

## BLUEBERRIES



### **New USDA Study Shows Blueberries` Anti-Aging Potential**

BAR HARBOR, Maine, Sept. 14 (Wild Blueberry Association of North America) -- According to a USDA study to be published in the September 15 issue of the *Journal of Neuroscience*, a diet rich in blueberry extract reversed some loss of balance and coordination, and improved short-term memory in aging rats. Ranked #1 among fresh or frozen fruits and vegetables in antioxidant power, blueberries are being studied more closely by researchers for their documented anti-aging potential. This particular USDA study is the first to actually demonstrate a reversal in dysfunctions of behavior, going farther than earlier studies which linked high-antioxidant fruits and vegetables to prevention of function loss only.

"This is a research breakthrough," says John Sauve, Executive Director of the Wild Blueberry Association of North America (WBANA) in reaction to the release of the USDA study. "With the graying of America being one of the most significant health discussions today, this type of research goes a long way toward helping us understand the importance of fruits and vegetables in the anti-aging equation," says Sauve. "With consumer interest focused on eating foods that help prevent disease, blueberries are now in the spotlight as a 'good for you food,'" added Sauve. "For great taste, antioxidant power, and potential anti-aging benefits, there's no better choice than a daily dose of Wild Blueberries. I expect that the demand for frozen Wild Blueberries and Wild Blueberry products will increase in supermarkets across the country."

### **Anti-Aging Properties Explored**

Dr. James Joseph, Chief of the neuroscience laboratory at the Jean Mayer USDA Human Nutrition Center (HNRCA) on Aging at Tufts University, and Barbara Shukitt-Hale, a psychologist with the HNRCA, fed blueberry, strawberry or spinach extract to 19 month-old rats, age-equivalent to 65 or 70 year-old humans. According to the study, all three extracts improved short-term memory, but only blueberry extract improved balance and coordination.

In the Tufts trials, Dr. Joseph and his colleagues fed aged rats a blueberry extract for two months and saw improved navigation skills in mazes as well as improvements in balance, coordination and running speed. According to Joseph, as rats age, they typically forget how to maneuver through mazes that they previously had learned to navigate. "I'm struck by the changes we saw in motor behavior in the rats fed the blueberry diet. This is the first study that demonstrates a significant reversal in coordination and balance -- some of the first things to go as you age," says Joseph.

According to Dr. Joseph, the blueberry has emerged as a very powerful food in the aging battle. "I make a point of tossing a handful of blueberries into a protein drink in the morning to start the day off right," says Joseph. "Given the possibility that blueberries may reverse short-term memory loss and forestall other effects of aging, their potential may be very great," added Joseph.

Ongoing research will focus on identifying the specific compounds responsible for blueberries' beneficial effects. While the rats ate blueberry extract, researchers are interested in finding out more about the whole fruit which may contain even more benefits. "We're excited about what we may discover," says Shukitt-Hale. "From what we've seen with blueberries so far, they appear to be very powerful and a key component of a healthy diet."

### **Nature's Antioxidant Powerhouse**

Studies conducted by Ronald L. Prior, Ph.D, at the Jean Mayer USDA Human Nutrition Center on Aging at Tufts University, ranked blueberries number one in antioxidant activity when compared with 40 other commercially available fruits and vegetables. (Source: *Journal of Agriculture and Food Chemistry*, 44:701-705; 3426-3343, 1996; 46:2686-2693, 1998)

Antioxidants are natural substances found in fruits and vegetables which neutralize free radicals -- unstable oxygen molecules associated with cancer, heart disease and the effects of aging.

Scientists attribute these benefits to anthocyanins and other natural compounds (phytochemicals) found in Wild Blueberries. Anthocyanins (from two Greek words meaning "plant" and "blue") are responsible for the intense blue and red pigments of fruits like Wild Blueberries.

"One-half cup of blueberries delivers as much antioxidant power as five servings of other fruits and vegetables -- such as peas, carrots, apples, squash and broccoli," says Dr. Prior. "While variety is still the key to a healthy diet, I'm eating blueberries regularly."

### **Nature's Tastiest Way To Get Your Antioxidants**

Wild Blueberries, which are commercially harvested only in Maine and Eastern Canada, are available year-round. According to WBANA's Sauve, one-half cup of Wild Blueberries equals one serving under the 5-A-Day guidelines. "For great taste and convenience, we encourage consumers to choose frozen Wild Blueberries to get their Daily Dose of Blue, and help meet the 5-A-Day goal for healthy eating," says Sauve. With the U.S. Food and Drug Administration finding frozen fruit equal to, or, in some cases, surpassing fresh fruit from a health and nutrition standpoint, WBANA anticipates the retail frozen fruit business to represent a growth opportunity for the industry.

*WBANA is an international trade association of growers and processors of Wild Blueberries from Maine and Canada.*

SOURCE Wild Blueberry Association of North America

## THE ENVIRONMENT

### **THERE IS NO BERRY LIKE THE BLUEBERRY**

Stuart Lieberman, Esq., Stuart Lieberman.

Don't cry the blues, eat them. At least that is what blueberry growers are hoping you will do. And, quite possibly, we should all heed their advise. For it appears that blueberries may have some very nutritional and beneficial properties. They have been talking about this for the past few years and I thought I would summarize what people are saying for you.

First, blueberries may help keep blood pressure in check. Finland's largest dairy group, Valio, recently began marketing a blueberry milk product called "Evolus," which they claim is the first blood-pressure lowering food product in Europe.

According to Valio, the blue milk and has been the subject of two independent studies, including one study by the Finnish National Public Health Institute.

Test subjects who had slightly elevated blood pressure were given two doses of Evolus for eight weeks. According to the company, blood pressure was measured weekly and both diastolic and systolic blood pressure in those who consumed the product fell further than the placebo groups. Here's to blue milk (but will American kids drink blue milk?)

Second, several researchers from various countries have come to believe that blueberries help protect cells from cell damage and protect our nervous systems. Recent published studies have found that animals fed a blueberry extract diet showed fewer age-related motor changes and outperformed their non-blueberry consuming peers on memory tests. The thought is that blueberries and other foods containing antioxidants may act to protect the body against damage from "oxidative stress," one of several biological processes associated with aging and neurological diseases.

Third, research on the health benefits of blueberries has also been conducted in Italy, France, Spain, Korea, U.S.A., and New Zealand. One recent Japanese study dealt specifically with the effects of blueberries on eyesight. The study took 26 people and divided them into two groups. One group ingested blueberry extract twice a day for 28 days; the other consumed a placebo. Using a variety of approaches to test vision enhancement, the results reportedly indicated that the group consuming the blueberry extract realized measurable vision gains.

Blueberry extract reportedly had a positive effect on tired eyes more than on any other symptom and there were no reported side effects. The study concluded that blueberry extract wards off certain eyesight problems but does not have much of an effect on cataracts or already weak eyes. More research is needed, but there may be promise.

Apparently, the same thing that makes blueberries blue, a pigment called anthocyanin, makes them an effective antioxidant. Antioxidants neutralize the effects of "free radicals," which are unstable compound molecules that can attack human cells and damage their DNA. So eating blueberries may help offset the effects of free radicals, thereby improving our health. At least, that is the theory.

There is a lot of information about the reported health benefits associated with blueberries on the internet. I personally

have no way of knowing what is true and what is not, and obviously you should talk with your doctor about health concerns that you may have.

Even to the most cynical minded person, however, blueberries seem to show real promise. Who would have ever guessed?

### **Blueberries Reverse Certain Aging Characteristics**

Forget Viagra. Forget red wine. Anyone seeking to really feel young again should try blueberries, research on rats suggests. Old rats fed the equivalent of a cup of blueberries a day not only were more coordinated, but were smarter than other old rats. Researchers are now working to find out just what it is in blueberries that repairs the damage ageing does to the brain. In the meantime, they are eating blueberries themselves.

Researchers found that rats fed spinach and strawberries learned better than rats on a standard diet. Then they threw a blueberry extract into the diet. The rats who got the supplement not only learned faster than other rats, but their motor skills improved.

There were a lot of changes in neuronal communication ó the ability of one neuron to communicate with one another, but what struck the researchers was the ability to change motor behavior. There is virtually nothing out there that can change motor behavior in ageing. But the blueberries did.

The rats were 19 months old, they are the equivalent of 60 to 65 years of age and the researchers feed them for two months so they're up to 70-75. The blueberry fed rats did better on standard rat tests, like making them swim in a water maze, or find an underwater platform in murky water. But they also did better on tests involving a spinning rod or an inclined rod ó good tests of coordination.

Young rats six months old could stay on a rod an average of 14 seconds. Old rats fell off after six seconds, but the blueberry-supplemented old rats could stay on for 10. The blueberries did not make the rats young again, but did improve their skills considerably. When the rats' brains were examined, the brain cells of the rats that got the blueberries communicated better.

The researchers are doing tests to see what compounds in the blueberries are responsible for the effects. Other scientists have found that the components that give fruits and vegetables their color such as the lycopene that makes tomatoes red are associated with health-giving effects. One of things they might be doing is to protect against oxidative stress. Oxidation occurs all the time in the body and is cell damage created by charged particles known as free radicals. They also may reduce inflammation.

Fruits and vegetables are loaded with antioxidants, which range from the resveratrol found in red wine, the anthocyanins that make strawberries red and blueberries blue, and the vitamins A, C and E. Diets rich in fruits and vegetables have been shown to reduce the risk of heart disease and cancer. The rats ate supplements made from blueberry juice, but the researchers think the whole fruit may confer even more benefits. You can't overdose on blueberries.

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Dr. Mercola's Comment:

I find it amazing that these benefits were observed in rats that were fed fruit juice. Blueberries are low in sugar so their juice would not likely stimulate severe insulin swings. However, the researchers clearly understood that the entire whole blueberry would be more beneficial. Most will know of the benefits of grape seed extract for its powerful antioxidant action.

Well, the blueberry also has similar proanthocyanidins that most likely provide similar, if not even more profound benefits. The European blueberry, bilberry, is one of the most potent substances known to prevent and even reverse the most common cause of blindness, macular degeneration.

Unfortunately, blueberries are hard to grow, as they require a very acid soil. I am in my second year of trying to grow some and I have only been able to grow three while about 25 plants have died probably as a result of adding too much acid to the soil. Eventually, I will get it right so I will have a huge crop of organic blueberries in my back yard. In the meantime, I will be purchasing frozen whole blueberries on a regular basis, not only for their taste but also for their amazing health benefits.