



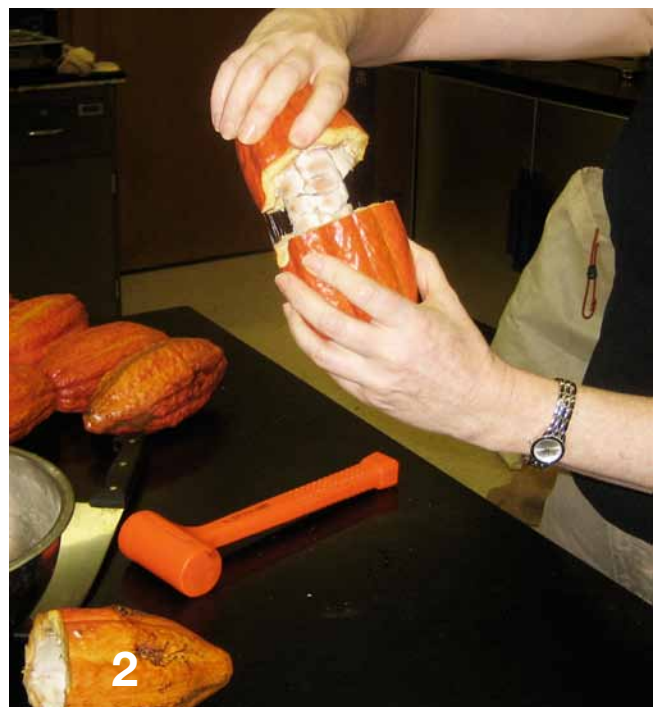
Making Chocolate from Scratch

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This publication provides the small-scale cacao grower or hobbyist with a method to transform raw cacao seeds into chocolate using as few as half a dozen pods. The procedure can be used to produce nibs or to make chocolate from dried seeds.



Day 1. Harvest ripe pods, green turning yellow or red turning orange. Seeds are loose in ripe pods but not in unripe pods. If seeds have sprouted, the pod is over-ripe—don't use it, or remove sprouted seeds.



Use a mallet or cleaver to crack the pod between the middle and the stem end. Pull seeds off the core.



Mix $\frac{1}{4}$ teaspoon of yeast in $\frac{1}{4}$ cup warm water, pour it onto 2–3 lb fresh seeds, and stir. This is to start fermentation, which is essential for developing the chocolate flavor.



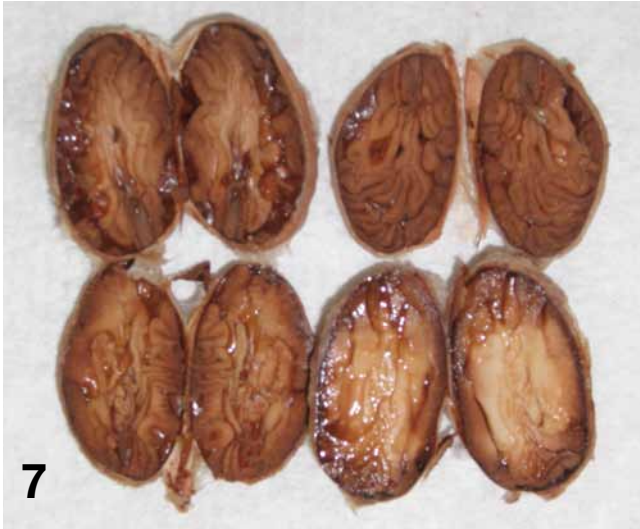
Turn the cup upside down over a dish to catch drainage. Keep at 95°F for 3 days, then pour seeds into a dish and mix by hand, then return them to the cup.



Pour seeds into a 1-qt plastic cup. (Note the drainage holes in the lid.)



Check the temperature daily. Increase temperature to 113°F for days 4–6. We use an incubator, but a heating pad, heating cable, or even a light bulb with a thermostat control works. If mold—gray, blue, or black fuzzy growth appears on the seeds—the fermentation has failed and the seeds should be discarded.



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Day 6. Cut a seed to check if fermentation is complete. The interior should be tan to dark brown and juicy, and you should see folded cotyledons (seed leaves).



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Day 9 or 10. Roast a single layer of seeds at 275°F for 1 hour, or 30–40 minutes at 300°F. The oven will smell like brownies baking. Roasting creates the flavor and aroma if the fermentation was good. Best results are with a convection oven.



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Day 7. Put the seeds in the sun or a dehydrator until dry, when you can break the shell easily and the seed crumbles. Moisture content should be about 6%.



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Gently break the roasted seeds with a rolling pin; we use a hop crusher, shown here. Separate the shell pieces from the seed pieces (called nibs). We use an air separator, but a hair dryer set on cold, a small vacuum cleaner, or a fan, will work as well. Shell pieces can make the chocolate bitter.



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Grind the nibs to a liquid, called cocoa liquor. We use a Champion Juicer (or similar), gently pushing them through with the pestle. Un-ground nibs exit the juicer on the right and are poured into the funnel again until all is liquid. From this point, prevent water or watery liquid from getting into the mixture.



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Basic recipe: 55% cocoa liquor, 10% melted cocoa butter, 35% table sugar (all by weight), and a pinch of lecithin. For example, if you have 500 g of cocoa liquor, then the total weight of your chocolate batch will be $500 \text{ g} \div 0.55 = 909 \text{ g}$. So you need 909×0.10 , or 91 g, of cocoa butter, and 909×0.35 , or 318 g, of sugar. Cocoa butter and lecithin can be purchased from health food or restaurant supply stores. Pour the ingredients into the bowl of a Santha wet grinder. It is best to melt the cocoa butter first (use a hair dryer, or melt it on a stove). Let the grinder run for at least 16–24 hours, or longer.



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Day 11. When the chocolate is done, a sample tasted should be smooth, not gritty. To “temper” it (make it shiny and crisp) pour the chocolate into a dry metal bowl, remove about one-third of the amount to a second bowl, stir it with a spoon until it becomes chunky, then add it back to the rest and stir until smooth. Immediately pour it out onto a flat silicon sheet, a marble slab, or into molds.



If you score lines in the cooling chocolate, it will easily break apart when cooled.

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Equipment, ingredients, recipes, advice:
www.chocolatealchemy.com

Santha grinder: www.santhausa.com

Mention of proprietary names is for the convenience of readers and does not constitute a recommendation to the exclusion of other companies or products that may also be suitable.