

A still life composition of chocolate ingredients. In the center, a wooden mortar is filled with cacao beans. To the left, a pile of cocoa powder is visible. In the foreground, several pieces of dark chocolate are scattered. The background is dark, and the lighting is warm, highlighting the textures of the ingredients.

NOT ALL CHOCOLATE IS CREATED EQUAL

by Beth Douglass Silcox



Anyone who has peeled open the golden wrapper of a chocolate bar, sipped a delicious and frothy cup of hot cocoa or dipped sponge cake and strawberries into a vat of dark-chocolate fondue clearly understands why humans developed a love affair with everything chocolate.

Where would the Easter bunny be today without his chocolaty visage or crème-filled eggs? Young love might never be expressed without the traditional heart-shaped, chocolate sampler gifted on Valentine's Day. So enamored are Americans with chocolate, we each consume nearly 12 pounds of it annually. But few of us realize the intricacies involved with getting that fix of chocolate goodness.

"Life is like a box of chocolates—you never know what you're going to get," said Tom Hanks' character Forrest Gump in the 1994 Paramount movie of the same name. Gump's simplistic yet poignant analogy referred to the sugary surprise within each hand-dipped candy inside that sampler. But as any chocolate aficionado knows, the same holds true for the chocolate itself. Not all chocolate is created equal.

ANCIENT CHOCOLATE

The ancient Maya discovered what we now call cacao beans within the fruit of the cacao tree thousands of years ago. They used the beans medicinally in a blended drink of fermented and roasted cocoa paste, water, chili peppers and cornmeal, among other ingredients. The bitter beverage was revered for its nourishing and restorative qualities. Highly valued and popular, cacao not only became a widely traded commodity for the Maya, but also a preferred method of payment for another Mesoamerican tribe, the Aztec. Eventually, the Aztec word, *xocolatl*—meaning bitter water—transformed into the European word *xocolate* and later into the modern English word *chocolate*.

When European explorers introduced cacao to the world at large in the 1500s, chocolate became a delicacy exclusive to European aristocracy. It didn't find a mainstream audience until mass-produced candies appeared in the 19th century. Since then, chocolate has been sweetened, spiced, melted, sprinkled, shaved, chopped and molded into almost every conceivable shape.

But by all accounts, today's chocolate bears little resemblance to the bitter health tonic the Maya drank. In an effort to minimize chocolate's bitter taste, chocolatiers added refined white sugar and milk fats. Later, hydrogenated oils were folded into chocolate's mix, as were the modern manufacturing processes of fermentation and



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alkalization. “Modern chocolate manufacturers created a product that was more palatable but in the process were destroying what made it healthy,” says Andrew Brooks, Founder and Executive Vice President of MXI Corp, which manufactures the Healthy Chocolate, Xoçai™.

ANTIOXIDANT RICH

Modern scientific studies prove what the ancient Maya knew thousands of years ago. Pure cacao powder is brimming with healthful potential. It is loaded with phytonutrients, which in turn makes cacao powder the highest-rated antioxidant food source—much



greater than red wine or green tea. Human beings benefit from antioxidants’ ability to scavenge and rid our bodies of harmful free radicals, which scientists believe advance disease and accelerate the aging process.

“The body can obtain antioxidants only from eating them in foods or supplements,” says Dr. Steve Warren, Foundation for Flavonoid Research president and nutritional expert. “However, many artificially produced supplements have not been shown to be effective, so it is important to obtain antioxidants from the foods we eat.”

Antioxidants are measured using the oxygen radical absorbance capacity or ORAC scale. The United States Department of Agriculture (USDA) recommends adults ingest a minimum of between 3,000 and 5,000 ORAC units daily, but some estimates indicate fewer than 10 percent of Americans consume an adequate amount of antioxidants each day.

When it comes to choosing antioxidant-rich foods, Dr. Warren says, “Darker is better.” Dark fruits like blueberries and açai berries are loaded with antioxidants, as are green, leafy vegetables like spinach. It may come as no surprise then that dark chocolate delivers an antioxidant punch like few other foods. The Chocolate Manufacturers Association says dark chocolate contains eight times the number of polyphenol antioxidants found in strawberries.

More than two-thirds of polyphenol antioxidants are classified as flavonoids, which are also referred to as bioflavonoids or tannins. Flavonoids give vegetables, fruits, grains, leaves, flowers and bark their color and protect plants from disease, UV rays and predators. Numerous flavonoids exist, each providing health benefits to not only the plant from which it is derived, but also to the human who consumes it. Scientific studies show the potential of flavonoids to reduce inflammation, protect the body from cancer, reduce allergic reactions, lower blood pressure, improve cognitive function and boost the immune system.

LOCATION, LOCATION, LOCATION

Cacao was first cultivated in South America, but today is primarily a West African crop. The harsh, West African environment of the Ivory Coast, according to MXI Corp, produces the highest ORAC value cacao available today. On average, a cacao tree’s shiny leaves reach 20 feet to the sky. Some 6,000 pink flowers bloom, but just 30 of them bear the yellow or reddish-brown, football-shaped pod that contains cacao beans.

Resembling almonds, the purple or off-white cacao beans have a high fat content, so they are often used in medications, cosmetics





PROCESSING: LESS IS MORE

Purchasing cacao from small, family farms some 18 to 24 months in advance of production needs helps reduce many of the uncertainties of manufacturing Healthy Chocolate. It ensures MXI Corp of a stable cacao crop that's not subject to the pesticides or hybridization that can adversely affect the plants' antioxidant levels.

"It's important to remember that what makes chocolate healthy is the chocolate itself; that is, the pure cocoa that comes from the bean of the cacao plant," Dr. Warren says. A 2005 study by Agricultural Research Service scientists found the total antioxidant capacity of natural cacao to be the highest among six types of chocolate products, including alkalized processed cocoa powders and milk chocolates.

According to Dr. Warren, chocolate products containing upward of 70 percent pure cocoa powder contain the highest antioxidant levels. Bitter is better when it comes to the health

and soaps. Pulverized cacao bean residue is used in producing pure cocoa powder for flavorings, beverages and chocolate.

Not all cacao is created equal. The fertility and temperature of the soil in which the cacao is rooted and the processing it experiences before and during manufacturing potentially affect the flavor and antioxidant levels of any chocolate created from the beans. "Because antioxidants are in the plant to protect it from the environment where it is cultivated, Ivory Coast cacao has elevated antioxidant levels," Andrew says. "When we consume the plants with those natural phytonutrients, we get those same benefits."

The Ivory Coast is among the world's leading producers of cacao and the crop comprises 40 percent of the country's export earnings annually. But, as Andrew says, "Cacao doesn't have a squeaky-clean background, and unfortunately some multinational companies continue to exploit the people of this region." The largely agrarian economy of the Ivory Coast has fallen victim to politicized cacao contracts, government corruption, natural disasters, and environmental and labor issues. That's why MXI Corp contracts with small, family-owned farms (free from commercial exploitation) in the Ivory Coast for the purchase of cacao for their Xoçai™ products.

benefits of chocolate, and following the media release of scientific studies the American public's tastes began changing. Consumption of dark chocolate rose 43 percent last year. "With so many studies now on the health benefits of dark chocolate, everybody is talking about dark chocolate," Andrew says. "People are now looking toward dark chocolate as the accepted flavor of chocolate."

When choosing dark chocolates, Dr. Warren recommends a product that has not been alkalized, because this process can nullify the beneficial antioxidants in cacao. Because excessive heat of about 100 degrees Fahrenheit can also damage antioxidants levels, look for a chocolate that has been dried and cold-pressed. Read the label. Ingredients should include at least 70 percent pure cacao, cacao butter and natural sweeteners like raw cane sugar. Avoid products made with milk fats, hydrogenated oils or refined sugar.

Attention to processing practices is of utmost importance when selecting a dark chocolate for its health benefits. "You could put two chocolate bars side by side and they may have the same amount of cacao," Andrew says, "but not the same antioxidant values because the manufacturer processed the antioxidant benefit out of the cacao long before it became chocolate." **SFH**