

GROWING A CHOCOLATE TREE AT HOME OR IN AN OFFICE



Young cocoa seedling

Many people enjoy growing *Theobroma cacao* as a house plant. To grow your chocolate tree to a large size, you will have to take good care of it. To understand what it likes, it helps to think of its native habitat, the Amazon Rainforest.

THE NATIVE HABITAT AND LIFE CYCLE OF CACAO

The chocolate tree or cacao plant grows as a small understory tree, in the shadow of large hardwood species. The temperature is about 80° F year round, and it rains nearly every day, although there may be periods of relatively less rain. This makes the humidity quite high, usually greater than 70%. However, the soil often contains large amounts of organic and sandy materials and these provide nutrients and help it drain rapidly. The soil is usually a bit acidic, averaging about pH 6. The cacao plant usually grows from seed, sending a large, deep taproot into the soil. The cacao plant experience periods of rapid growth, then rest for a period. The leaves will usually be red when they first appear, then darken as they mature. After 1–2 years, four or five branches will form at the top, and they will grow nearly horizontal. Shortly after this, flowers will begin to appear on the main trunk. Although small, they are beautiful, and have a subtle pleasant fragrance. The

flowers are pollinated by small flying insects (no-see-ums), and often require pollen from a separate plant to form fruit. Many cacao plants are self-incompatible, requiring pollen from an unrelated plant. It is fascinating to watch the pod develop slowly.

About six months later, a football-sized pod will ripen. In the rainforest, small monkeys and other mammals bite holes in the pod, remove the seeds, suck on the delicious, wet-slippery juice surrounding them, then spit out the seeds, planting the next generation of cacao trees, and completing the life cycle.

GROWING CACAO AT HOME

SOIL First, let your plant grow for 3–6 weeks in the small pot, watering it 1–2 times per week, never letting the soil get dry. Grow it in a window with indirect light or under artificial grow lights. Once it is about 10 inches tall, transplant it to a larger pot, being very careful not to break the main root. A mixture of 50% sand and 50% home potting mix will provide good drainage like in the rainforest. Cacao cannot survive long in very wet soil. Use a dilute fertilizer each time you water; for



1 ½ year old tree



Cocoa flowers

example, African Violet Miracle Grow diluted to half the recommended strength, or use potting. If needed, ask your garden center sales person or local agricultural extension office for help. As your plant grows, keep transplanting it to larger pots. Remember that in nature, the root will be nearly as large as the top portion of the plant. It needs room to grow, and make sure not to break it. You can trim the smaller roots around it.

WATER Water before the soil feels dry, and keep it moist, but not soaked. It is okay to soak the soil occasionally; for example, if you are leaving for a few days, but do not let it dry completely before next watering. Your cacao plant cannot take dry soil even for a short period of time. Every 6–12 months or so, leach the salts from the soil by running fresh water through the pot for 5 or 10 minutes. This step is very important, otherwise the leaves may begin to brown and die.

LIGHT Put your cocoa plant in a window which gets a little direct sunlight either in the early morning or late afternoon, or place it in the shade of other plants. It needs bright but not much direct light, especially when the sun is brightest.



Cacao pods

AIR Your plant will like high humidity, but can adapt to your home. Do not put it near heaters or air conditioners which dry out the air. You can place it outside in a rainstorm once it is big enough to not be damaged. This will also help to wash off dust and dirt which will build up on the leaves. In some locations or during warm seasons, your plant can grow outside, keeping in mind all of the above suggestions. For example during humid months in July and August in Pennsylvania, the plants can grow on a covered porch outside, or under a tree in the yard. The cacao plant cannot take periods of cold below 45°F for long, so move it indoors long before fall chills begin.

POLLINATION Some cacao plants are self incompatible (need two parents for pollination) and other are self-compatible (can self fertilize). If you have a self incompatible plant you may be able to get pollen from another tree at your local botanical garden.

Early in the morning, take the anthers from a just opened flower, they are hidden inside the pouch of the petals. Bring it to the other tree and rub it on the pistil (female part) of the flower, which is in the very center. The entire anther should stick to the stigma for best pollination. You may need a magnifying glass to do this. Do a number of pollinations, as each one may not take. Once you see a small green fruit developing, make sure not to disturb it. After 6 months or so it should change colors and stop growing, it is ready to harvest. Taste the juice inside. Observe the seeds, they do not taste like chocolate. They need fermentation and roasting to develop the flavor.

PRUNING If your plant gets too big for your home, you can prune it down to size. Don't cut too much at one time, as it is better to remove parts of branches that are too big a few times per year. Try to make a pleasing and balanced shape. Remove crossing or bent branches. Use sharp pruning shears, and clean them before use.

PESTS Keep your plant away from other plants that have infestations of insects. Insects such as the mealy bug or aphids might begin to grow on you plant. First, try to remove as many as possible by hand, using soapy water and tissue paper. If necessary, use household insecticides available at your garden center.

With proper care, your chocolate plant will grow for years and provide you with a beautiful and interesting plant. Watching your plant grow will be fun, and will teach you about the plants of the tropical rainforest. If you are very good to them, they can even reward you with a live cacao pod, full of seeds, that can be used to make chocolate.

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This cacao tree was grown indoors, in a lobby of the author's lab, and has flowered and set fruit as seen here. Take good care of your plant and it will too!