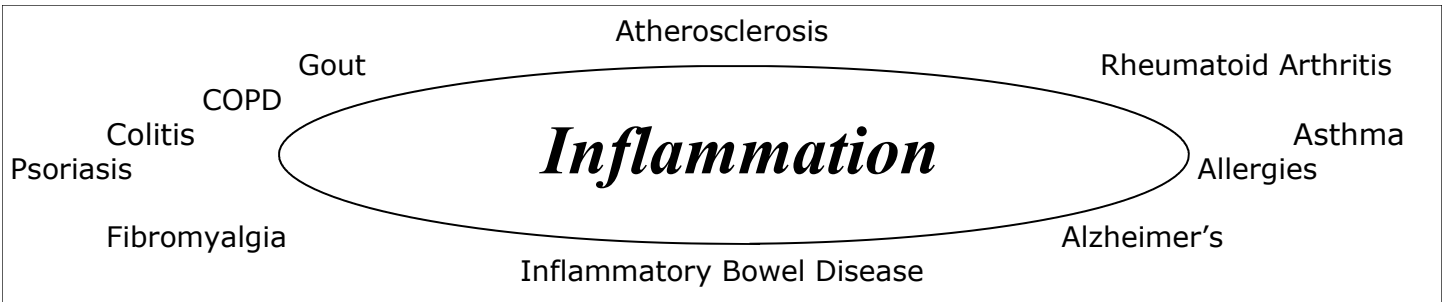
Ellagic Acid	Gallic Acid	Tartaric Acid
Resveratrol	Geraniol	Cyanidin
Piceatannol	Coumaric Acid	Peonidin
Chlorogenic Acid	Kaempferol	Delphinidin
Cinnamic Acid	Myricetin	Petunidin
Epicatechin	Quercetin	Malvidin
Vitamin C	Anthocyanidins	OPCs-Oligomeric
Procyanidins		

Antioxidant Power of Muscadines

Oxidative Stress

Antioxidant Defenses of the Body

Anti-inflammatory Power of Muscadines to “Phyte” Against Inflammatory Diseases

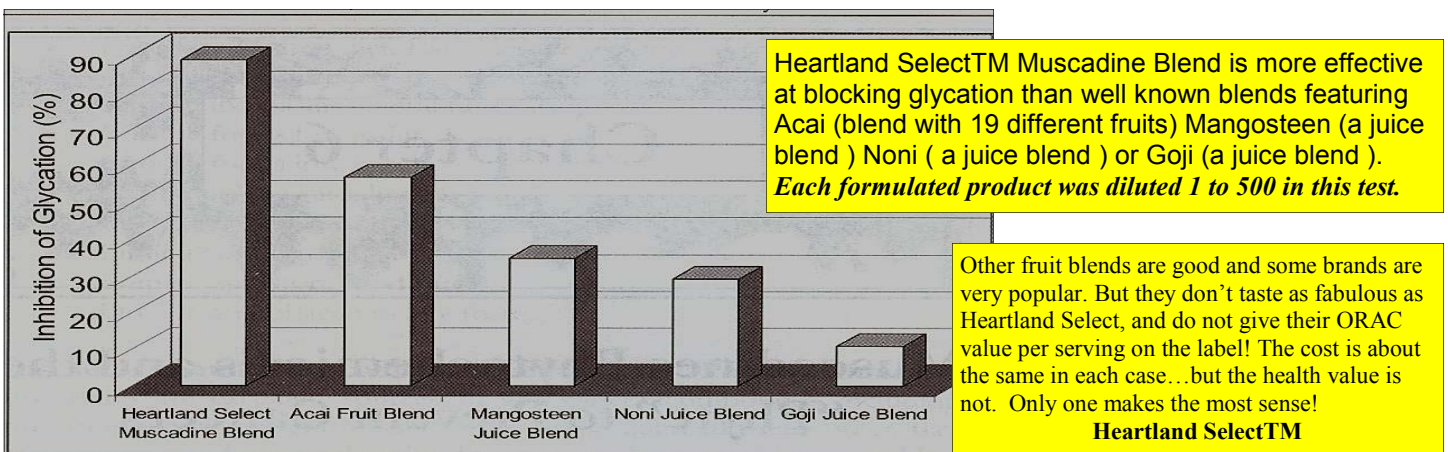


Muscadine Phytochemicals Benefit Heart and Blood Vessel Health

- Reduction of oxidative stress to heart and blood health
- Reduction of inflammation to blood vessels to reduce atherosclerotic plaque formation
- Maintain the dilation mechanisms of blood vessels to keep blood pressure normal
- Protection against inappropriate blood clotting

Health Benefits of Muscadine Phytochemicals in Metabolic Syndrome, Pre-diabetes and Diabetes

- Metabolic Syndrome characteristics – **editor: incredibly important topic and chapter**
- Muscadine phytochemicals and blood glucose control
- Muscadines as power “phyters” against metabolic syndrome
- Muscadines “phyte” metabolic eye damage
- Muscadines “phyte” metabolic diabetic complications
- Muscadine products inhibit AGE protein formations



Muscadines Phytochemicals and the “Phyte” to Prevent Cancers

The National Cancer Institute and other agencies support a diet high in phytochemicals for prevention of various cancers. Recommendations are given.

Muscadines and Longevity

Muscadines as dietary choices Caloric restriction, gene expression and brain aging Berries and leafy greens and brain aging Resveratrol, polyphenols and life extension How to benefit from Muscadine polyphenols Muscadine polyphenolics “phyte” for health Take-home messages about Muscadines and health About genes and health Muscadine phytochemicals affect genes that keep every part of the body healthy

This powerful little book presents 397 bio-medical references. This 80-page booklet (\$9 from MAC 800-378-6005)

***Muscadine Health* is well written, scientifically proven, easy to enjoy, but its scope is vast.**

As an American, I felt a sense of geographical pride when I went to the Web to read some Muscadine history. Many Native Americans used this fruit for food and both the Cherokee and Creek nations used them in medicinal ways. The European explorers and settlers were similarly impressed...

"Grapes of such greatness, yet wild, as France, Spain, nor Italy hath no greater"

...wrote the governor of North Carolina in 1585 in a letter to Sir Walter Raleigh.

The white or bronze variety of muscadine are called Scuppernongs, and here is how their nutritional value is described in traditional terms: Scuppernongs and Muscadines are high in Vitamin C and contain potassium, Vitamin B, and trace minerals; they are naturally low in sodium and free of fat and cholesterol. When measuring, 2 cups of scuppernongs equals 3/4 pound.

Southern good ol' boys have been eating scuppernongs and muscadines—and drinking wine made from the berries—since before the Civil War, but the more sophisticated qualities of this food were mostly unknown until the last ten years. The authors of *Muscadine Health*, who also work as consultants to EcoQuest and Heartland, are the world's leading experts in this bonanza of Twenty-first Century science.

A preview on Metabolic Syndrome, one of the most important concepts discussed in this book:

“Persons with metabolic syndrome have a marked risk of developing overt diabetes, heart disease, arteriosclerosis and stroke. Metabolic syndrome is in epidemic proportions in all populations that are wealthy enough to eat a modern calorific diet while maintaining relatively sedentary work and life styles. Europeans have decided to find a solution with the LIPGENE research project (references given). The goal is to develop a strategy to alter dietary patterns to prevent metabolic syndrome. European estimates suggest that 10-20% of current middle-aged and elderly men and 10-25% of middle-aged to elderly women have metabolic syndrome. US statistics are much higher, perhaps twice this rate. Fortunately, this epidemic is a reversible tragedy in our opinion.”

***Muscadine Health* (the book) and *Heartland Select* (delicious grape juice health product that comes in a wine bottle) can change your life. Contact the person who shared this newsletter with you and arrange to try a 25 - ounce bottle (12 servings) or order a case (4 bottles)**