



Roasting



COFFEE BEANS

at Home



A Beginners Guide
Including Coffee Drink Recipes

Linda Smith

**To my children who share
my love of coffee**



**and my husband who
tolerates it.**

Introduction

Roasting coffee is an age-old art that dates back to at least the 15th century. For most of coffee bean history, roasting was done in small personal batches. With the invention of drum roasting, the coffee bean industry expanded into a lucrative business.



Roasting your own coffee has many advantages; It is easy, fresh roasted coffee tastes better, raw beans stay fresher longer (up to a year or more), raw beans are less expensive than roasted beans, and there is a greater diversity of raw coffee beans than roasted beans. But the best reason is because it's fun and allows you to witness the alchemy of turning the beans into sweet-smelling, tiny aromatic packages.

Equipment

What you will need for roasting your own coffee beans at home:

- Green or raw coffee beans
- Gas heat
- Cast iron skillet
- A wisk
- 2 Wire mesh strainers
- Heat safe gloves
- A timer
- A digital thermometer
- Storage containers with tight lids
- A roasting journal (optional)



The instructions in this booklet cover roasting coffee beans using equipment that is common to most house holds. This does not include commercially purchased roasters.

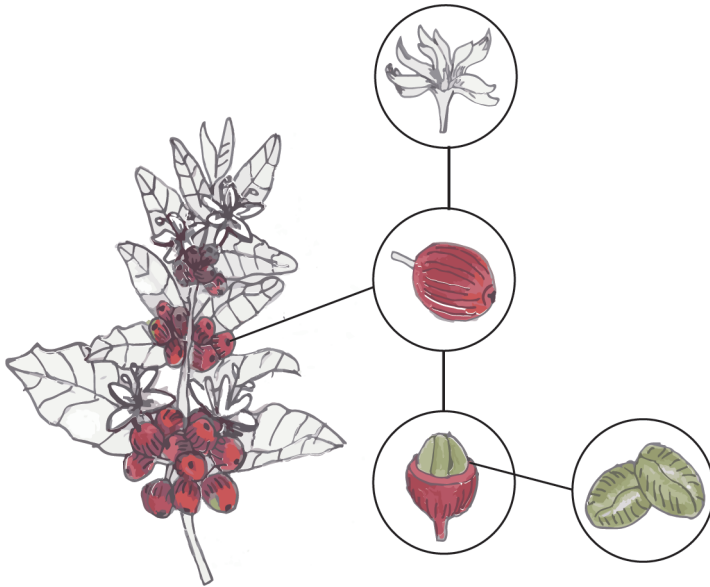
CAUTION: Roasting coffee beans can produce a large amount of smoke, so it is highly suggested that you roast outside or in well ventilated area.

FIRE RISK: There is a fire risk to roasting coffee beans if you are roasting in a pan or in an oven. Be sure to have a water source close in case of fire.



Processing

Roasting at home doesn't mean you'll never buy roasted beans at the store, but you may develop an appreciation for the artisans and their roasting prowess.



Coffee beans grow on bushes and are actually the seed of a fruit called a coffee cherry. It is the process of extracting the seed or coffee bean from the fruit that contributes to the coffee flavor. After the coffee cherry is hand picked from the bush it will undergo either dry processing or wet processing.

Before learning to roast you need to know about coffee bean processing because this is where the various flavors and characteristics are encoded on to the bean.

Climate is also a contributor to coffee flavor and characteristics. Most coffee is grown in cool to warm tropical areas of the world in countries that are close to the equator.



Methods

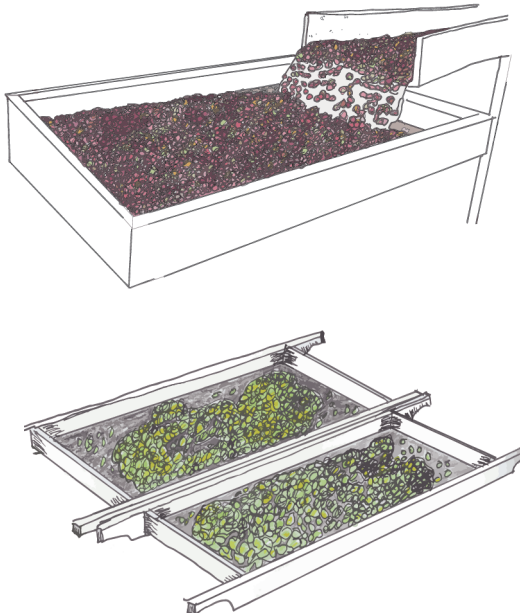
Dry or Natural Method



In the dry or natural method, the coffee cherry is laid to dry in the sun on racks or on the ground. The cherries are frequently rotated to eliminate the chance of mold growth. After drying the husks are removed and what is left is the green bean. They are then stored to rest before exporting.

The dry method produces a coffee bean with sweet fruity flavors with notes of blueberry, strawberry, tropical fruits and honey or wine.

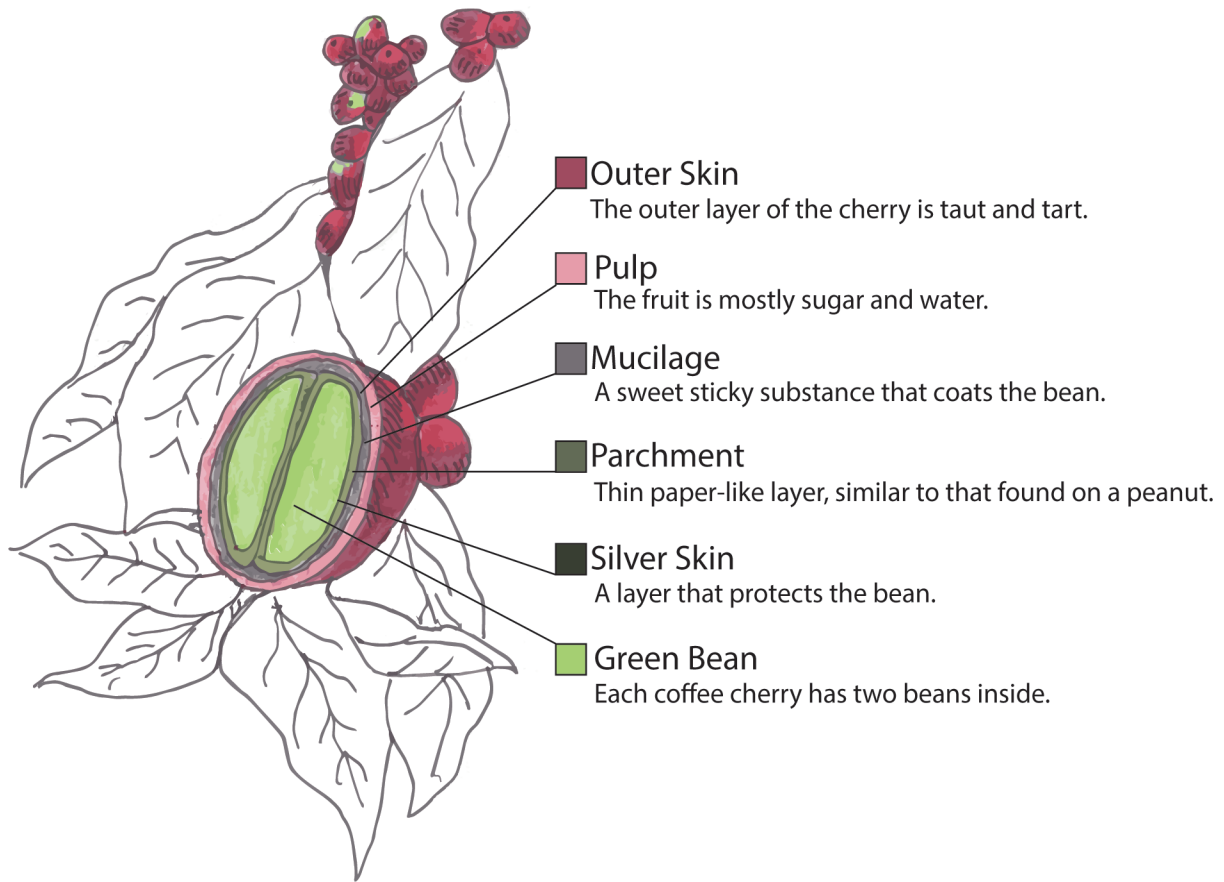
Wet Method



During the wet method of processing, the cherries are machined to remove the flesh part of the cherry and then soaked in water to ferment. The fermenting process takes from 24-72 hours and helps remove the remainder of any fruit from the bean. The beans are then washed again and placed on drying racks in the sun. Beans can also be machine dried in regions with less sun.

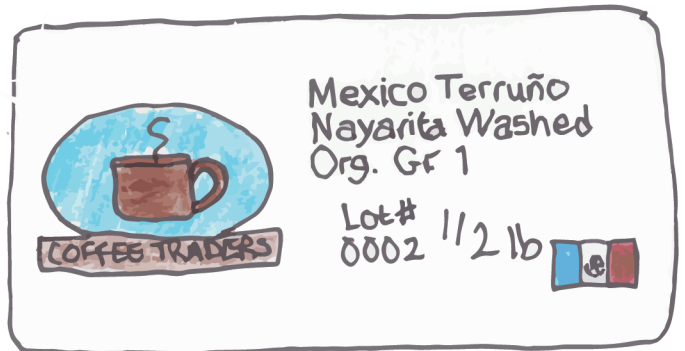
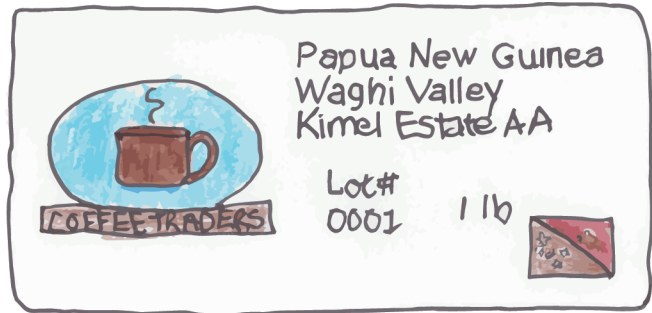
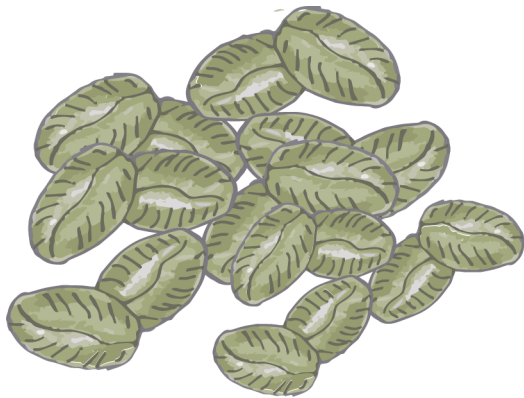
Washed coffee beans produce more complex and acidic flavors which are the more sought-after characteristics of coffee connoisseurs.

Coffee Cherry Anatomy



Purchasing

It is easy to find green coffee beans. Just look online. You may also be able to buy them at local roasters or at farmers markets. The descriptions should tell you how the beans were processed. Some may tell you what region of the world they were grown in. If they are water processed, they probably grow in regions where water is plentiful, and in dryer regions the beans may be dry/naturally processed.



Roasting Styles

There are a number of defined roasts of coffee bean. They are determined by the roasting time and resulting color of the bean.

Cinnamon



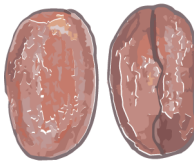
This is a light roast that reveals the clearest portrait of the bean's flavor. The name denotes the color not the flavor.

Espresso



Darker than the Vienna roast, highlights acidity, and is roasted for a longer period of time at a lower temperature.

City/Full City



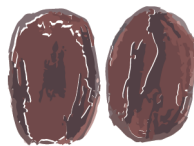
This roast is one or two shades darker and the Cinnamon roast. The sugars are more developed due to the longer roasting time, providing caramel notes and little loss of acidity.

Italian



A slightly darker than Espresso roast but has more pronounced oil and bittersweet notes. This roast creates a bean that is more complex than acidic.

Vienna



This roast, a shade darker than the city roasts, begins to show signs of sweating during the roasting process. This sweating is tiny droplets of oil which produces caramel notes.

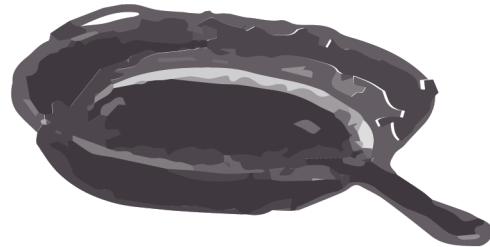
French



This roast is deep and dark with spicy charcoal notes similar to foods cooked on a charcoal grill. The beans are often shiny due to surfaced oils.

Let's Start Roasting!

1 Place the cool roasting pan on the stovetop centered over the burner grate or on a gas grill grate if roasting outside.



2 Start with a small batch of raw beans for your first roast (about 1/3 cup).



3 Pour the raw beans into the cool pan.

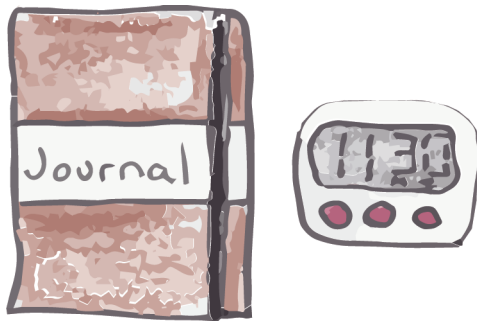


4 Turn the burner on to medium heat and start the timer.



Keep Stirring

- 5** Immediately start stirring the beans with the whisk. It is important not to let the beans sit in the pan without stirring at any time during roasting.



- 6** After 5-10 minutes the beans will begin to make a popping or cracking sound. This indicates the “first crack” is starting. Take note of this time in your roasting journal.



Cracking Sounds

- 6** Continue stirring the beans and listen closely for a silence indicating that all of the beans popped. A minute or two later a new faster cracking sound will begin. This is the “second crack” and is often accompanied by hissing sounds. At this point note the color of your beans. Remember to keep stirring.

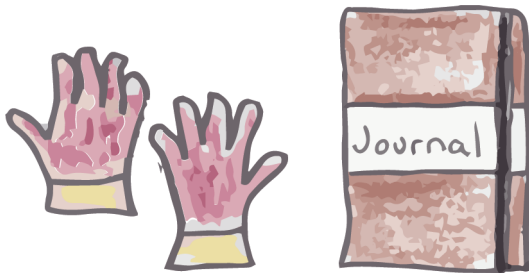


- 7** When your beans attain the desired color, put on the heat safe gloves and pour the beans into one of the two metal colanders.

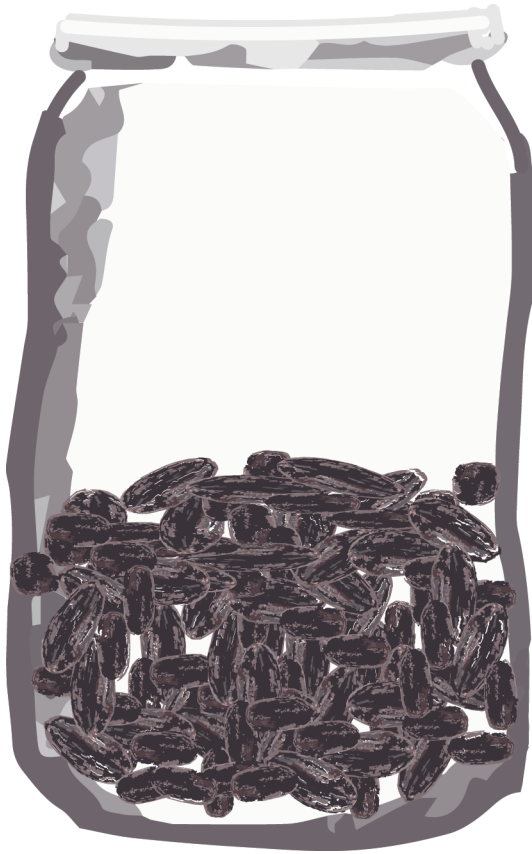


Cooling the Beans

- 8 Take the other metal colander and alternate moving the beans back and forth quickly from one colander to the next for about 5 minutes. Quickness is the key because the beans will continue roasting as long as they are hot. The back-and-forth motion between colanders helps to cool the beans. You will also notice the loosening of chaff from the coffee. This is a light husk that can be blown off of the roasted beans.



Storing the Beans



- 9 When the beans are cool enough to touch, pour them into a storage container like a mason jar. Leave the lid off for a few hours to off gas the CO₂ produced by the beans after the roasting process. Cap the jar after a few hours. Do not leave the jar uncapped overnight.



Thermometer Use



Why do I need a thermometer?

It is almost impossible to tell the exact temperature of a roasting coffee bean, but it is the temperature that helps determine the roast. The best way to estimate the bean temperature is by inserting a digital thermometer within a cluster of beans. This can be challenging with pan roasted beans because leaving the beans sit on the pan without stirring could cause them to burn.

Below is a chart to help you estimate roast style by using the temperature of the beans.

ROAST STYLE	BEAN TEMPERATURE	APPEARANCE
Cinnamon	420°F	Light Brown
City/Full City	430°F	Medium Brown
Vienna	440°F	Dark Brown with light spots
French	445°F	Dark Brown with oil spots
Espresso	448°F	Dark Brown with full oil coat

Enjoy!

Time to try your beans! Roasting requires a lot of experimenting. Don't feel defeated if your brew is not what you had envisioned at the start of the roasting process. With practice, you may develop the skills to produce a great cup of coffee!

Grind, brew and congratulate yourself for trying your hand at coffee bean roasting!

See the next page for some delicious coffee recipes.



Cafe Melange



1/2 cup freshly brewed coffee
1 tablespoon whipped cream
1 teaspoon grated chocolate or 1 teaspoon
cocoa powder

1. Prepare brewed coffee.
2. Top with whipped cream.
3. Dust with grated chocolate or cocoa.

Options: Add mint extract or mint leaf.

Serving size: 1 drink

Recipe from www.jura.com

Cafe Royale



1/2 cup freshly brewed coffee
1 teaspoon granulated cane sugar
2 ounces brandy
2 ounces heavy cream

1. Pour hot, freshly brewed coffee into a cup or glass.
2. Add granulated sugar and stir until it dissolves.
3. Over the back of a teaspoon, pour heavy cream over the top of the drink so that it floats. Serve immediately.

Serving size: 1 drink

Iced Coffee



6 ounces freshly brewed dark roast
coffee, cooled to room temperature
Ice
1 teaspoon sugar or sweetner
Milk

1. Fill a tall glass with ice.
2. Pour chilled coffee in the glass, over the ice.
3. Stir and add milk and sugar or sweetner.

Serving size: 1 drink

Mexican Coffee



1 ounce coffee liqueur
1 ounce white tequila
5 ounces freshly brewed hot black coffee
1 teaspoon brown sugar
1 ounce whipped cream
Grated chocolate

1. Combine tequila, liqueur and coffee in a large coffee cup.
2. Add sugar and float whipped cream.
3. Sprinkle with grated chocolate.

Serving size: 1 drink