

# COCOA

Cocoa is the dried and fully fermented fatty seed of the cacao tree from which chocolate is made. "Cocoa" can often also refer to the drink commonly known as hot chocolate.

A cacao pod has a rough leathery rind about 3 cm thick (this varies with the origin and variety of pod). It is filled with sweet, mucilaginous pulp called 'baba de cacao' in South America, enclosing 30 to 50 large almond-like seeds (beans) that are fairly soft and pinkish or purplish in color.

Cocoa should not be confused with the coca plant which can be used to create cocaine.

The beans are extracted from the ripe pods and heaped up into mounds so that they ferment. This process destroys the germ and helps to develop their flavour. They are then sorted, washed, dried and roasted.

## HISTORY

The cacao tree is native to the Americas. It may have originated in the foothills of the Andes in the Amazon and Orinoco basins of South America where today, examples of wild cacao still can be found. However, it may have had a larger range in the past, evidence for which may be obscured because of its cultivation in these areas long before, as well as after, the Spanish arrived. It may have been introduced into Central America by the ancient Mayas, and cultivated in Mexico by the Olmecs, then by the Toltecs and later by the Aztecs. It was a common currency throughout Mesoamerica and the Caribbean before the Spanish conquest.

The word cocoa is derived from the Aztec word Cacahuatl. According to legend, the cocoa tree was the most beautiful tree in the paradise of the Aztecs, and they attributed many virtues to it. It was thought to appease hunger and thirst, give universal knowledge, and cure sickness. In 1502, Christopher Columbus was offered, as a sign of welcome, weapons, fabrics and sacks of brown cocoa beans, the latter, in Aztec society, serving as currency as well as food. In 1519 Cortés discovered the New World civilisation, and the first cargo of cocoa reached Spain in 1524. It was not until the 17th century that cocoa, or chocolate, became a fashionable drink, and it was not until the 19th century that chocolate bars were first manufactured.

Cacao trees will grow in a limited geographical zone, of approximately 20 degrees to the north and south of the Equator. Nearly 70% of the world crop is grown in West Africa.

Cocoa was an important commodity in Pre-Columbian Mesoamerica. Spanish chroniclers of the conquest of Mexico by Hernán Cortés relate that when Montezuma II, emperor of the Aztecs, dined he took no other beverage than chocolate, served in a golden goblet and eaten with a golden spoon. Flavored with vanilla and spices, his chocolate was whipped into a froth that dissolved in the mouth. It is reported that Montezuma II may have consumed no fewer than 50 portions each day, and 200 more by the nobles of his court.

Chocolate was introduced to Europe by the Spaniards and became a popular beverage by the mid 1600s. They also introduced the cacao tree into the West Indies and the Philippines.

The cacao plant was first given its botanical name by Swedish natural scientist Carolus Linnaeus in his original classification of the plant kingdom, who called it Theobroma ("food of the gods") cacao.

## PRODUCTION

About 3,000,000 tonnes (3,000,000 LT; 3,300,000 ST) of cocoa is produced each year. The global production was

1,556,484 t (1,531,902 LT; 1,715,730 ST) in 1974,  
1,810,611 t (1,782,015 LT; 1,995,857 ST) in 1984,  
2,672,173 t (2,629,970 LT; 2,945,567 ST) in 1994,  
3,607,052 t (3,550,084 LT; 3,976,094 ST) in 2004 (record).

This is an increase of 131.7% in 30 years, representing a cumulative average growth rate (CAGR) of 2.8%.

There are three main varieties of cacao: Forastero, Criollo, and Trinitario. The first comprises 95% of the world production of cacao, and is the most widely used. Overall, the highest quality cocoa beans come from the Criollo variety, which is considered a delicacy. Criollo plantations have lower yields than those of Forastero, and also tend to be less resistant to several diseases that attack the cocoa plant, hence very few countries still produce it. One of the largest producer of Criollo beans is Venezuela (Chuao and Porcelana). Hacienda San José, located in Paria/Venezuela, cultivates Criollo beans. The total area of this hacienda is 320 hectares, of which 185 hectares are devoted to cacao with a density of 1.000 plants per hectare. Trinitario is a hybrid between Criollo and Forastero varieties. It is considered of much higher quality than the latter, but has higher yields and is more resistant to disease than the former.

The Netherlands is the leading cocoa processing country, followed by the U.S. There are several varieties of cocoa. The best variety comes from Venezuela. The finest and most aromatic, it is known as Caracas cacao. Brazilian cocoa, known as Maranhão cacao, has a pleasant bitter taste, like the cocoas of Ecuador and the West Indies. The latter two varieties are used to flavour weaker cocoas, with which they are mixed. The African cocoas, which give a high yield but are poor in quality, are used mainly for commercial products. Cocoa beans are also produced in Sri Lanka and Java.

The raw material of all cocoa or chocolate based products is cocoa paste. This bitter oily substance is made by crushing the cocoa beans after they have been fermented, roasted and shelled. The fat content of cocoa paste amounts to 45 - 60%, according to the quality of the beans. Crushing is very important, as it determines the fineness and smoothness of the paste.

Cocoa and its products (including chocolate) are used worldwide. Per Capita consumption is poorly understood with numerous countries claiming the highest: various reports state that Switzerland, Belgium, and the UK have the highest consumption, but because there is no clear mechanism to determine how much of a country's production is consumed by residents and how much by visitors, this is all speculative.

## HARVESTING

When the pods ripen, they are harvested from the trunks and branches of the Cocoa tree with a curved knife on a long pole. The pod itself is green when ready to harvest, rather than red or orange. Normally, red or orange pods are considered of a lesser quality because their flavors and aromas are poorer; these are used for industrial chocolate. The pods are either opened on the field and the seeds extracted and carried to the fermentation area on the plantation, or the whole pods are taken to the fermentation area.

## PROCESSING

The harvested pods are opened—typically with a machete—the pulp and cocoa seeds are removed and the rind is discarded. The pulp and seeds are then piled in heaps, placed in bins, or laid out on grates for several days. During this time, the seeds and pulp undergo "sweating", where the thick pulp liquefies as it ferments. The fermented pulp trickles away, leaving cocoa seeds behind to be collected. Sweating is important for the quality of the beans, which originally have a strong bitter taste. If sweating is interrupted, the resulting cocoa may be ruined; if underdone the cocoa seed maintains a flavor similar to raw potatoes and becomes susceptible to mildew.

Some cocoa producing countries distill alcoholic spirits using the liquefied pulp.

The fermented beans are dried by spreading them out over a large surface and constantly raking them. In large plantations, this is done on huge trays under the sun or by using artificial heat. Small plantations may dry their harvest on little trays or on cowhides. Finally, the beans are trodden and shuffled about (often using bare human feet) and sometimes, during this process, red clay mixed with water is sprinkled over the beans to obtain a finer color, polish, and protection against molds during shipment to factories in the United States, the Netherlands, United Kingdom, and other countries.

Drying in the sun is preferable to drying by artificial means, as no extraneous flavors such as smoke or oil are introduced which might otherwise taint the flavor.

## COCOA TRADING

Cocoa beans, Cocoa butter and cocoa powder are traded on two world exchanges: London and New York. The London market is based on West African cocoa and New York on cocoa predominantly from South East Asia. Cocoa is the world's smallest soft commodity market. The futures price of cocoa butter and cocoa powder is determined by multiplying the bean price by a ratio. The combined butter and powder ratio has tended to be around 3.5. If the combined ratio falls below 3.2 or so, production ceases to be economically viable and some factories cease extraction of butter and powder and trade exclusively in cocoa liquor.