Does Chocolate Grow on Trees?

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From Ancient Seeds to Tasty Delight

Chocolate starts its life not as a delicious truffle or warm drink, but as the seed of a tropical fruit from the cacao tree (*Theobroma cacao*), which thrives in hot, rainy climates near the equator.

The "Food of the Gods"
The story of chocolate begins deep within the lowland equatorial rainforests of southern Mexico and Central America, and northern South America, the native home of the *Theobroma cacao*, an evergreen tree. This tree's Latin name is fitting. *Theobroma* means "Food of the Gods," a testament to its revered status. The word chocolate is derived from the Aztec word xocolatl (sho-KWA-til) and means bitter water.

The cacao plant belongs to the interesting Malvaceae family, which also includes diverse species like cotton, okra, durian fruit, and balsawood.

A History of Cacao: From Aztec Reverence to European Treat
The rich history of cacao is deeply rooted in the ancient civilizations of Mesoamerica, where it was revered long before it reached European shores.

Cacao in Mesoamerica
Archaeological evidence, including depictions of cacao pods on ancient ceramics and chemical analysis of the vessels' contents, indicates that the indigenous peoples of Mesoamerica discovered the edible properties of T. cacao over 6,000 years ago. By 400 BCE, the Olmecs in Mexico and Guatemala had established their first cacao plantations. By 250 CE the Mayans solidified its importance by depicting cacao trees and pods in their elaborate hieroglyphic writings, carvings, and paintings.

Both the Maya and Aztec civilizations viewed the cacao bean as far more than just food. It was a precious commodity used as a form of money, traded for valuable goods such as salt, bird feathers, animal hides, and obsidian. Furthermore, both civilizations believed cacao possessed magical and divine properties, using it in their most sacred rituals of birth, marriage, and death.

Cacao in Europe: From Royalty to the Masses
The first European encounter with cacao occurred in 1519 when the Spanish colonizer Hernán Cortés and his expedition reached the heart of the Aztec Empire, in what is now Mexico City. There, the Aztec leader, Montezuma, introduced Cortés to the ceremonial drink xocolatl, made from cacao beans and enriched with vanilla, chiles, and local spices.

Cortés brought seeds back to Spain as a gift for King Charles I. By the 1600s, cacao had become a highly exclusive food and drink, enjoyed only by the wealthy across Europe.

Cacao remained expensive until the 1800s, when industrial advancements made it widely affordable. A major breakthrough came in 1810 when Dutch Chemist Conrad van Houten developed a process for making cocoa powder, making the product easier to process and cheaper to manufacture.

Pollination: The Cacao Pod and its Struggle for Life
The cacao tree thrives in dense tropical rainforests, requiring high humidity and regular rainfall. It grows in the mid-canopy, generally below 1,000 feet, often enduring flooded roots along riverbanks.

A detail of the flowers growing out of the trunk of a cacao tree

The journey to fruit is difficult. Around five years old, the *T. cacao* begins reproducing, flowering year-round. Small, half-inch pink-to-white flowers sprout directly from the trunk and branches, an unusual growth pattern called cauliflory. These flowers are short-lived, receptive to pollen for only a day or two, and die within 36 hours if unpollinated. The primary pollinators are tiny midges (1–3 mm biting flies), but the process is highly inefficient, with less than 5% of cacao flowers being pollinated. Furthermore, successful

fruiting requires cross-pollination (pollen from a different tree). After successful pollination, the fruit, referred to as a cacao pod, begins to develop.

From Pod to Seed Dispersal
The cacao pod matures slowly, taking 5-6 months to ripen and change color (yellow, orange, or red). The pod can reach up to 10 inches in length, containing 20 to 60 seeds (beans), each covered in sweet, white edible pulp.

The pod's walls are so thick that they can't release these seeds on their own. Fortunately for us, monkeys and other animals are attracted to the colorful pods for the sweet pulp. They break them open to eat the sweet pulp and then spit out or excrete the seeds, which potentially become new *T. cacao* saplings on the forest floor.

Cacao Processing: Fermentation is Key
To become the chocolate we know, the seeds, known as cacao beans, must be harvested, fermented, dried, and roasted to develop their rich flavor.

Once harvested, the products made from the beans are most commonly referred to as cocoa. Much like the complex flavors found in wine or vanilla, the flavor profiles of cocoa beans are unique to the region where they are grown. The specific characteristics of the soil, the local soil microbes, and the climate all combine to give beans from different parts of the world their distinctive taste.

Processing begins when cacao pods are picked and broken open. The beans, still covered in pulp, are set aside to ferment in trays or on the ground. The pulp's high moisture content reacts with airborne yeast, stimulating the fermentation process. This crucial step kills the embryo, reduces bitterness, and develops flavor. After several days, the liquid drains, and the beans are dried.

These seeds are precious: it takes about 40 beans to make a 2-ounce bar of 70% dark chocolate!

The next time you savor a bite of rich, dark chocolate consider the journey from the bitter seed prized by ancient cultures to the sweet delight. It's one of nature's most intricate and fascinating transformations!