The History of Chocolate

Table of Contents

Chocolate Through the Years

The story of chocolate, as far back as we know it, begins with the discovery of America. Until 1492, the Old World knew nothing at all about the delicious and stimulating flavor that was to become the favorite of millions.

The Court of King Ferdinand and Queen Isabella got its first look at the principal ingredient of chocolate when Columbus returned in triumph from America and laid before the Spanish throne a treasure trove of many strange and wonderful things. Among these were a few dark brown beans that looked like almonds and seemed most unpromising. They were cocoa beans, today's source of all our chocolate and cocoa.

The King and Queen never dreamed how important cocoa beans could be, and it remained for Hernando Cortez, the great Spanish explorer, to grasp the commercial possibilities of the New World offerings.

Food of the Gods

During his conquest of Mexico, Cortez found the Aztec Indians using cocoa beans in the preparation of the royal drink of the realm, "chocolatl," meaning warm liquid. In 1519, Emperor Montezuma, who reportedly drank 50 or more portions daily, served chocolatl to his Spanish guests in great golden goblets, treating it like a food for the gods.

For all its regal importance, however, Montezuma's chocolatl was very bitter, and the Spaniards did not find it to their taste. To make the concoction more agreeable to Europeans, Cortez and his countrymen conceived the idea of sweetening it with cane sugar.

While they took chocolatl back to Spain, the idea found favor and the drink underwent several more changes with newly discovered spices, such as cinnamon and vanilla. Ultimately, someone decided the drink would taste better if served hot.

The new drink quickly won friends, especially among the Spanish aristocracy. Spain wisely proceeded to plant cacao in its overseas colonies, which gave birth to a very profitable business. Remarkably enough, the Spanish succeeded in keeping the art of the cocoa industry a secret from the rest of Europe for nearly a hundred years.

Chocolate Spreads to Europe

Spanish monks, who had been consigned to process the cocoa beans, finally let the secret out. It did not take long before chocolate was acclaimed throughout Europe as a delicious, health-giving food. For a while it reigned as the drink at the fashionable Court of France. Chocolate drinking spread across the Channel to Great Britain, and in 1657 the first of many famous English Chocolate Houses appeared.

The hand methods of manufacture used by small shops gave way in time to the mass production of chocolate. The transition was hastened by the advent of a perfected steam engine, which mechanized the cocoa grinding process. By 1730, chocolate had dropped in price from three dollars or more per pound to within financial reach of all. The invention of the cocoa press in 1828 reduced the prices even further and helped to improve the quality of the beverage by squeezing out part of the cocoa butter, the fat that occurs naturally in cocoa beans. From then on, drinking chocolate had more of the smooth consistency and the pleasing flavor it has today.

The 19th Century marked two more revolutionary developments in the history of chocolate. In 1847, an English company introduced solid "eating chocolate" through the development of fondant chocolate, a smooth and velvety variety that has almost completely replaced the old coarse grained chocolate which formerly dominated the world market. The second development occurred in 1876 in Vevey, Switzerland, when Daniel Peter devised a way of adding milk to the chocolate, creating the product we enjoy today known as milk chocolate.

Chocolate Comes to America

In the United States of America, the production of chocolate proceeded at a faster pace than anywhere else in the world. It was in pre-Revolutionary New England-1765, to be exact-that the first chocolate factory was established in this country.
Chocolate has gained so much importance since that time, that any interruption in its supply would be keenly felt.
During World War II, the U.S. government recognized chocolate's role in the nourishment and group spirit of the Allied Armed Forces, so much so that it allocated valuable shipping space for the importation of cocoa beans. Many soldiers were thankful for the pocket chocolate bars which gave them the strength to carry on until more food rations could be obtained. Today, the U.S. Army D-rations include three 4-ounce chocolate bars. Chocolate has even been taken into space as part of the diet of U.S. astronauts.

Growing the Cocoa Bean

Cocoa beans are the product of the cacao tree. The origin of the cacao tree is in dispute. Some say it originated in the Amazon basin of Brazil, others place it in the Orinoco Valley of Venezuela, while still others contend that it is native to Central America.
Wherever its first home, we know the cacao tree is strictly a tropical plant thriving only in hot, rainy climates. Thus, its cultivation is confined to lands not more than 20 degrees north or south of the equator.

The Need for Shelter

The cacao tree is very delicate and sensitive. It needs protection from wind and requires a fair amount of shade under most conditions. This is true especially in its first two to four years of growth.
A newly planted cacao seedling is often sheltered by a different type of tree. It is normal to plant food crops for shade such as banana, plantain, coconuts or cocoyams. Rubber trees and forest trees are also used for shade. Once established, however, cacao trees can grow in full sun light, provided there are fertile soil conditions and intensive husbandry. Cacao plantations (trees under cultivation), and estates, usually in valleys or coastal plains, must have evenly distributed rainfall and rich, well drained soil.
As a general rule, cacao trees get their start in a nursery bed where seeds from high yielding trees are planted in fiber baskets or plastic bags. The seedlings grow so fast that in a few months they are ready for transplanting, container and all.

The First Fruit

With pruning and careful cultivation, the trees of most strains will begin bearing fruit in the fifth year. With extreme care, some strains can be induced to yield good crops in the third and fourth years.
Everything about the tree is just as colorful as its history. An evergreen, the cacao tree has large glossy leaves that are red when young and green when mature. Overlays of clinging moss and colorful lichens are often found on the bark of the trunk, and in some areas beautiful small orchids grow on its branches. The tree sprouts thousands of tiny waxy pink or white five-pedaled blossoms that cluster together on the trunk and older branches. But, only three to 10 percent will go on to mature into full fruit.
The fruit, which will eventually be converted into the world's chocolate and cocoa, has green or sometimes maroon colored pods on the trunk of the tree and its main branches. Shaped somewhat like an elongated melon tapered at both ends, these pods often ripen into a golden color or sometimes take on a scarlet hue with multicolored flecks.
At its maturity, the cultivated tree measures from 15 to 25 feet tall, though the tree in its wild state may reach 60 feet or more.
The potential age of a tree is open to speculation. There are individual trees known to be over 200 years of age, but no one has determined the real life span of the species.

However, in 25 years the economic usefulness of a tree may be considered at an end, and it often becomes desirable to replant with younger trees.

Varieties of Cacao

While the cacao tree bears fruit (or pods) all year round, harvesting is generally seasonal. The pods come in a variety of types since cacao trees cross-pollinate freely. These types can be reduced to three classifications: Criollo, the prince of cacaos, is a soft thin-skinned pod, with a light color and a unique, pleasant aroma. Forastero, a more plentiful type, is easier to cultivate and has a thick-walled pod and a pungent aroma. Trinitario, which is believed to be a natural cross from strains of the other two types, has a great variety of characteristics but generally possesses good, aromatic flavor; and these trees are particularly suitable for cultivation.

In the Western Hemisphere, strange as it may seem, plantations composed of just one species of cocoa beans are uncommon. Even single trees with all the characteristics of a specific type are rare. Uniformity exists only where cacao plantations have been developed from the rooted branch cuttings of single mother trees.

In recent years, cacao growers have turned increasingly to hybridization as a means of improving the quality of the bean and making it more disease resistant. Scientists using state-of-the-art biotechnology techniques are also trying to improve the quality of cacao and its resistance to disease.

Handling the Harvest

The job of picking ripe cacao pods is not an easy one. The tree is so frail and its roots are so shallow that workmen cannot risk injuring it by climbing to reach the pods on the higher branches.

The planter sends his tumbadores, or pickers, into the fields with long handled, mitten-shaped steel knives that can reach the highest pods and snip them without wounding the soft bark of the tree. Machetes are used for the pods growing within reach on the lower trunk.

Where Experience Counts

It requires training and experience to know by appearance which fruit is ripe and ready to be cut. Ripe pods are found on trees at all times since the growing season in the tropics, with its evenly distributed rainfall, is continuous.

For most localities there is a main harvest lasting several months and a mid-crop harvest lasting several more months. Climatic differences cause wide variations in harvest times with frequent fluctuations from year to year even within the same location.

What Happens after Picking

Gathers follow the harvesters who have removed the ripe pods from the trees. The pods are collected in baskets and transported to the edge of a field where the pod breaking operation begins. One or two lengthwise blows from a well-wielded machete is usually enough to split open the woody shells. A good breaker can open 500 pods an hour.

A great deal of patience is required to complete harvesting. Anywhere from 20 to 50 cream-colored beans are scooped from a typical pod and the husk and inner membrane are discarded. Dried beans from an average pod weigh less than two ounces, and approximately 400 beans are required to make one pound of chocolate.

The beans are still many steps away from the familiar finished product. Exposure to air quickly changes the cream-colored beans to a lavender or purple. They do not look like the finished chocolate nor do they have the well-known fragrance of chocolate at this time.

Preparing the Crop for Shipment

The cocoa beans or seeds that are removed from the pods are put into boxes or thrown on heaps and covered. Around the beans is a layer of pulp that starts to heat up and

ferment. Fermentation lasts from three to nine days and serves to remove the raw bitter taste of cocoa and to develop precursors and components that are characteristic of chocolate flavor.
Fermenting is a simple "yeasting" process in which the sugars contained in the beans are converted to acid, primarily lactic acid and acetic acid.
The process generates temperatures as high as 125 degrees Fahrenheit, which kill the germ of the bean and activate existing enzymes in the beans to form compounds that produce the chocolate flavor when the beans are roasted. The result is a fully developed bean with a rich brown color, a sign that the cocoa is now ready for drying.

Drying is Important

Like any moisture-filled fruit, the beans must be dried if they are to keep. In some countries, drying is accomplished simply by laying the beans on trays or bamboo matting and leaving them to bask in the sun. When moist climate conditions interfere with sun-drying, artificial methods are used. For example, the beans can be carried indoors and dried by hot-air pipes.
With favorable weather the drying process usually takes several days. In this interval, farmers turn the beans frequently and use the opportunity to pick them over for foreign matter and flat, broken or germinated beans. During drying, beans lose nearly all their moisture and more than half their weight.
When the beans are dried, they are prepared for shipping in 130 to 200 pound sacks. They are seldom stored except at shipping centers, where they await inspection by buyers.

Marketing for export

Buyers sample the quality of a crop by cutting open a number of beans to see that they are properly fermented. Purple centers indicate incomplete fermentation.
If the prevailing crop is found satisfactory, the grower is paid at the current market price. The market price depends not only on the abundance of the worldwide crop and the quality of farmers' crops in a number of countries, but on a number of economic conditions throughout the world. The industry has set up Cocoa Exchanges, similar to stock exchanges, in principle cities such as New York, London, Hamburg and Amsterdam.

From the Bean to Chocolate

We now come to the remarkable art of chocolate making, a process that is comparable with the skill and finesse of the world's greatest chefs. The manufacturing process requires much time and painstaking care. Just to make an individual-size chocolate bar, for instance, takes from two to four days or more.
Manufacturing methods will differ in detail from plant to plant, but there is a general processing pattern which prevails everywhere. It is this pattern that makes the chocolate industry distinctive from every other industry.
For example, all manufacturers carefully catalogue each shipment according to its particular type and origin. This is very important, because it enables them later to maintain exact control over the flavor blending of beans for roasting.

Prior to Roasting

While awaiting the blending process, the beans are carefully stored. The storage area must be isolated from the rest of the building so the sensitive cocoa does not come into contact with strong odors which it may absorb as an off-flavor. Every step of the way so far reflects the close regulation of conditions which is needed to ensure the production of uniformly high quality chocolate.
The first step to actual manufacturing is cleaning. This is done by passing the cocoa beans through a cleaning machine that removes dried cacao pulp, pieces of pod and other extraneous material that had not been removed earlier.

When thoroughly cleaned, the beans are carefully weighed and blended according to a company's particular specifications. These formulas are based on experience and desirability. In the science of chocolate making, much depends upon the ability to achieve the right formula for the desired end product through the proper selection of beans available.

To bring out the characteristic chocolate aroma, the beans are roasted in large rotary cylinders. Depending upon the variety of the beans and the desired end result, the roasting lasts from 30 minutes to two hours at temperatures of 250 degrees Fahrenheit and higher. As the beans turn over and over, their moisture content drops, their color changes to a rich brown, and the characteristic aroma of chocolate becomes evident.

What Follows Roasting

Proper roasting is one of the keys to good flavor, but there are still several more steps to follow. After roasting, the beans are quickly cooled and their thin shells, made brittle by roasting, are removed. In most factories, this is done by a "cracker and fanner," a giant winnowing machine that passes the beans between serrated cones so they are cracked rather than crushed. In the process, a series of mechanical sieves separate the broken pieces into large and small grains while fans blow away the thin, light shell from the meat or "nibs."

The nibs, which contain about 53 percent cocoa butter, are next conveyed to mills, where they are crushed between large grinding stones or heavy steel discs. The process generates enough frictional heat to liquefy the cocoa butter and form what is commercially know as chocolate liquor. The term liquor does not refer to alcohol, it simply means liquid. When the liquid is poured into molds and allowed to solidify, the resulting cakes are unsweetened or bitter chocolate.

Up to this point, the manufacturing of cocoa and chocolate is identical. The process now diverges, but there is an important interconnection to be noted. The by-product of cocoa shortly becomes an essential component of chocolate. That component is the unique vegetable fat, cocoa butter, which forms about 25 percent of the weight of most chocolate bars.

How to Make Cocoa Powder

The chocolate liquor, destined to become a cup of cocoa, is pumped into giant hydraulic presses weighing up to 25 tons, where pressure is applied to remove the desired cocoa butter. The fat drains away through metallic screens as a yellow liquid. It is then collected for use in chocolate manufacturing.

Cocoa butter has such importance for the chocolate industry that it deserves more than a passing mention. It is unique among vegetable fats because it is a solid at normal room temperature and melts at 89 to 93 degrees Fahrenheit, which is just below body temperature. Its success in resisting oxidation and rancidity makes it very practical. Under normal storage conditions, cocoa butter can be kept for years without spoiling.

The pressed cake that is left after the removal of cocoa butter can be cooled, pulverized and sifted into cocoa powder. Cocoa that is packaged for sale to grocery stores or put into bulk for use as a flavor by dairies, bakeries, and confectionery manufacturers, may have 10 percent or more cocoa butter content. "Breakfast cocoa," a less common type, must contain at least 22 percent cocoa butter.

In the so-called "Dutch" process, the manufacturer treats the cocoa with an alkali to develop a slightly different flavor and give the cocoa a darker appearance characteristic of the Dutch type. The alkali acts as a processing agent rather than as a flavor ingredient.

How to Make Eating Chocolate

While cocoa is made by removing some of the cocoa butter, eating chocolate is made by adding it. This holds true of all eating chocolate, whether it is dark, bittersweet, or milk chocolate. Besides enhancing the flavor, the added cocoa butter serves to make the chocolate more fluid.

One example of eating chocolate is sweet chocolate, a combination of unsweetened chocolate, sugar, cocoa butter and perhaps a little vanilla. Making it entails melting and combining the ingredients in a large mixing machine until the mass has the consistency of dough.

Milk chocolate, the most common form of eating chocolate, goes through essentially the same mixing process-except that it involves using less unsweetened chocolate and adding milk.

Whatever ingredients are used, the mixture then travels through a series of heavy rollers set one atop the other. Under the grinding that takes place here, the mixture is refined to a smooth paste ready for "conching."

What is Conching?

Conching is a flavor development process which puts the chocolate through a "kneading" action and takes its name from the shell-like shape of the containers originally employed. The "conches," as the machines are called, are equipped with heavy rollers that plow back and forth through the chocolate mass anywhere from a few hours to several days. Under regulated speeds, these rollers can produce different degrees of agitation and aeration in developing and modifying the chocolate flavors.

In some manufacturing setups, there is an emulsifying operation that either takes the place of conching or else supplements it. This operation is carried out by a machine that works like an eggbeater to break up sugar crystals and other particles in the chocolate mixture to give it a fine, velvety smoothness.

After the emulsifying or conching machines, the mixture goes through a tempering interval-heating, cooling and reheating-and then at last into molds to be formed into the shape of the complete product. The molds take a variety of shapes and sizes, from the popular individual-size bars available to consumers to a ten-pound block used by confectionery manufacturers.

Ready for Shipment

When the molded chocolate reaches the cooling chamber, cooling proceeds at a fixed rate that keeps hard-earned flavor intact. The bars are then removed from the molds and passed along to wrapping machines to be packed for shipment to distributors, confectioners and others throughout the country.

For convenience, chocolate is frequently shipped in a liquid state when intended for use by other food manufacturers. Whether solid or liquid, it provides candy, cookie, and ice cream manufacturers with the most popular flavor for their products. Additionally, a portion of the United State's total chocolate output goes into coatings, powders and flavorings that add zest to our foods in a thousand different ways.

Inside a Chocolate Factory

In touring a chocolate factory, one is particularly impressed by the close controls maintained throughout operations. Work is carried out in an atmosphere of scientific exactness and nothing is left to chance.

Precision instruments regulate temperatures, stabilize the moisture content of the air, and control the time intervals of manufacturing operations and other items necessary to achieve quality results.

The equipment of a factory is heavy, massive and complex. Often representing an investment of many millions of dollars, there are literally tons of equipment that the cocoa beans must pass through on their way to becoming chocolate.

Automation Does the Job

Besides the equipment already described, the industry employs a number of fascinating machines to do the work of shaping and packaging chocolate into the familiar forms that we see every day on store counters. Some of the shaping machines perform at amazing speeds, squirting out jets of chocolate that solidify into special shapes at a rate of several hundred a minute.* Other machines do a complete job of wrapping and packaging at speeds that human hands would find impossible.

(* Separate from the chocolate industry but of interest nonetheless, is the enrober-a machine employed by many candy manufactures in the creation of assorted chocolates. The enrober receives lines of assorted centers (nuts, nougats, fruit or whatever desired filling) and showers them with a waterfall of liquid chocolate. This generally covers and surrounds each center with a blanket of chocolate. Yet other confectionery machines create a hallow-molded shell of chocolate which is then filled with a soft or liquid center before the bottom is sealed with chocolate.)

The mechanized nature of the entire chocolate-making process contributes greatly to the industry's high standards of hygiene and sanitation. To keep check on these standards, chocolate factories constantly run quality tests, which show whether the process is proceeding within the strict limitations designed for each product. These tests cover an amazing range-there are tests for the viscosity of chocolate, for the cocoa butter content, for acidity, for the fineness of a product and, of course, tests for purity and taste of the desired finished product.

All chocolate manufacturers, it is important to note, must meet the standards as set forth in the rules and regulations of The Food and Drug Administration. These govern manufacturing formulas, even to the extent of specifying the minimum content of the chocolate liquor and milk used. They also impose strict rules regarding the flavorings and other ingredients that may be used.

Reasons for Secrecy

Where methods of manufacturing are concerned; however, manufacturers have a completely free hand and have developed individual variations from the "pattern." Each manufacturer seeks to protect his own methods by conducting certain operations under an atmosphere of secrecy. Modern technology, in this respect, is reminiscent of the day of the Spanish monopoly.

Today's "secrets," unlike those of old, include many small but important details which center around key manufacturing operations. No chef guards his favorite recipes more zealously than the chocolate manufacturer guards his formulas for blending beans or the time intervals he gives to his conching. Time intervals, temperatures and proportions of ingredients are three critical factors that no company wants to divulge.

A Sanitary Atmosphere

A visit to a chocolate factory certainly will not reveal any secrets; however, the visitor will be impressed by the gleaming appearance that such a place has. Chocolate manufacturers conduct all operations under sanitary, laboratory-like conditions in keeping with the purity of the products they make. They follow a daily regimen of machine maintenance and general housekeeping that is not exceeded in the food industry.

Cleanliness is, indeed, the universal byword of the chocolate industry. Chocolate factories not only have careful programs for industrial sanitation and for the personal hygiene of their employees, but they are continually striving to improve their programs.

A plant within a plant

Technicians use laboratories to analyze every phase of chocolate preparation-from raw materials to finished products. They test samples for the market as well as experimental products produced in a company's pilot plants.
These pilot plants consist of miniature equipment which duplicates a company's entire chocolate making process and those of some of their customers, as well as providing sample quantities of any product desired. Chocolate manufacturers are making increasing use of pilot plants in conjunction with their laboratory research programs to develop interesting new products and find new ways of making the old ones.

Chocolate and Health

Many of the old myths about chocolate and health are crumbling under the weight of scientific fact. The once-prevalent belief that something that tastes so good just cannot be good for you has given way to a more balanced picture of chocolate and cocoa products and their relation to health and nutrition.
The following are brief reviews on recent findings which counter several of the common misinterpretations of the effects of chocolate on health.

Chocolate and Acne

Over the past two decades, research has revealed that chocolate neither causes nor aggravates acne. Acne, a condition resulting from the extreme activity of the skin's oil glands during puberty, is not linked primarily to diet. In research conducted at the University of Pennsylvania School of Medicine, Department of Dermatology, a control group was given a bar with no chocolate which resembled a chocolate bar and had 28 percent vegetable fat to imitate the fat content of chocolate liquor and cocoa butter. A similar group was given real chocolate, but the test bars contained almost 10 times as much chocolate liquor as a normal 1.4 ounce chocolate bar. At the end of the test, the average acne condition of the persons in the group eating chocolate was almost the same as those who had no chocolate.
A group of 80 midshipmen at the U.S. Naval Academy in Annapolis, Maryland, all of whom had acne conditions ranging from mild to moderate, were divided into groups, both experiencing the same living, dining and physical activities. One group avoided all chocolate for four weeks, the other included a minimum of three bars in their daily diet. After four weeks, the groups exchanged eating patterns. Clinical observations, facial overlays and photographs showed no significant changes in the acne conditions in either group.

Chocolate and Caffeine

The amount of caffeine ingested when people eat chocolate in normal quantities is very small. 1.4 ounces of milk chocolate, for example, contains about 6 milligrams of caffeine, about the same as the amount found in a cup of decaffeinated coffee. Thus, the role of caffeine in chocolate is largely a non-issue.

Chocolate and Dental Caries

Tooth decay has become less of a problem for Americans over the last 25 years. Between 1960 and 1980 the incidence of cavities has dropped by 50 percent. Today, more than one-third of all college-aged Americans have never had a single cavity.
It is widely accepted that all foods containing "fermentable carbohydrates" have the potential to contribute to caries formation. Fermentable carbohydrates are present in starches and sugars, including those that occur naturally in foods and those added in processed foods. Frequency and duration of tooth exposure to fermentable carbohydrates have been identified as factors in caries.
Although chocolate contains fermentable carbohydrates, a number of dental research studies suggest that chocolate may be less apt to promote tooth decay than has been traditionally believed. Research at the Forsyth Dental Center in Boston and at the

University of Pennsylvania, School of Dental Medicine has shown that cocoa and chocolate have the ability to offset the acid-producing potential of the sugar they contain. Acid, produced by certain oral bacteria that digest or "ferment" sugars, can damage tooth enamel and cause decay. Cocoa and chocolate have also been shown to reduce the demineralization process-an activity which directly results in the formation of dental caries.

In a study conducted at the Eastman Dental Center in Rochester, New York, milk chocolate and chocolate chip cookies were found to be among the snack foods which contribute least to dental decay. The researchers reported that: "Milk chocolate has a high content of protein, calcium, phosphate and other minerals, all of which have exhibited protective effects on tooth enamel. In addition, due to its natural fat content, milk chocolate clears the mouth relatively faster than other candies. These factors are thought to be responsible for making milk chocolate less cariogenic."

Chocolate and Nutrients

Chocolate provides a number of nutrients the body requires daily. A milk chocolate bar weighing 1.4 ounces contains about three grams of protein, fifteen percent of the Daily Value of riboflavin, nine percent of the Daily Value for calcium and seven percent of the Daily Value for iron.

Almonds and peanuts added to chocolate increase the nutrients in a bar. This is particularly true for protein. Milk chocolate bars with almonds also have increased amounts of calcium, iron and riboflavin.

Chocolate and Weight Control

Contrary to the popular stereotype, most overweight people do not eat excessive amounts of cake, cookies, confectionery or other foods containing sugar. Their sugar intake tends, in fact, to be below average.

More important in controlling weight is the total number of calories consumed each day and the amount of energy expended in physical activity. Overweight children, for example, are generally less active than those of normal weight; thus, they may remain overweight even when their caloric intake is reasonable or even limited.

Moreover, many people overestimate the calories in chocolate. A 1.4 ounce milk chocolate bar contains approximately 210 calories-low enough to incorporate into a weight control diet. The occasional chocolate confection may also reduce the possibility of a binge, which can occur as a result of feeling deprived of highly satisfying foods such as chocolate.

Chocolate and Cocoa Butter

Cocoa butter, the fat that occurs naturally in cocoa beans, gives chocolate its distinctive smoothness and "melt-in-the-mouth" texture. Research has shown that cocoa butter, despite its high saturated fat content, does not raise blood cholesterol levels as do other saturated fats. This is due to its high stearic acid content. Stearic acid, one of the principal fatty acids in cocoa butter, has been found to be used in the body differently, in that it may reduce levels of cholesterol in the blood.

Lastly, about chocolate milk. Chocolate milk provides more zinc, potassium, niacin and riboflavin than plain whole milk. In terms of calcium, protein and vitamin B, plain milk has slightly more. For all other nutrients, plain milk and chocolate milk are about the same.

Additionally, children are more likely to drink chocolate milk than plain milk. Studies have shown that the amount of chocolate milk left undrunk by children in grades 1 through 5 was about two-thirds less than when only plain milk was offered.

Moreover, research conducted at the University of Rhode Island suggests chocolate milk may have benefits for individuals who are lactose intolerant. Research reveals that

lactose intolerant individuals who consumed chocolate milk showed significant reductions in their symptoms.

Particular emphasis has been given to the activities that have made the chocolate industry distinctive from all other industries. Each activity is characterized by a heritage of quality workmanship-certainly one of the hallmarks of chocolate making.

Chocolate making is much more than a series of scientific and mechanical phenomena. In a word, it is a true art, which started centuries ago and has been preserved and perfected to make chocolate America's favorite flavor