AMATEUR'S GUIDE TO BREWING BARISTA QUALITY COFFEE AT HOME

Edmond Hui

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Introduction

By the time you finish reading this book, you'll be able to brew café quality coffee from your home. Coffee is a wonderful drink that many people enjoy around the world. I consider brewing coffee, as both an art and a science. The basic concept is simple: put ground coffee beans in water, which will then extract compounds from the beans that imbue the water with the flavor elements we know as brewed coffee. The artistry comes into play in the details. The size of the grind, the length of the brew, and the method of extraction will all play a part in which flavor notes are emphasized in the final cup.

Coffee is certainly one interesting beverage. The silky taste and the energy that comes with, is enough to make almost everyone fall for it. If you are already a mad coffee addict, then this book will be mad fun for you.

If you love drinking coffee but have been intimidated by the extensive vocabulary and varieties used by coffee enthusiasts and baristas. This book is right for you. You will learn the fundamentals of coffee and the culture behind it. This book will provide you with the coffee literacy you need to experiment with your next favorite drink and converse like a pro with your friends about coffee. It will show you all the fun ways that you can brew, drink, and style your coffee. Whether you want to make cappuccino, café latte, or any other coffee brew that you only find in coffee shops, this book has an A-Z list of all that, with easy-to-follow steps that will help you make your very own cup of coffee at home—just the way you like it. Spice up your usual coffee routine by trying out new coffee recipes or techniques from other parts of the world. There are many ways to enjoy coffee, and that just makes everything more fun. Cheers to coffee! Enjoy!

Chapter 1: Do You Understand Coffee?

Coffee stands among the most popular beverages around the globe next to tea and water. It has grown to become one of the most highly traded and sought-after commodities in the global economy. For a lot of people, coffee is a lifestyle... It's not just the consumption of it either; it's in the planting, the roasting, the brewing, and every single process that takes place in between. There are a large number of people who travel the world looking for that perfect cup of velvety dark goodness. If you're one of those people, then you understand the magic behind this beverage but if you aren't, then you might be curious as to why a considerable mass of individuals seem to be so obsessed and fascinated by this drink.

What is it about coffee that leaves so many people craving and consuming it often, multiple times per day? How has this beverage amassed such dedicated following over the years? It's a drink that has a robust and distinctive aroma to it. There are also various psychological and physical effects associated with the consumption of it. But is that enough? Regardless, there's no denying that the world has a very healthy relationship with this drink. Coffee has proven itself to be more than just a fad, and it's not going away anytime soon.

What is Coffee?

The word "coffee" can either refer to the coffee plant, the coffee bean, or the drink that is made from this bean. However, most of the time, this term is used to refer to the drink.

Coffee is made by first harvesting the beans of the coffee plant. From there, the beans are dried, processed, and roasted to the perfect temperature, to create different roasting strengths and flavors. These beans are then brewed in hot water to create the beverage that we all know and love.

There's a lot more to coffee than simply that cup you reach for every morning. In this book, you'll learn everything you've ever wanted to know about where coffee comes from, how it's made, and what you can do with the beans once you buy them.

Brew like a barista.

A barista is a person who works at a coffee house. He or she is a coffee-making specialist, who prepares and serves coffee beverages. This job title started initially in Italy where the first espresso machine was developed. Every machine required a specialist operator, a very skilled person who could meet the standards of Italian Espresso National Institute. This machine was created for the purpose of serving coffee to people in a coffee café. The job description would call for an espresso machine operator and bartender. Therefore, the espresso operator got the name "barista," which in Italian means bartender. A barista's job is to operate a commercial espresso machine or manually make and serve coffee drinks. Espresso is a very tricky drink to make and requires much skill and practice.

The major ingredient in a recipe is the devotion, love, and passion for making it. This is the reason that almost every barista has a love for the art of coffee making. They devote themselves to making drinks that people love. They are always ready to surprise their customers with a mesmerizing taste and a beautiful foam art design.

The basic prerequisite for being a barista is having the knowledge of the principles of coffee-making machines and the adequate skills to handle those machines. A real barista knows the combination and proportions of espresso to make the perfect drink as asked from him. He must know how to carefully grind the coffee beans and how to manage the pressure and temperature of the coffee machine. He should be aware of the degree at which coffee beans should be roasted and the intrinsic taste of coffee that comes from various parts of the world.

Baristas are basically artists. They came up with the idea of drawing shapes and figures on milk foam that is now known as latte art. They have an imaginative approach to coffee-making.

Chapter 2: The Benefits of Coffee

Coffee is amongst the most popular drinks in the world. You are likely to find coffee in every household. A lot of research carried out on coffee reveals that it has many nutrients that benefit the body. Such include antioxidants, vitamin B-2, potassium, magnesium, and vitamin B-3. These nutrients help the body in warding off diseases like liver disease, inflammatory bowel disease, and cardiovascular disease. Here are some of the key benefits that you get from drinking coffee.

Improved cognitive function, concentration and focus

Most students prefer consuming coffee when reading for their exams because they know it will boost their focus and concentration. The caffeine in the coffee stimulates the brain and makes it function efficiently. Coffee is also famously drunk in the mornings; as some people believe they need coffee to jumpstart their minds.

Coffee enhances your memory

Research shows that people, who drink more than three cups of coffee a day, have a lower risk of developing dementia or Alzheimer's when they are older.

Boosts energy

Caffeine is a psychoactive substance that rejuvenates your body. When you are tired but you still have some work to finish, drinking coffee will act as a turbo to boost you a little while longer.

Good for your heart

Coffee contains the phytochemicals, which act as anti-inflammatory. Research also shows that most heart diseases are a result of inflammatory conditions such as atherosclerotic blockages.

Fights cancer

Coffee is rich in nutrients and minerals that help fight cancer. Such include chlorogenic acid, cafestol, quinic acid, kahweol, riboflavin, and caffeine. Vitamins, phytochemicals, and antioxidants play a crucial role in protecting the body. Not only does coffee help in fighting cancer, it is also helpful in prevention and reducing the risk of having it.

Reduces danger of getting type 2 diabetes

As we already know, coffee contains antioxidants. The antioxidants' responsibility is to mop up all reactive molecules in the body before they start destroying sensitive tissues such as linings of the blood vessels. Coffee's main antioxidant is chlorogenic acid. It inhibits glucose absorption and aids in the balancing of insulin levels.

Reduced risk of Parkinson's disease

Similar to Alzheimer's disease, Parkinson's is a degenerative condition caused by a lack of dopamine in the brain due to dead neurons. Parkinson's disease has no known cure. Research shows that regular consumption of coffee lowers the risk of developing the disease, thanks to the caffeine in it.

Weight loss

Coffee promotes the burning of fat

Caffeine causes an increased secretion of the adrenaline hormone. The epinephrine then triggers the release of fats in the body. The body burns fats to produce energy, which explains why you get more active after drinking coffee. Besides burning fats, it also helps lower the risk of diabetes and obesity.

Coffee Suppresses appetite

Coffee reduces the craving to eat as well as hunger pangs.

Caffeine Energy

Coffee makes the body more active due to the increased production of adrenaline. Drink a cup of coffee before you do some exercises. It will give you extra energy to burn more calories.

Other benefits of coffee include:

- Enhances mood

- Fights depression
- Helps with muscle repair
- Reduces inflammation
- Acts as a pain suppressant

Health benefits summary

Coffee alone could be the solution to many of the health problems the world is facing today. However, too much of a good thing can still be harmful to your body. Regulate your intake to live a happy and healthier life

Chapter 3: Types of Beans

Even though there are hundreds of plantations and coffee farms all over the world. However, there are essentially only four main types of coffee beans in commercial circulation. And really, these are the only types of beans that you need to familiarize yourself with, at the start of your coffee journey. All of these coffee beans are typically grown along the Bean Belt. The Bean Belt is an invisible horizontal line across the equator where coffee is usually grown or cultivated due to favorable climates and weather conditions.

Arabica

If you've had your fair share of coffee in the past, then you will probably be familiar with this word. The Arabica coffee bean accounts for more than 60% of the coffee produced around the world. Typically, Arabica beans are grown on farms in high altitudes. These are the areas that have a consistent share of rainfall and bountiful shade, to make sure the plants stay healthy and protected. One of the reasons why Arabica beans are so widely produced is that, they tend to be the easiest to maintain and cared for. They are relatively small and aren't very difficult to prune. The smaller size of the trees also makes it easier for farmers to harvest the coffee cherries.

However, out of all the types of coffee beans, Arabica beans are also the most delicate. While the trees are easy to maintain due to their size, the Arabica plant is prone to disease

and infestation because their environment easily influences them. It takes particular skill and attention to care for an Arabica bush. It’s also crucial for Arabica plants to be grown in environments conducive to their development. If they are grown in areas with harmful climates, it can be next to impossible for a farmer to maintain them.

Considering the popularity of Arabica beans, they are often grown in enormous quantities to cater to demands. With this kind of mass production, however, it can be very easy for disaster to strike. When Arabica plants are grown in huge groups, they are more susceptible to severe disease outbreaks, which potentially can compromise the entire farm. If just one Arabica plant gets infected, there's a good chance a large section of the crop will have to be discarded.

Typically, the best kind of Arabica beans has a very bright body and don’t look dark or burnt. They also carry a satisfying amount of acidity. There should be enough acid present to add complexity to the coffee flavor, but it shouldn’t be overpowering. Also, Arabica beans should typically allow a multitude of flavors and notes to come out whenever inhaled or tasted. Arabica beans usually shine on the front part of the palate, where sweetness and salinity are the strongest. For best results, purchase Arabica beans that are full-bodied and not overly acidic.

Remember that Arabica beans lose much of their flavor whenever they're served cold or with artificial sweeteners and dairy. The best way to enhance the characteristics of the bean is to serve it hot via pour-over or filtered technique of brewing.

Robusta

Next to Arabica, when it comes to popularity, are Robusta coffee beans. It’s also very likely that you’ve been exposed to Robusta beans if you are a first- or second-wave coffee drinker. As its name suggests, Robusta coffee beans are a lot stronger and less delicate when compared to Arabica beans. Robusta plants don’t need very much care and attention, relative to other types of beans, as they are very tolerant of various environments and climates. They also have a resilient immune system, which means that they aren’t susceptible to coffee plant diseases. While a Robusta plant can typically survive in a variety of environments, it’s at its strongest in farmlands with hot climates and minimal rainfall.

Also, as its name would suggest, Robusta coffee beans have an intense flavor because they carry a higher caffeine content compared to Arabica beans. The caffeine within the plant is responsible for its healthy immune system. It’s the caffeine that acts as an antidote to many coffee-fighting diseases.

Usually, Robusta coffee is best tasted at the back of the palate, where the bitter taste receptors are most dominant. Robusta coffee has a more substantial body; you will feel

more texture when you taste the coffee. Ideally, the best quality Robusta beans are those with smooth textures and low acidity. They should also have some subtle notes of dark chocolate. For home brewing, it's best to buy Robusta beans that have specific information on where the beans originated. There are plenty of coffee farmers around the world who will take advantage of the fact that Robusta beans are easy to produce in large quantities. With this, they might compromise detail-oriented farming practices for the sake of churning out more beans for commercial sale. Make sure you avoid becoming a victim of these mass-market beans. Usually, inferior Robusta beans will have a rubbery taste and an underwhelming aroma.

Due to the dense body of a Robusta coffee, it would serve as a perfect base for people who like to add cream or sweeteners to their coffee beverages. Typically, due to the strength of the Robusta coffee bean, their flavors will still shine through despite the added ingredients.

Liberica

Now, we're delving deeper into the lesser-known coffee varieties. The Liberica coffee bean is not one you would be able to find just by walking into a random coffee shop. However, these beans still hold a significant spot in the long and rich history of world coffee.

Back in 1890, the coffee industry faced significant challenges, as nearly 90% of the Arabica stock in the world was depleted due to coffee rust outbreaks. However, the demand for coffee was just as vital as ever. So, farmers and coffee producers scrambled to find a solution to this crisis, and this is where the Liberica plant comes in. The Philippines, which was under Spanish-American rule at the time, was the first to experiment with Liberica species for coffee production. During this period, the economy of the Philippines increased significantly, as it became the only coffee supplier in the world.

However, in an effort to acquire independence and emancipation from the United States, a revolution broke out among the country's citizens. As an act of retaliation, the United States decided to cut off its supplies to the archipelago—including coffee so, Liberica would eventually die out, until its resurgence in 1995. Conservationists in the Philippines tried to salvage whatever remaining plants they could get their hands on. They relocated the Liberica plants to regions of the country that were more conducive to the plant's growth and development. However, Liberica wouldn't bring the Philippine coffee production status back to the glory days, as Arabica had made a resurgence and was once again the most popular coffee in the world. These days, it's quite hard to find a good cup of Liberica coffee, even in the Philippines.

Liberica beans tend to be much larger in size compared to Arabica and Robusta beans. Also, they don't have the same kind of symmetry that the other beans have. In fact, this is the only variety of coffee to have such an unusual and irregular shape. Liberica beans are known to create a very distinct aroma that is rich in floral and fruity notes. It also offers a full-body with smoky notes like aged whiskey. Many who have tried Liberica coffee will often say that it's unlike any other coffee that they've sampled due to these "smoky" and "woody" notes. Whiskey lovers would likely be particularly fond of this coffee variation, more than others.

Excelsa

Excelsa beans are considered to be a genus of the Liberica family. However, people who have tasted both coffee variations would be able to tell the difference between both beans. The only reason Excelsa became reclassified as a member of the Liberica family was that, it shares a similar almond-like shape with the Liberica bean. Also, it grows on large 20- to 30-foot trees, just like the Liberica.

Typically, Excelsa can only be found in Southeast Asia and makes up just around 7% of the world's coffee trade. Usually, it's incorporated into blends to add an extra layer of depth and complexity to a cup. Excelsa is described as having a tart and fruity flavor, much like an Arabica; though, it also carries some heavy dark and robust notes like the Robusta. It's like the median between the two popular coffee variants. The complexity in its flavors is what makes it so appealing and sought-after by enthusiasts around the world.

Chapter 4: The History and Discovery of Coffee

Each sip of coffee makes you a part of the long history of coffee. Knowing how the beans end up into that rich cup of coffee goodness would also enable you to have a deeper appreciation of its aroma, flavor, sensation, and benefits beyond taste.

The history of coffee is a long but entertaining story. There are several legends of its discovery as well as intriguing tales of how the bean journeyed around the world, was smuggled out of a nation, was banned severally by strict nations, and how it has changed the fortunes of many countries across the globe.

There are several legends of where this little bean got its start, and historians are yet to agree on a specific account. However, none of these legends are as popular as the ones from Ethiopia and Yemen.

Ethiopian coffee history

Many believe that the history of coffee can be traced to Africa, where it was discovered by an Ethiopian goat herder.

Legend has it that a goat herder from Kaffa named Kaldi, who lived on the Ethiopian plateau way back in the 9th century, discovered both the plant and its beverage stimulants in a single day. One day, Kaldi noticed that his goats were unusually energetic after eating some berries from a bush, and this made it hard for them to fall asleep as they were bleating loudly and jumping around – almost as though they were dancing. This definitely wasn't normal.

Puzzled by the excitement of the goats, Kaldi tried the bright red berries for himself, and he noticed the energizing effects on him. This led him to present his discovery to a local monk who made a drink with the magic fruit and was amazed that he could stay awake all night to pray after consuming the drink. The monk then shared his findings with other monks, and this led to the gradual rise in popularity of coffee.

Another account suggests that the monk doubted the claims, calling the berries "the devil's work." So he threw them into a nearby fire, which resulted in a wonderful aroma that drifted through the air. Shortly after, the now roasted beans were retrieved from the fire, ground up, and was boiled to produce a drink. And that was how the first cup of coffee was produced!

Yemen coffee history

While there are several claims that coffee originated from Yemen, only two of these accounts are given some consideration.

According to one of the legends, the Yemenite Sufi Ghothul Akbar Noooruddin Abu al-Hassan al-Shadhili was on a journey when he spotted birds energetically flying over his head. He got tired and decided to rest for a while before he continued, and then he saw some jettisoned berries. When he tasted them, he noticed that he became unusually alert and was ready to resume his journey in no time.

The second popular origin myth of the beverage involved a certain Sheik Omar, a mentee of Sheik Abou'l Hassan, who was exiled for breaking a moral code. While in a desert close to the mountain of Ousab, he found a tree of red berries and decided to eat them to quench his pangs of hunger.

However, he was unable to enjoy the fruits because they were too bitter, so he threw them into the fire, whence the unmistakable aroma of the bean spread all around. He then collected the roasted beans and boiled them in a bid to soften them. When he noticed the delectable aroma from the increasingly brown liquid, he decided to take a sip of it to see if it tasted well.

Upon noticing the invigorating effects of the drink, he shared his tale with others from his hometown in Mocha, and he was celebrated for the discovery. His exile was lifted and he was allowed to return home again.

It has also been used for many purposes ranging from spiritual intoxicant to erotic stimulant and more. Are you ready to travel through time and continents to know how your favorite beverage came about?

Now that we know the history about the discovery of coffee let's travel the route of coffee: from bean to cup.

Chapter 5: Roasting Coffee

We discussed in the earlier section the various types of beans. It doesn't end there. Coffee beans need roasting. During the early years of coffee, the beans were eaten raw, boiled, or made into energy snacks. We should thank the Arabs for discovering the roasting method in the 13th century.

Roasting is an important step in developing the flavors of the coffee bean. Coffee roasting is the process by which coffee is transformed from its natural state to one that can be used for brewing and drinking. When the beans first come out of processing, they'll be soft and green—not at all the hard-shelled brown beans, you're likely accustomed to. These green beans would not grind the way roasted beans do; even if you did manage to get them ground up, their taste in a brewed cup will be flat, thin, and vegetal, more similar to green tea than normal coffee, and not especially appetizing either way.

During the roasting procedure, they turn from light brown to dark brown, then to almost black in color. At 400 degrees F, the beans start to roast and their chemistry begins to change. As the temperature reaches 450 degrees F to 500 degrees F, the beans lose their acidity and caffeine. As a result, they acquire more body and heavier texture. As they are roasted darker and darker in color, reaching the point of turning black, natural oils are released and come to the surface. The longer the bean is roasted the more oil is produced. Therefore, lighter roasted coffee beans tend to be less oily than their darker roasted counterparts. Beyond this point or at higher heat levels, the beans burn, dry, and lose taste, flavor, and oil altogether.

The good thing is that you need not do this roasting process, as there are trusted, specialized and highly-skilled roastmasters who do this for coffee fans. You can try roasting coffee at home but it requires exact science to roast the beans to perfection. Therefore, you need to study this well, and perhaps read extensively or train under a roastmaster, otherwise you run the risk of burning and wasting quality beans.

Roasting Temperature

There are two types of heat used in coffee roasting: endothermic and exothermic. Endothermic heat means that the heat comes from an outside source and surrounds the coffee bean, warming it up and cooking it from the outside to the inside. This step is required to begin the roasting process, so as to help the bean reach the right color and roasting level, in order to achieve the flavor the roaster is looking for. This type of heat continues until the temperature in the roaster reaches about 175 degrees Celsius, or 347 degrees Fahrenheit.

Once this temperature is reached, the coffee beans are then switched to an exothermic cooking process. This means that the beans themselves give off the heat they have absorbed, which causes them to more or less roast each other. At this time, the roaster will have to carefully, monitor the cooking process to ensure the beans don't get too hot or cool down too much to reach the right flavor and roasting level.

Both types of heat involved in coffee roasting represent a precise process that can easily be thrown off, if the temperature ranges get out of control. This is just one of the reasons why coffee roasting is such a difficult skill to master and why it takes a lot of practice to learn.

More happens in the coffee bean during roasting than just a change in color. The roasting process caramelizes the sugars within the bean and allows the oils trapped within the bean's cells to migrate to the surface, releasing all the coffee's notes and flavors. It also alters the acidity and caffeine content of the beans, both of which are at their highest level in the green form and get gradually lower as the roast darkens. The bean also undergoes structural changes as a result of the roasting process, expanding to about twice their original diameter but also losing 1-3 ounces of weight per pound, translating to a significant reduction in density.

People have been roasting coffee before drinking it since the 15th century. The very first coffee roasting implements were invented in the Ottoman Empire and consisted of thin, perforated pans made of metal or porcelain. These pans were held over a flame or a brazier of hot coals and the beans was stirred with a spoon while they roasted. Only a small amount of beans could be roasted at once using these devices. Further innovation to expand the capacity didn't come about until the mid-17th century, when the first cylinder roasters were used in Egypt.

You'll hear a lot of different terms applied to different qualities of coffee—all of which are affected by the roasting process in some way. Acidity in coffee is different from a sour taste; it's more of a feeling, described as "snappiness" or "brightness" when it's sensed on the edges of the tongue. While some people prefer mellower coffees, some acidity is necessary to prevent the beverage from tasting dull or flat. The body of a coffee

is another description of its feel. It refers to the density of the coffee and what sensations it elicits on your tongue. You'll hear it being described with words like velvety, creamy, or sharp. All of these qualities are inherent in the bean to some extent but can be finessed through roasting.

Roasting also affects the aroma, balance, and finish of a coffee. Aroma isn't just about how it smells. Many of the most popular notes in coffee are in fact aromas instead of tastes, including most floral or fruity notes. The finish is the taste and sensation left in your mouth after you swallow; this can include lingering flavor notes or a lingering body. The balance describes how the various other aspects of the coffee relate and is a good overall indicator of a coffee's quality.

When buying roasted coffee, you should be familiar with roast lexicon. Terminologies vary per country, but there are typically 3 types or levels of roasts.

Light Roast

This is also known as mild, blond, or American roast. Light in color, it has mild and sweet flavor.

As you may have already guessed, lightly roasted beans are the ones that spend the least amount of time in a roaster. As a general rule of thumb, light-roasted beans should have an internal temperature no less than 356 degrees F and no more than 401 degrees F when heated. Anything hotter than that, and it would be considered a medium roast. When beans are heated in a roaster, they will eventually crack after attaining a specific internal temperature. Typically, light-roast beans are taken out of the roaster immediately, following the beginning of the first crack phase. These beans show minimal moisture on the surface because the oils typically don't emerge at such low temperatures.

The longer a bean stays in a roaster, the more the heat extracts the acidity and the caffeine from inside. So this means that light-roasted coffee beans contain more caffeine and acid than other longer roasted beans. Due to their high acid content, light-roast beans have a very distinct flavor profile resembling tartness or sometimes slightly sour. It's not uncommon for citrus or lemon notes to really shine through in a light-roast bean.

Medium Roast

Also known as regular, breakfast, or morning roast, it has fuller body and less acidity.

Medium-roast coffee beans are roasted until their internal temperature reaches 410 degrees F to 428 degrees F. If you recall, light-roast beans are taken out of the roaster just after the first crack takes place. The medium roast allows the beans to stay in the roaster a bit longer once the first crack stage has begun. However, they are removed from the

roaster just before the second crack takes place. Due to the longer and hotter roast, these beans tend to have a more intense body and lower acidity than light-roast beans.

Typically, the average coffee drinker is going to be quite familiar with a medium-roast bean. The medium roast, as its name suggests, offers the perfect balance of flavors. It has a decent amount of acidity while also carrying a reasonable amount of body. Medium blends are often the go-to roasting profile for somebody who doesn't want to spend much time contemplating which coffee they'd like to drink as it tends to have a very conservative gradient of tasting notes.

Medium-Dark Roast

Beans which reach a level of medium-dark roast require internal temperatures between 437 degrees F and 446 degrees F. Typically, the beans are taken out of the oven right in the middle of the second crack, or immediately after it occurs. With this kind of roasting profile, the beans will also start to excrete some of their oils onto the surface. The high temperatures force the acidity and coffee oil out of the beans.

Since higher levels of acids have been extracted out of the beans, they tend to carry less of the fruity and tart flavors. They have a deeper and fuller flavor profile. They are heavy-bodied and are more suitable for people who are looking for darker and chocolateier flavors.

Dark Roast

Dark brown to almost black in color, these roasted beans are oily and rich in flavor. Usual types include French roast and Espresso roast. Dark Espresso roast is nearly black and given its longer roasting time, has less caffeine versus other roasts.

Contrary to popular belief, dark-roast coffee doesn't have more caffeine in it. A lot of people will associate dark roasts as being the strongest coffee beans because of their robust and full-bodied flavors. However, the truth is that more caffeine and acidity are released from a dark-roast bean than any other variation. The dark-roast beans should reach an internal temperature of 464 degrees F to 482 degrees F. Once they're taken out of the roaster, the beans should have a high-gloss shine on its surface as a result of the oils excreted from inside. Typically, you wouldn't generally be able to taste any of their original flavors because a large portion of them get burned out in the heating process.

Due to the longer roasting time for dark roasts, they tend to have sweeter and more chocolaty flavors. It's because the sugars in the coffee beans are allowed more time to caramelize. Also, the longer roasting process makes for a fuller and more in-depth body on these dark-roast beans. These beans also typically, have a shorter and more subtle

finish due to the lowest level of acid among all the roasting variations. Dark roasts are particularly popular in European countries such as Italy and France.

Aside from roasts, there are also other types of coffee beans: decaffeinated and flavored. Let us briefly look at how they are manufactured.

Decaffeinated Coffee or Decaf

Caffeine naturally occurs in coffee, except for the newly-discovered caffeine-free coffee bean species Charrieriana. Decaffeination is the process of taking out the caffeine in coffee. Coffee beans are decaffeinated before roasting. There are many methods of decaffeination but in general, water is used to wash away caffeine and to speed up the process, chemicals such as methylene chloride and activated charcoal are used. The trick is to retain its natural flavor and chemicals, so that coffee drinkers would still enjoy coffee sans caffeine kick. Note though that decaf is not entirely free of caffeine. Most decaf coffee removes 97% of the caffeine leaving around 3% of the caffeine.

Flavored Coffee

Some people like to flavor their coffee with nuts, fruits, spices and herbs. Some do this during or after brewing. Another option is to flavor the beans themselves. This is usually done during roasting. As beans cool down, flavoring can be added, such as hazelnut, chocolate, cinnamon, amaretto, butterscotch, caramel, mint, and raspberry, among others. Flavored coffee has been notorious in the past for using flavors to mask inferior coffee beans. Nowadays, more subtle and sophistical flavored coffee beans are available, using high quality beans and flavoring.

As you explore the different types and roasts of beans, feel free to mix and match to create your own blend. Perhaps you would find decaffeinated medium roast hazelnut-infused Arabica a nice option to cap the day and lull you to sleep at night, while having 50% light roast and 50% dark roast as your go-to drink in the morning.

Purchasing a Roaster

Buying a coffee roaster can be a beneficial way to start roasting your beans at home. However, knowing which roaster to pick may be challenging. Here are a few tips to keep in mind when choosing a roaster for your home use:

- Consider the speed of the roaster. If you need to get the job done fast, you'll want to pick a roaster that works faster than others.

- Consider whether or not the roaster is meant for beginners. Some are harder to use than others. Choose one that doesn't have a lot of complicated features to make it easier to learn how to work with it.

- Consider how much customization you want. Some roasters allow you to be very precise with custom settings, while others only allow you to choose between light, medium, and dark roasts.

- Consider the amount of beans you want to roast at a given time. You may want to work in small batches so your beans don't become stale before you can brew them, or you may be looking for a large-batch roaster that can handle a lot at once. In general, coffee beans start losing their freshness almost as soon as they're done roasting. Standard advice is to roast and use only as many beans as you will likely consume in a two-week period. This gives you the freshest coffee for maximum enjoyment.

Chapter 6: Grinding Coffee

If there is one phase of the brewing process where more damage can be done to the bean's flavors than any other, it's the grinding stage. Grinding at the wrong time or using the wrong grain size for the brew method, can obscure or even eliminate some of the best flavors of the beans.

To understand why, it requires some knowledge of where coffee's flavor comes from, what we think of as simply something's "flavor" is actually a combination of both its taste and its aroma. Think about how different things taste when you have a stuffy nose. A lot of flavors that we assume come from our tongues—including many fruity flavors, which are big aspects of coffee—actually come from our noses.

When it comes to coffee, the actual "taste" of it comes from non-volatile compounds like carbohydrates, caffeine, and certain acids. These bring flavors you'd describe as roasted or bitter, like nut or chocolate notes, and also contribute a lot to the coffee's texture and body. The "aroma," meanwhile, comes from a combination of volatile chemicals like alcohols and esters and provides many of the most desired flavors in the cup.

These volatile compounds start to escape from the bean once it's roasted. Most coffee beans hit their peak freshness around 48 hours after roasting. They'll retain enough of these compounds to still be considered fresh up to around two weeks after the roast date, but after that, they'll begin to taste flat and stale. Exposure to the open air increases the

rate of flavor loss; storing your beans in an airtight container will help to slow it by limiting the oxidation of the bean.

Grinding the coffee does the opposite. When the beans are ground, their surface area increases dramatically, and the physical structures that were trapping gasses and other volatile compounds are shattered. Within 15 minutes of grinding, up to half of the coffee's aroma is lost. The single most important thing you can do to improve your home-brewed cup is to grind your coffee at home immediately before brewing it. If you've been buying pre-ground coffee, making this simple switch will have an instant impact, bringing a brightness and complexity to the finished cup you might not even have realized was missing before.

There is an incredibly wide array of coffee grinders out there. They can cost anywhere from ten bucks to a couple hundred dollars and can generally be broken down into two categories based on the mechanism used to grind the beans: burr grinders and blade grinders.

Burr grinders

The burr mill or burr grinder is not a tool unique to coffee. It is used to describe any grinder which uses two rotating abrasive surfaces to grind food. The traditional design of a burr mill uses a hand crank, which is serviceable if you're only grinding a few teaspoons of spice for a recipe but far more tedious when you're grinding several ounces worth of coffee. While you can find manual coffee grinders, the majority of burr grinders are at the very least electric, with higher-end models offering various degrees of automation.

The burrs in a coffee grinder are typically steel discs with diagonal ridges along the facing edges. They can be cylindrical (where the two burrs are concentric circles) or conical (where the center burr is cone-shaped and the other one surrounds it). If you take the hopper off of a burr grinder and look down inside it, you'll be able to see what style of burr it uses. Adjusting the grind setting changes the distance between the burrs, and as a result changes the size of the particles coming out the other side.

The consistency of the grind is the main advantage with burr grinders. The beans are crushed between the burrs and then sent down a chute into some kind of catch or receptacle and since all the pieces pass through the same sized space for roughly the same amount of time, they all come out to be very close to the same size and shape. You can also make very fine and accurate adjustments with a burr grinder. Putting it on a certain setting will give you the same grind size every single time you use it, with no guessing.

The main disadvantage of a burr grinder is the cost. You should expect to spend between $50 and $100 for a dependable burr grinder for most home coffee brewing. If you're

looking for a grinder with the precision to brew quality espresso, they can cost $200 or more. They are also significantly larger and heavier than most blade grinders and can be more complicated to maintain and repair. If you're looking to upgrade your coffee drinking experience, however, upgrading from a blade to a burr grinder will undeniably improve the taste of your cup.

Blade grinders

This is the more common style of grinder in most American households. They're typically cylindrical, as opposed to the hourglass design of the burr grinder. The coffee beans are placed into a chamber with a pair of propeller-like blades that rotate at high speed when activated; the degree of the grind is determined by how long you run the blades.

As opposed to the burr grinder, which crushes the beans, the blade grinder slices them as it spins around; going over the same pieces of beans again and again until they're the size you want them. This makes it harder to achieve consistency both within each grind and from one to the next. You can help the beans make more even contact with the blades by gently shaking it while grinding but even still you'll have a lot of size variation and it's almost impossible to make fine adjustments or achieve specific grinds. The blades also generate a significant amount of kinetic energy as they slice through the beans, which can start to preemptively heat the oils in the coffee, causing the grinds to clump and preemptively releasing some of the volatile aromatic compounds. Using short pulses instead of one long grind can help slow this but at a certain grind level, it's hard to avoid.

Blade grinders have their flaws—but they're also much more affordable than burr grinders. You can get a serviceable one for as little as $10. They're also extremely easy to use and clean, plus they also take up much less space in your kitchen. For pure taste, a burr grinder is decidedly superior but having a blade grinder at home will still be a significant improvement over buying store-ground coffee. If you are using a blade grinder, you'll likely be best served by the more forgiving brewing methods, like drip and immersion brewing.

Coffee beans reach their peak flavor 4 to 7 days after roasting, but you can store roasted beans for months. It is best to buy whole bean coffee, as ground coffee tends to lose flavor and aroma faster. Hence, coffee enthusiasts often have coffee grinder at home so that they brew freshly-ground coffee every time. If you prefer ground coffee, make sure that you consume it within 7 days. Whichever the case, it is still wise to learn about coffee grinds, as there are specific grind types suited for particular coffee preparations. There are 4 types of coffee grinds.

Coarse Grind

Larger or coarser pieces of coffee are suitable for preparations that require longer water steeping such as percolator and cold brew. A coarse grind is the maximum level of coarseness that you should use to brew your coffee beans. When you employ a coarse grind, the coffee beans should have the same consistency as kosher salt. There should still be some very distinct and relatively chunky bits of coffee beans. This kind of grind size is best for cold brew, French press, percolator, and duo coffee steeper.

Medium Grind

This grind is suitable for water dripping preparations such as filter method and electric drip coffeemakers with flat-bottomed filter baskets. For the medium grind size, there should be visible chunks, like the coarse grind. However, they would more closely resemble the size of sand than kosher salt. It's almost to the level of fine, but it should still have a gritty texture with visible flakes.

Fine Grind

This is often used for flip drips and manual filters, and can also be used for electric drip coffee makers with cone-shaped filter baskets or paper cone filters such as Krups and Melitta. For the fine grind size, you are looking for a much smoother surface texture as compared to medium and coarse grinds. If you need a reference point, then regular table salt would be a good one. In fact, it could even be a little bit finer than most table salt you encounter. Sometimes, it can also be used for espresso variations as well.

Extra-Fine Grind

This powder-fine coffee grind is perfect for espresso that requires high pressured water to run through tightly-packed coffee grinds. It is also used in Turkish coffee.

These are just the general terms to describe how coarse or how fine coffee beans can be. Coffee roasters often have grinding machines specific to the coffee preparation you have in mind. Don't be surprised and baffled if they ask you if the coffee grind you need is for French press, cone drip, flat-bottomed drip, moka pot, percolator, or espresso machine. To avoid being clueless, read the next section on different types and equipment of coffee brewing.

Do not be limited by the grind-preparation matching. Feel free to use fine or extra-fine grinds for other methods such as the regular electric coffeemaker, if you don't mind coffee sediments.

Chapter 7: Brewing Coffee

As we said before, brewing coffee is both a science and an art. The basic concept is simple: put ground coffee beans into contact with water, which will then extract compounds from the beans that imbue the water with the flavor elements we know as brewed coffee. The artistry comes into play in the details. The size of the grind, the length of the brew and the method of extraction will all play a part in which flavor notes are emphasized in the final cup.

The coffee brewing process can be broken down into three general stages. The first is the wetting, when the grounds are saturated, releasing trapped carbon dioxide and making the coffee bubble up; this stage is also referred to as the "bloom." The second is the dissolution, when the dissolvable solids in the coffee are extracted. Finally, there's the diffusion, when these dissolved solids spread outward into the remainder of the water. The dissolution and the diffusion stages are often lumped together under the umbrella term "extraction."

The degree of the extraction is primarily determined by the relationship between two factors: the size of the grind and the contact time between the grinds and the water. The shorter the contact time, the more finely the coffee should be ground to reach the same level of extraction. This is why fast brewing methods like espresso, use a very fine grind, while longer processes like French press or cold brew use a coarse grind.

The main principle you want to keep in mind when you're brewing is to keep the best and leave the rest. The ultimate goal is to extract all the flavor compounds and oils containing the flavors you want in your cup and avoid extracting the elements you don't. While there are some notes that are generally considered to be more desirable than others, which flavors are desirable is a matter of your personal taste. Beyond this, there are a few general tips you can apply to your coffee brewing to get a consistently good flavor, whatever notes you're looking for:

Keep your equipment clean.

Dirty equipment can give your coffee a strange aftertaste. The oils in coffee do eventually go bad, and if they're allowed to sit for too long, this gives your brewed coffee stale or even rancid notes. This applies to your brewer, of course, but also makes sure you're keeping your grinder clean, especially if you use a burr grinder, which is known to trap small coffee particles.

Use good water.

The beverage that ends up in your cup is between 98% and 99% water. If this water has a lot of sediment or an odd taste, this will carry through into the final brew. Filtered water is best. Naturally, soft water will give you the best brew, but artificially softened water will yield the worst, giving even the best beans a flat taste. Make sure the water is cold when you put it in the kettle or reservoir to heat it; water that has been pre-heated or has gone through the water heater will have a similar flat, stale taste to hard water.

Brew the right amount.

This applies firstly to the ratio of water to coffee, which needs to be correct for the brewing level to get the best taste in your cup. It also applies to how much total coffee you brew, however, you want to strive to brew just as much as you want to drink, just before you want to drink it. Coffee that cools and is re-heated will lose a lot of its flavor, while coffee that's allowed to sit on the "keep warm" burner will start to pick up burnt, carbon notes the longer it's left heating, destroying whatever good flavors you'd had in it. This is why it is important to use a scale and weigh out the amount of beans and water you use to brew your coffee every time.

Use good beans.

Certain brewing methods may be better at bringing out certain flavors than others, but no brewing method will be able to add notes to a coffee that weren't there to begin with. If the beans are stale, low-quality, or poorly roasted, the best you can hope to do with the brewing is cover up the bad tastes; you won't be able to make it any better than the potential in the beans.

Be consistent.

The same beans brewed in the same method can taste drastically different if you're not consistent with your water to coffee ratio, your grind level, and your brew time. Being consistent will let you troubleshoot the off flavors more effectively, figuring out where they came from and removing them the next time. It also makes sure that you can replicate the same flavor every time, once you find the coffee you're looking for.

Coffee accessories

The first accessory you think about when you consider brewing coffee is the coffee filter. Not all brewing methods will use these, but they're integral to brewing methods like drip, pour over, and Aeropress, and just like anything else that comes into contact with the coffee while you're brewing it, will have an impact on the ultimate flavor.

The traditional filter for both drip and pour over is made of paper. These are traditionally made out of thin, white paper, though this practice has come under criticism in recent years because of the chemicals used to bleach the paper, mainly Dioxin, which is classified as a carcinogen by the EPA. While tests conducted by the EPA showed there were no significant quantities of dioxin in coffee brewed using paper filters, for some people, risk of exposure is enough to make them seek other options.

You can find "natural" paper filters that are unbleached for all the standard filter sizes, though you may need to purchase them through online retailers instead of in your local grocery store. These natural filters have their own issues, however. They can give the coffee a distinctive, cardboard-like aftertaste, especially when the coffee itself is relatively mild and subtle. There is also some small amount of bleaching that still has to happen to meet the minimum standards for paper, so you may not be saving yourself as much exposure to chemicals as you would think.

You can also go the route of a re-usable metal mesh filter. These are a larger initial investment but will last for years, saving you money in the long run. They also cut down significantly on the amount of waste associated with brewing coffee. The small gaps in the metal mesh allow more oils and other flavor compounds to get through into the brew than a paper filter does, so the coffee brewed using these filters will have a slightly stronger, darker taste with a fuller texture, and you may need to adjust your brewing techniques accordingly.

There are two other pieces of equipment that should be considered necessities for most brewing methods: a kettle and a kitchen scale. Automatic brewers with built-in reservoirs (like espresso machines or drip machines) will not require kettles, but for the rest, you'll need some way to heat the water. If you mostly brew using French press or Aeropress, you can get any style of stovetop or electric kettle capable of heating water to boiling. If

you plan to do pour-over or Chemex brewing, though, you'll want a more specialized model known as a gooseneck kettle. These are available in both stovetop and electric versions, and though they cost a bit more on average, getting an even, consistent pour is much more difficult without one.

Regardless of your brewing method, weighing your beans is a far more accurate way to measure their quantity than using a volume measurement like a tablespoon. Coffee beans grown in different climates and elevations will naturally have different densities; these differences are furthered by the roast level. An ounce of a light-roasted Peaberry takes up less space than an ounce of an Italian roast, for example. If you don't have a kitchen scale already and want to tailor your purchase specifically to coffee, look for one that's large enough to accommodate your brewer, in terms of both its dimensions and the weight it can bear. Precision is important too. Most coffee recipes and ratios will be given in grams, and being able to weigh in tenths of a gram will give you the most accurate brew.

You may find it helpful to keep a dedicated kitchen timer for brewing, but this is increasingly less important in the era of iPhones and Alexa. While it's very important to time your brews, the source of the timer isn't important. Truly dedicated coffee connoisseurs will also keep a thermometer on hand to test the temperature of their water throughout the brewing process. A thermometer can be extremely helpful in identifying problems with the brew, but so long as you're using water that's fresh off of boiling, it will be hot enough to extract the flavors from your coffee.

Principles of Immersion and Infusion

Immersion

To brew by immersion simply means to brew coffee beans by submerging them entirely in water. If you leave them submerged long enough, they will eventually undergo an extraction process. One of the most popular methods of immersion is the French press. Most cold brew coffees produced today also undergo an immersion process. It's a popular go-to method of brewing because it's mostly a hands-off way to go about extraction. For the Aeropress, as an example, it's just a matter of submerging the beans for a couple of minutes before pressing it out into drinkable coffee.

Traditionally, most forms of immersion brewing are going to require some type of filtration system. Typically, a metal or paper filter is used. The point of the filter is to thoroughly remove the undrinkable particles of coffee from the final brew. Paper filters will also remove oils and lipids.

As the time of immersion lengthens, the compounds become increasingly saturated, and the extraction rate of the coffee slows down. It means there is less room for water to trickle its way down to the bottom of the filter. And with less room, it takes a longer time for the coffee to be extracted.

Infusion

On the flip side of the coin, there is infusion brewing. Infusion brewing is a more hands-on approach to brewing as compared to the immersion method. Through infusion, water consistently flows through a bed of ground coffee and filter. The most recognizable forms of infusion are drip brewing methods like the Kalita Wave, V60, and the Chemex. The mentioned examples are manual drips, but there are also automatic drip machines like BonaVita and Mr. Coffee.

As far as extraction is concerned, the infusion method is considered more efficient because of its controlled process. Since there's a steady flow of freshwater, saturation issues is less of a concern compared with the immersion process. So this means there's more soluble material to extract for each serving of coffee. You have a better chance of extracting all the soluble compounds from coffee through infusion.

However, the problems associated with infusion generally revolve around human error. It requires a lot of skill, technique, and expertise to be able to perform a perfect infusion.

There are several options for brewing coffee, and each one yields a unique flavor. Here are 6 pieces of equipment that you can use to brew coffee.

Drip Coffee

It can be electric or manual, with or without filter, and the filter can be cone or basket. Perhaps the most common equipment in households is the electric drip coffee filter requiring either cone or basket paper filter for easier cleaning. The machine heats the water, brews the coffee by running water through the beans, and dripping the coffee-infused liquid into a carafe, which is kept warm by a heated plate. There are even more advanced versions, called programmable drip coffee makers, that can automatically brew coffee for you every morning!

This method is convenient as you just need to load the beans and water, turn the machine on, do something else, and come back to that whiff of freshly-brewed coffee, ready to be poured and enjoyed in a cup or mug. It’s joyous to wake up to the smell of coffee in the morning prepared by a housemate or family member!

Drip brewing began with the brewing pot called biggin, way back 1780 in France. This pot has two levels. Ground coffee was placed in the upper compartment, into which hot water was poured. The water then drains or drips to the bottom compartment, with a cloth filtering the sediments. The drawback of this method was that the taste of the cloth tends to transfer to the taste of the coffee. During those days, people used cotton or old pieces of clothing, even old socks, as coffee filters. Thankfully, we have more modern equipment nowadays.

The first automatic/electric drip coffeemaker was launched by Bunn Corporation in 1963. This was used commercially, for restaurants and coffee shops. It was almost a decade later that coffeemaker became available to households, thanks to Vincent Marotta who released the first home-use automatic drip coffeemaker in 1972. It was aptly named Mr. Coffee.

Aside from electric coffee drip machines, manual dripping equipment are also available, from the simple single-serve pour overs such as Vietnamese phin filter and German brand Melitta, to the fancy Neapolitan flip drips.

Coffee Press

Also, known as cafetière or plunger pot. This method entails placing medium-ground coffee in the glass or plastic carafe, pouring hot water over the coffee, letting it steep for at least 5 minutes, then pressing the plunger to force the grounds to the bottom of the pot and, separating it from the liquid coffee drink. All french press coffee makers fall under this category.

Espresso Machine

This is often seen in coffee shops and in houses of coffee connoisseurs. There are various brands available in the market. For instance, Starbucks uses Mastrena. Espresso machines work by forcing a stream of water to run through tightly-packed, finely-ground espresso beans.

Stove-Top Espresso Pot

This is a non-electric fancy-looking espresso-maker. It is also known as moka espresso pot, the most popular brand of which is Bialetti. This equipment works by putting cold water in the bottom cylinder of the pot, putting the basket on top of this pot and putting coffee beans in the basket, screwing the pot with the top cylinder, putting it on the stove, and heating it. The machine hisses, signaling that the water is forced up to the grounds and to the upper carafe. Take it out of the heat once the hissing starts to get irregular, usually just a few seconds after the hissing starts. There are also espresso pots that can be

used on electric and induction stoves. Think of espresso pots as upside-down versions of espresso machines.

Percolator

This machine dates back to the 1940s and 1950s. It is an electric pot that heats the water, forces it up through a tube in the center, and circulates the water over the bed of coarsely-ground coffee. It is rarely used nowadays, as over-exposure to water results in over-extraction which diminishes the flavor and freshness of coffee.

Coffee Pod or Capsule Brewing Machine

This brewing system entered the coffee arena in the early 21st century. The machine processes specially-manufactured pods or capsules of coffee. You load a pod into a machine, and the machine brews it to produce a single-serve cup of coffee. Popular brands include Keurig K-Cups and Nescafé Dolce Gusto. Coffee shops also offer coffee pod machines, such as Starbucks and CBTL. They offer different variants and flavors of coffee.

In 2010 though, this method, especially K-Cups, was widely criticized due to environmental concerns regarding the disposal and non-biodegradable quality of the pods. This encouraged various brands to market biodegradable, reusable, or recyclable pods.

Sample Brewing Techniques and Equipment

You've already learned what extraction is and how this process is integral when it comes to brewing coffee. You've also read about the differences between infusion and immersion methods. In this section, we are going to have a brief overview of some of the more popular apparatus and brewing methods that are available these days.

Chapter 8: Barista Quality Coffee Brewing Recipes

Cold Brew

The cold brew that is being served on the market today is produced in a variety of different ways. However, the most recommended and popular manner of making cold brew is through a traditional immersion method. Combine cold water with a decent amount of coffee grounds and allow them to sit for a few hours. Then, strain the grounds, and you'll end up with a delicious brew. Due to the colder temperatures during extraction, cold brews tend to have low acidity and are perfect for people who want a mellower and sweeter taste profile.

Standard Recipe for Cold Brew -The Toddy System:

1. 2 liters filtered water
2. Place filter pad on the inside of the brew chamber and insert the rubber stopper in the hole from the outside to ensure easy removal after brewing is completed (Toddy Cold Brew System)
3. 12 oz. freshly ground coffee, coarse grind.
4. Add ground coffee to the filter basket and gently shake to even layer.
5. Pour the 1 liter of water gently over your grounds in a slow, even, and circular manner and gently stir to ensure all the coffee is wet. Tie the top of the filter closed using a rubber band or string like a large tea bag. Add the remaining 1 liter of water to the brew chamber.
6. Place the Toddy in the refrigerator and allow coffee to steep for 22 hours.
7. To drain, remove the rubber stopper and allow coffee to fill the glass carafe.
8. Store cold brew in your refrigerator for up to one week.
9. Wash the filter thoroughly and store submerged in a jar of water in the refrigerator until your next batch.
10. Basic cold brew drink ratio = 1 part cold brew to 1 part water. Adjust the ratio to your preference. Enjoy!

French Press

The French press is a coffee apparatus made up of three basic parts: a carafe, a plunger, and a metal filter. It also employs an immersion method of brewing.

Standard Recipe for French Press: (Medium Brew)

- **12 oz. portion**

  - Use 23 g (4 Tb) ground coffee

  - 12 oz water

- **34 oz portion**

  - Use 68 g (11 Tb) ground coffee

  - 30 oz. water

1. Boil water to 200F.
2. Weigh and grind your coffee. Use the coarse grind setting.
3. Preheat the French Press, using hot water and discard after 30 seconds.
4. Pour your pre-measured/weighed and ground coffee into the French Press. Pour your measured hot water into the beaker quickly and ensure all the coffee is wet.
5. Stir gently for 10 seconds. Place the top of the French Press onto the beaker with the plunger pulled to the top.
6. Set your timer for 3:30 minutes.
7. Remove the top and stir the coffee ground crust top-layer for a full-bodied coffee or scoop off the crust for a light-bodied roast.
8. Place the top back onto the French Press and press the plunger down completely.
9. Pour and enjoy. Leave the last 10% of coffee in the press due to excessive silt.

Aeropress

The Aeropress works similarly as the French press, except that it uses air pressure and a paper filter to separate the drinkable coffee from the strained grounds. To use an Aeropress, the apparatus is placed on top of an empty cup or mug. Then, the coffee grounds are poured inside a cylinder, along with hot water. After the extraction has taken place, an air plunger is used to push the coffee through a paper filter into the empty cup or mug under the Aeropress.

Standard Recipe for Aeropress:

- **Coffee -** 17 g
- **Grind size -** Fine
- **Water -** 240 g at 205.5F
- **Water - to - Coffee Ratio -** 14:1
- **Brew Time -** 2: 15 minutes

Method:

1. Add your measured ground coffee to the Aeropress chamber and level out the grounds by giving a gentle shake.
2. Start your timer. Add 240 g water.
3. Stir for 10 seconds.
4. Place the plunger in the Aeropress chamber and pull upwards slightly to create a vacuum effect.
5. Let the mixture sit until 1:45 minutes; then plunge for 30 seconds.

Inverted Recipe for Aeropress:

- **Coffee -** 18 g
- **Grind –** Medium fine
- **Water -** 195 g at 206F
- **Water - to - Coffee Ratio -** 13:1
- **Brew Time -** 2:05 minutes

Method:

1. Add your ground coffee to the Aeropress chamber and shake gently to level.
2. Start your timer. Add 195 g water.
3. Stir for 10 seconds.
4. Add an Aeropress paper filter to the filter cap and wet the filter. Screw on the top cap.
5. Let the mixture sit until 1:35 minutes.
6. Flip the Aeropress over onto your cup and plunge for 30 seconds.

Kalita Wave

For the final three techniques that we'll discuss in this chapter, we are going to focus on variations of the pour-over method. Essentially, pour-over coffee is a controlled extraction by infusion. Various instruments have distinct nuances about them which make them different from one another. The Kalita Wave pour-over is one of the most popular brewing methods out there. It has a flat-bottom filter that promotes even extraction while brewing and is a relatively lightweight apparatus that is easy to transport and clean. However, to brew via Kalita Wave effectively, a great deal of expertise and technique is required.

Kalita Wave Brewing Recipe:

- **Coffee -** 20 g
- **Grind -** Medium coarse
- **Water -** 200 - 205F
- **Total Water -** 375 g
- **Brew Time -** ~ 3 minutes

Method:

1. Add filter and rinse with hot water.
2. Add weighed and ground coffee to Kalita Wave. Gently shake the grounds to flatten out.
3. Place the Kalita Wave over your mug or carafe onto the scale. Zero out the scale before adding any water.
4. Start your timer. Saturate the grounds with 50 grams hot water (Water directly off the boil is ~ 200-205 F) in the first 10 seconds to allow the coffee to bloom. Stir coffee with a spoon.
5. 2nd pour at 45 seconds. Add 150-200 grams hot water in a spiral motion by 1:00 minute.
6. Pour small amounts of hot water to reach a total of 375 grams by the 2:00 minute mark. Slowly bring the water level high to achieve an even extraction.
7. Pour and enjoy!

V60

The V60 is a common choice for perfectionist brewers who obsess over the tiniest details about their brews. It has a large opening, which makes for a quicker brew. However, due to the large surface area of the beans that need to undergo extraction, the V60 requires an exact and steady hand to make sure that the extraction process is as even as possible. When done correctly, it can bring about the best notes and flavors of a coffee bean. When done incorrectly, it can be very punishing and humbling.

V60 Brewing Recipe:

- **Coffee -** 25 g
- **Grind -** Medium
- **Water -** 200 F (Or off the boil and rest 3-5 minutes)
- **Total Water -** 400 g

Method:

1. Add filter and rinse with hot water.
2. Add weighed and ground coffee to V60. Gently shake to level coffee grounds. Place V60 and carafe onto your scale. Zero out the scale before adding any water.
3. Start your timer. Pour 75 grams of hot water to saturate the grounds and allow it to bloom for 30 seconds.
4. Pour an even, slow stream into the center of the V60, about the size of a quarter, until you reach 400 grams. Allow all the water to drain.
5. Pour and enjoy!

Chemex

The Chemex pour-over apparatus has a thicker filter than the previous two mentioned on this list and means it can brew a much smoother and cleaner cup without compromising body and floral notes. Due to the thickness of the filter, you get to taste more of the sweetness from the coffee. However, the Chemex in and of itself is large and can be challenging to clean and maintain.

Chemex Brewing Recipe:

- **Coffee -** 30 g
- **Grind -** Medium
- **Water -** 200 F
- **Total Water -** 450 g

Method:

1. Fold the Chemex Filter- Fold in half, and then fold in half again. Bring the two corners together and then open the 3rd and 4th layers to create a funnel. Place the funnel inside the Chemex with the 3 layers facing the groove.
2. Put Chemex onto your scale. Add your ground coffee and gently shake to level. Zero out the scale before adding any water.
3. Pour 75 grams of hot water to wet the grounds and allow it to bloom for 45 seconds.
4. Pour hot water in a circular motion to wet all the grounds until you reach 450 grams.
5. Pour and enjoy!

Espresso

Espresso is a coffee variation that originated in Italy. To put it simply, this brewing method is one of the fastest ways to perform an extraction. In making an espresso, extremely hot water is forced under pressure through a compact batch of finely ground beans. The term *espresso* stems from the word *express*, indicating that this is a quick way to make coffee. To make espresso, a dedicated espresso machine must be used. You'll learn more about espresso in the next chapter of this book.

No brewing method is more prescriptive and exact than the espresso shot. It requires a precise technique and complicated machines. The whirs and hisses can be intimidating to the non-initiated. It is unique from the other brewing methods discussed in this book in a variety of ways—not least of which is the fact that it is almost exclusively brewed by professionals in coffee shops, and very rarely by the home hobbyist. But while you may not be ready to drop $1,000 on an espresso machine, understanding how espresso is made—and exactly what makes it different from other brewing methods—is perhaps the best way to understand the science behind coffee.

Espresso also produces a brew that's scientifically different than coffee brewed through other methods. Coffee made in a drip or pour-over method, for example, is mostly water with some dissolved solid compounds, about 1-2% of the brew by weight. Espresso, on the other hand, is what is known as a multiphasic system. It contains dissolved solids like other coffee but also contains suspended oils and other solids, which is what gives the beverage its distinctive thick texture and the cap of pale froth, known as crema, which is the hallmark of a quality espresso shot.

It should be stated that espresso is a brewing method, not a type of bean. You'll often see the term "espresso roast" applied to coffee. This means those beans have been blended and roasted with espresso in mind, but any coffee can be brewed as espresso, and indeed the current trend in the coffee industry is toward single-origin espressos over the traditional dark-roasted blend.

Read through these directions to learn how to brew an espresso shot using the most common variant of the espresso machine.

- Heat the espresso machine about a half-hour ahead of time. Take this time to pour water into the machine if needed and ensure there is a filter in place.
- Pull a shot of water to warm up the equipment and flush the nozzle.
- Remove the filter and put it on a digital food scale. Zero out the scale. Add 7 grams of ground espresso to the filter.
- Use a tamp and press the espresso down into the filter to "seal" it.

- Place the filter into the head of the espresso machine, then turn on the machine.
- If your machine is not automatic, you'll need to watch carefully. Stop the espresso shot at 20 - 25 seconds for the best results.
- Your espresso should be turning lightly blonde in color when you stop the shot. When finished, it should be dark on the bottom and have a crema on top. A crema is a short, frothy section you can see when you look at the espresso, similar to the head on beer.

Chapter 9: Focusing on Espresso

Today, espresso is commonly made in two ways; using a stovetop espresso maker or using an electric machine.

The stove-top espresso maker heats water in the lowermost chamber until it is forced up through the filter, which contains grounds of espresso roast coffee. Once the espresso reaches the top chamber, it can be conveniently poured out through the spout. A quality steel stove-top espresso maker will only take a few minutes to make a quality demitasse of espresso.

Some stove-top espresso makers also have a valve that can be used for steaming milk for cappuccinos. If your model doesn't have this value, you may use an electric device that steams milk by heating water in a chamber and forcing it through a valve by steam pressure.

If you're in the market for an electric espresso coffee, you will find that there are multiple options out there with widely ranging prices. There are also plenty of cheap ones out there that work just as well as the costly ones. The electric espresso machines have a valve for steaming milk, which makes the work easier for you.

The espresso machine you choose to buy will largely depend on your budget and your seriousness. I personally know quite a few coffee enthusiasts who are not satisfied by the cheap espresso makers and are only satisfied by powerful espresso machines.

Steaming Milk

You can skip this section if you know the proper way of steaming milk. If you're a beginner, you will need to learn how to properly steam milk using your espresso machines in order to make great cappuccinos and lattes.

Make sure you always start off with a cold pitcher (you can place it in the fridge beforehand). A stainless-steel pitcher works best for this job. Nonfat and low-fat milk are most commonly used—although regular milk can be easily steamed once you get a little practice.

Just fill the pitcher approximately one-third to one-half with the milk. The milk will expand during the process so make sure you don't fill it over half. Put the nozzle of the steamer on the surface of the milk and turn the steam pressure all the way on.

As the steamer begins to froth the milk, lower the pitcher while the milk expands, keeping the nozzle approximately 2 inch under the surface of the milk. Be cautious not to allow the milk to boil, as it may overflow or have a slightly burnt taste.

When the froth that you've produced by steaming the milk starts to rise to the surface of the pitcher, you may turn the pressure down or take the pitcher away from the steamer, as the milk is now just on the verge of boiling.

If done right, the steamed milk will contain very small bubbles throughout the liquid, and the froth on top will have a sweet or light taste to it. You might screw up the steaming process a little, the first couple of times you try it, but you will master the process if you keep at it.

Tamping

Tamping is a step unique to espresso brewing and is an important part of the technique. If you were to simply put loose grounds in the portafilter and try to brew without tamping, the water will flow through the coffee far too quickly, regardless of how finely you grind it. Applying pressure to the grinds condenses them to ensure an even extraction and prevent what's known as "channeling," where the water finds the path of least resistance through the grinds, over-extracting some areas and leaving others dry. This can still occur even after tamping if there are cracks in the puck from impacts against the portafilter but is far less likely if you have the right technique.

Espresso tamps are essentially weighted discs of metal attached to a handle. They come in a variety of diameters to match with different sizes of the portafilter. The standard size is 58 millimeters in diameter, and this is the size most tamps are designed to accommodate. You want the tamp to fit snugly down inside the brew basket without rubbing up against the sides when you press.

The ideal tamp should apply around 30 pounds of pressure to the coffee in the portafilter; you can practice on a bathroom scale to get a sense of what this feels like. Thirty pounds of pressure is a good baseline for your tamping practice, but you should feel free to adjust the pressure to suit your grind and machine. Make sure that you're tamping straight down, with even pressure applied to all areas within the basket. If your tamp is angled or uneven, the grinds in the basket will be more compressed in some areas than others, which can lead to an uneven extraction. A tamp that's too light or too heavy can also affect the brew time of your shots. If you're relatively sure that the grind is the right size, but your brew is too quick or too slow, consider changing up your tamp—less pressure to make it brew faster, and more pressure to make it brew more slowly.

Pulling shots

Many semi-automatic espresso machines will have a timer associated with each group head that you can use to track your shots; if yours doesn't, a simple kitchen timer should do the trick. Start it as soon as you press the button to begin the brew. It will normally take a few seconds for the coffee to start flowing through the spouts; this should be considered part of the brew time since the water has made contact with the coffee, and the extraction has started.

If your machine allows you to adjust the brew temperature manually, this can be a fun thing to play with as you continue to perfect your shots. Even changing the temperature by a single degree can bring out different flavors from the beans. Brewing at a lower temperature will emphasize the brighter, fruitier notes of the coffee while brewing at a higher temperature will bring out more of the dark and roasted flavors of the bean.

If you pull your shots correctly, it should have two distinct layers when it finishes brewing: a dark brown liquid underneath (the shot) and a tan-colored frothy layer of about ½ inch thick on top (the crema). This crema will dissipate within a few minutes of pulling the shot, and this is part of the reason espresso is typically enjoyed immediately after brewing. A good crema is generally accepted to be the sign of a well-pulled shot.

Chapter 10: Coffee Brewing Tips and Tricks

To become an expert in coffee brewing, you need to embrace a number of tips and tricks. Here are some tips you need to know:

- You should purchase fresh, whole bean coffee. You can do so by checking the local coffee stores in your neighborhood.
- Understand the best ways of storing the beans. You should aim at keeping the fresh beans for extended periods by storing in an airtight mason jar.
- Understand the grinding process. You need to comprehend that coffee may lose that wonderful flavor in half an hour after the grinding process. It is recommended to grind and brew immediately. Your preference will determine the grind size and the consistency.
- How do you measure your coffee? It is appropriate to always take the weight of the coffee into account instead of focusing on the volume. Always use similar coffee amounts for a particular unit of water when brewing.
- It is good to pre-infuse the grounds. Apart from pouring the grounds over the cones manually, pour hot water over the grounds to release any carbon dioxide gas remaining after roasting phase.
- Brew at appropriate temperatures. For drip coffee you need temperatures between 195 – 205 degrees Fahrenheit. Your coffee maker should pre-heated and be hot to get the best results. This so the hot water stays warm and does not transfer heat to your coffee equipment.
- Use appropriate amounts of quality water. Do not use hard water with lots of impurities or minerals since you will get dulled coffee. Avoid heavily distilled water because it produces very bitter coffee due to the lack of minerals. Use water at the center of the spectrum, and it is worth spending money on filtered water.

Tips for Drinking Coffee

Coffee with sweets

Biting coffee with sandwiches and biscuits is pleasant and tasty. We are not used to drinking it just like that, but we usually eat buns or sandwiches. Meanwhile, caffeine affects not only the central nervous system but also the intestines, strengthening peristalsis and excretion of juices in the intestines and stomach. These processes speed up food promotion in the gastrointestinal tract. As a result, the products do not have to digest and internalize, begin the process of rotting proteins and fermentation of carbohydrates.

For this reason, it is not desirable to drink coffee with any food. However, you cannot drink it on an empty stomach. It causes heartburn at first, and then can even cause a

gastric ulcer. For preventing these unwanted processes, you should always drink coffee for about one to one and a half hours after taking any food.

Coffee with additives

Most people prefer to drink coffee with different additives, which are accustomed to consider taste. Meanwhile, everything we add essentially changes the taste and properties of the beverage. For example, sugar neutralizes not only bitter taste, but also antioxidants.

Coffee with milk

Milk added to coffee, like sugar, binds antioxidants to coffee, and also significantly increases the caloric value of a coffee drink. Therefore it is desirable to drink coffee with milk only to those who do it from pure gourmet, taste considerations, not caring about a figure. It loses most of the useful properties but turns into a nutritious drink, so it restores strength after active training, for example, in a gym.

Coffee with cream

Coffee with liquid cream has a completely different effect. Fatty, rich in vitamins and other useful substances cream with coffee, are favorable for the skin. Coffee with cream keeps calcium in the body, preventing its elimination by caffeine. At the same time, caloric content does not significantly exceed the nutritional value of coffee with milk.

Coffee with coconut milk

Coconut milk is a very nutritious product. It’s rich in amino acids, vitamins, minerals, healthy fats, essential oils, and antioxidants. Coconut milk added to coffee will enhance its health properties. It’s also an excellent alternative to cow milk for people with lactose intolerance.

Coffee with lemon

Lemon can also serve as a useful additive for coffee lovers. The high content of vitamin C enhances the invigorating effect of coffee. There is a coffee drink called “Espresso Romano” that combines espresso, a twist of lemon, and lemon juice. The acidic flavor from the lemon accentuates the espresso’s sweetness without adding sugar.

Coffee with drinking water

It is widely accepted to serve coffee with pure drinking water at room temperature. It is believed that the water cleans the taste buds, contributing to a fuller perception of taste and aroma. Medical research has shown that water relieves the negative effects of coffee on the kidneys, so it is recommended to drink the same amount of drinking water after each cup of coffee.

Coffee temperature

Hot coffee best reveals its aroma and useful properties. For this reason in the east, it is served in tiny cups, and people drink it slowly, savoring every sip. Cappuccino or Latte, wrapped from above the cap of cream from cooling, and served in large cups, but necessarily in hot form. If the coffee is cold, do not preheat it. It will be another drink, unpleasant to taste.

Instant coffee

All that was said above applies to real coffee only, fresh and brewed in classical technology or a coffee machine. The chemical treatment used in the manufacture of instant coffee will not add more health. This is why it is not considered a useful drink. Of course, in the rush time of modern life, you can replace natural coffee with an instant one. However, this should be the exception, not the rule. It is much better and more useful to spend a little more time and to cook real, fragrant, and pleasant coffee from fresh coffee beans.

If you are a healthy person and you want to indulge yourself with different variants of coffee, you can safely drink it in its pure form, with milk, with cream, or even with honey. The main thing to follow: don’t go beyond your dose. If you need to drink a few cups during the day, make a break between them for at least an hour. In this case, coffee will help you to stay cheerful and in a good mood. It will improve your memory and help you concentrate on work.

Always think before you drink another cup, what it will bring to your body: benefit or harm. Don’t forget that the coffee should be high quality to avoid possible chemical impurities.

Chapter 11: Alternative Brewing Methods

The brewing methods explored in the previous chapters cover the styles most people will encounter in their café or kitchen, but they are certainly not the only options out there. Coffee preparation has a long history, one which was influenced by a wide array of cultures. As you can see even from the many brewing methods already explored, this has resulted in an impressive variety of ways to turn this bean into a beverage.

The methods explored in this chapter are some you may or may not encounter in the course of your daily life but are worth noting nonetheless because of their uniqueness or historical popularity. They're included mostly just to introduce you to the wide array of possibilities when it comes to brewing coffee, but for the more adventurous java lover, they could be fun options to either seek out in a local specialty coffee shop or to try out in your own kitchen.

Coffee siphons

Also called a vacpot or a vacuum brewer, the coffee siphon looks like how a mad scientist would choose to brew his coffee. Made of glass and heated using a butane or alcohol burner (or, in some cases, over the stovetop), the siphon uses a combination of water pressure and immersion techniques to brew the coffee. It is one of the more theatrical ways to brew coffee, and many people who use one do so for the show of it; the downside is that the equipment can be costly, hard to come by, and delicate.

To brew in a coffee siphon, you want to start by putting the water in the lower globe of the assembly. You can start it cold, but it will take a long time to get up to temperature this way, many people prefer to boil the water first, and then put it in. Put the filter and the top chamber on top of the bottom globe, making sure all the pieces are fitted snugly into place. Grind the coffee using a fine setting (#6 or cone filter) with a similar ratio to what you'd use for immersion brewing. Place the ground coffee in the filter, and then apply your heat source underneath the brewer.

As the water reaches boiling, the pressure of the steam will force it up through the coffee and into the upper chamber, where it will mingle with your grounds—a fun process to watch happen, that though, it's based in science, looks a lot like magic. Once the water starts to move into the upper chamber, start your timer. When it reaches 30 seconds, stir the coffee in a zigzag pattern with a wooden paddle or spoon, until all the coffee grinds are submerged. When it reaches one minute, remove the heat source and stir the coffee again. As the water cools, it will automatically draw down through the grounds and back into the lower globe. This process should finish when the brew is around the two-minute mark.

Coffee brewed in a siphon will have a smooth and mellow flavor, with a relatively low acid content. It's especially good for bringing out subtle or delicate notes, especially those present in naturally-processed or high-grown varieties. They tend to use a cloth filter, as opposed to the paper or metal more common in other methods, the end result of which is a very clean cup without sediment. The combination of the cloth filter with the constant water temperature and the degree of control you get over the brewing time and agitation level means many coffee experts consider siphon brewing to be the ideal method.

Percolators

Interestingly, though percolators use a similar combination of air pressure and immersion to brew the coffee, the taste of the beverage they produce is almost universally panned by the coffee-drinking community. These devices, which are also known as moka pots or stovetop espresso makers, are stainless steel, hourglass-shaped brewers that sit directly on the burner of your stove as a heat source. The problem with them is that it's very difficult to gauge or maintain the water temperature, and they often end up boiling the coffee rather than brewing it, which can lead to a bitter cup of coffee with a faintly metallic taste that's overly strong and thick.

Percolators were a popular brewing method in the first half of the twentieth century. At that time, they produced a cup that was superior in taste to the technique most people used previously, which was simply to put the ground coffee in a pot with boiling water. Percolators do produce a strong coffee aroma, but this, unfortunately, is the result of most of the volatile compounds cooking off, meaning you won't get those tastes in the cup you're drinking.

While you'll find some people who prefer the taste of percolator coffee, it's usually out of habit and familiarity more than anything; if they grew up drinking that thick, bitter brew, that's what they're looking for in their cup. For modern drinkers, however, it's best to steer clear. You can brew much better coffee much more easily with most other methods.

Turkish coffee

This method of brewing may have been one of the earliest—if not the earliest—technique applied to make a beverage out of coffee beans. It is one of the simplest brewing methods you'll find. Simply grind the coffee and place it in a pot with some water and sugar, then bring it to a boil three times. It's typically served immediately after brewing in small, handle-less cups.

Unlike most brewing methods, Turkish coffee is not filtered before serving. It is also ground very fine, even finer than espresso; if you have a burr grinder, you'll see that the

“Turkish” setting is the finest option on your machine. Most of the grinds will sink to the bottom of the cup while you’re drinking, but you should expect to get some in your mouth. There is a tradition of reading your fortune or future in the pattern of the grounds left behind after you drink the beverage, similarly to how tea leaves are read in some places.

The taste of Turkish coffee is distinctive. It is very strong and very thick, with a touch of sweetness from the sugar in the brew. Compared to familiar brewing methods, it will be similar to espresso but with even more body and a grittiness from the included grinds. It’s an acquired taste for most Western palates, but can be a fun method to play around with since it can be made without any extra equipment.

Cold Brew Coffee

Many cold brew drinkers choose strong roasts because the cold brew process tends to reduce the complexity of flavors. Others say that light roasts are preferable because they get a charcoal-like taste from darkly roasted varieties. Finding your desired bean might take some time. There are three basic varieties of roasted coffee beans: light, medium, and dark roasts. The lighter the roast, the more caffeine that lies within, if that is your standard for buying beans.

More than hot brewed coffee, the grind size of cold brew coffee is critical to the overall flavor. The rule of thumb is that the coarser the grain size, the more watery the cold brew. The terms used to describe the grind size is relative to how the grind is most often used in hot brewed coffee. Coffee grinders produce all three of the sizes of ground beans described below. A grading sieve or sifter is required to sort the ground beans into the three uniform categories. You should experiment with these three different grind sizes to see which produces the best coffee. Most companies use a coarsely ground bean similar to a French press grind because it keeps the filtration process easy and results in a less bitter tasting coffee. The coffee bean is a curious thing because of its variances in flavor, and that doesn't change when cold brewing. Everyone has a distinct palate that requires a certain flavor of bean. Experimentation is the key, and it is best to start at one end of the spectrum to find the right bean for you. Begin your investigation with a darker roasted bean and work your way to the lighter ones until you find your perfect fix. Also, make sure your beans are fresh and roasted locally for best results.

The best bean in the world won't taste good if ground incorrectly to your brewing method. The key to a good cup of cold brew is the size of the coffee particle. Many of the stores where you buy beans will also grind them for you, but when you become a coffee aficionado, you will want to be in control of the outcome. Unevenly sized bean grounds create unpredictable outcomes, making your coffee too weak, too strong, or too bitter, so you will need a good grinder that gives you consistent results. The best grinders are

conical burr grinders with multiple grind settings. High-speed motors create heat that influences the taste of the grounds and also creates static that clumps the grounds together. The best option is a gear-reduction low-speed grinder or a direct-drive low-speed grinder. Typically, you will want to make a cold brew with coarse grounds.

Water is the second key element. The quality of the water you use is important. Since the water brews with the coffee for twelve hours or more, you must consider the impact that good or bad quality water will have on the process, especially considering that cold brew has a milder flavor than hot coffee, making the water selection more critical to the overall flavor of the brew.

Immersion is important when making cold brew coffee, and there are many methods you can try at home. Before you purchase a maker or buy endless supplies to craft your brew, you can do some test runs using supplies you already own to make sure it is a flavor you find satisfactory. Ultimately, making cold brew requires no special equipment, but there are a great number of cool and handy gadgets to make the process more efficient or to enrich your cold brewing experience.

There are many ways of preparing cold brew coffee without a maker, but the most common method is the utilization of a French press or any glass container. There are also many kinds of cold brew coffee makers. Here are two methods of making cold brew coffee at home:

- In a glass container such as a mason jar, mix 12 ounces of medium to coarse coffee grounds with four cups of room-temperature water. Allow the concoction to sit in your refrigerator for at least 12 hours before filtering the mix through a coffee filter. This mixture will make 2 and 3/4 cups of coffee.

- Using a 32-ounce French press, place medium to coarse coffee grounds at the base of the pitcher and gently cover with cold water. Use 4:1 water to coffee ratio. However, do not press the plunger down until the grounds have steeped, which requires a minimum of 12 hours. Place in you refrigerator for storage. After 12 hours, gently press the plunger down until the grounds reach the bottom, and then pour to enjoy!

Tips While Making Cold Brew Coffee

- Cold brew can be strong and contains twice the amount of caffeine of hot drip coffee, so you might need to add ice, cold water, cream, or some form of milk to dilute it. Some people choose to use a 50/50 combination of cold brew to water.

- If your cold brew is not strong enough, use a higher quality bean or dark roast coffee, and let your mixture steep longer.
- Use good freshly roasted, quality coffee beans and pure water for best results.
- If you are making your cold brew extra cold by adding ice cubes, but are worried about dilution, make a batch of cold brew ice cubes. Therefore, even if you are a coffee sipper, not a guzzler, your cold brew will never lose its flavor. Use the cubes quickly, though, because they will go stale or get freezer burned if left in the freezer too long.
- Some folks prefer to "warm" their cold brew coffee. Once it has been cold brewed, it can be warmed on a cold day or iced for a hot day. The temperature that you consume it at is up to you and is another option to fine-tuning your cold brew experience.

Chapter 12: How to taste coffee

Did you know you can practice coffee tasting the same way you'd try wine tasting? Enjoying a cup of coffee can mean so much more than just guzzling it down and moving on to the next activity for the day, but it takes a little practice and know-how to get it right. When you understand the process for coffee tasting, you can learn more about your own preferences and the flavors that stand out to you with every cup. This can also be a nice way to bond with fellow coffee fans and to share your knowledge with others, too.

In this chapter, we'll walk you through the steps you need to take to enjoy a coffee tasting experience unlike any you've ever had before. You can try this with any coffee you have on hand, but you're more likely to find complexities and subtle notes among specialty coffees and those that come from whole beans. With time, you can learn to identify or at least narrow down origins of your coffee based on the way they taste, and you will come to understand more about how to buy and enjoy the beans you love by exploring various coffee tastes.

Breathe in while tasting

You probably already know that taste begins with your nose. When you smell something, it helps you get a better idea of what to expect from the flavor, and it can even help increase the tastes that go along with the food or drink in question. Coffee is no different, and smelling it before you drink it can make a big difference in the way you enjoy your sips. You can start smelling coffee as soon as you open the container of beans, and this is widely recommended as the starting point for the true enjoyment of any brew.

After you smell the beans, grind them according to your preferences and needs. Next, smell the ground coffee once again, and take the time to notice how the aroma has changed as the form of the coffee was altered. The same main notes should still be there, but there will be some elements that mellowed out after grinding and others that came to the front of the profile. This is also a good time to write down anything you might want to remember about what you're enjoying as you smell the first few steps of the coffee, too.

If you're making your coffee as a pour over, wet the grounds a little as per the pour over method. Before you continue, lean in and smell the wet grounds for any new notes that develop. Don't have to take long for this step, as taking too much time will negatively impact your brew. You should at least notice the way the grounds change once again when they are exposed to water.

Finally, when the cup of coffee is ready for you to drink it, tilt the cup so that you get a full whiff of the smell and really breathe it in while sipping. This last, most important part

of the first stage, can get your mouth and tongue ready for the experience of drinking the coffee.

Sip Slowly

Most coffee fans and pros look for a handful of flavor types and elements in each sip of coffee. As you begin sipping, take your time and process the taste throughout your whole mouth. Swish the coffee around like you would with wine so you can experience the way it hits each part of your tongue differently. Just as with wine, many specialty coffees are made to evoke different responses depending on how you enjoy them. Here are some of the elements to be on the lookout for:

Clean flavor

This means that, when you swallow the coffee, the bitter aftertaste isn't going to hang around in your mouth. Most coffees do leave a little bit of a flavor on the tongue and in the mouth as a whole, but a solidly good cup of coffee shouldn't do this. It should not make your breath stale with coffee taste, and it shouldn't leave you with a sour or smoky feeling in your mouth either. It should leave your mouth feeling clean and ready to move on to another sip or to a bite of your food instead.

Acidity

This term refers to any coffee that provides a flavor including lemon, tomato, or blueberry. Although you may not realize it, there are actually a lot of coffee variations that make use of these types of flavors. Some coffees have acidity due to the ingredients used in brewing or processing, while others may get theirs from the weather and climate in the location where the beans are grown. The term acidity, in this case, does not refer to the pH level of the coffee and only describes flavor.

Sweetness

Many coffee beans have sweetness to them, and most of the time, you can even smell it at least a little bit in the whole bean. When you sip the coffee, are you able to locate different sweet sources throughout the flavor profile? Can you find the taste of mocha or chocolate, which is very common in some dark roasts especially? Or are you picking up on honey, caramel, or maple? Just as with acidity, the location and means of production of the beans can affect the sweetness of the coffee, as can the roast and even the grind.

Body

Another term for this is "mouth feel," although it's not often used to describe coffee as much as alcohols and liquors. Is the coffee very watery, or does it have a fullness to it when you take a sip? Does it sit in the mouth a certain way, or does it go down smoothly?

Can you identify that the coffee is a dark, medium, or light roast simply based on the body, and can you consider the body of the drink when determining how it was ground and brewed too?

Take a sip

Now that you've taken your time in identifying smells, tastes and textures going on in your cup, it's time to actually sit back and take a drink. You shouldn't sip your way through the entire mug of coffee, but you should give yourself plenty of time to really work through the contemplation of the drink before moving on to the full drinking stage. This way, you'll learn to identify the flavors you like and pick out the ones that aren't working for you very well. In doing this, you'll have a better relationship with coffee and how you drink it, and you'll know what to expect from your favorite beans, too.

When you take a drink of your coffee, there's no need to chug it. In fact, if the coffee is very rich and bold, you may want to avoid chugging it altogether, as it could disrupt your tasting experience. Take a normal drink of the brew and see how the various tones you picked out in the previous step work together. How do they dance with each other, and where do some of the flavors stand out more than the others? Are you still noticing the same tastes you picked up on before, and is the original aroma of the whole bean still making its presence known?

When you get to the bottom of the mug, are some of the grounds still floating there? If so, you may not have chosen the right brewing method or picked the right grind. The coffee should be smooth and consistent throughout the whole experience, and if the last sip is unpleasant compared to the rest, something may need to be tweaked somewhere along the way. This is part of the trial and error of coffee brewing, so don't be discouraged if something went a little wrong.

Chapter 13: Storing Coffee

Buy coffee as fresh as possible, and store it properly to retain its freshness. You can store unroasted coffee beans for up to 6 months, as long as you keep it away from dampness, heat, and strong odors. If you would rather buy roasted beans as other people do, follow the storage guideline as follows.

Unopened or sealed whole beans can last for 6 to 9 months in the pantry, and 2 to 3 years in the freezer. However, it is best to consume it within its peak freshness, which is 4 to 7 days upon roasting.

Meanwhile, unopened or sealed ground coffee lasts for 3 to 5 months in the pantry, and 1 to 2 years in the freezer. However, it is best to consume ground coffee within 7 days upon opening the sealed pack. It is not advisable to keep coffee in the refrigerator or freezer and take it out on a daily basis because this causes condensation and moisture is bad for coffee.

In fact, do not store coffee at all in the refrigerator and freezer unless you really need to. To get the maximum flavor of coffee, buy newly-roasted whole bean coffee frequently in small quantities just enough for 7 days, store it in an airtight glass container at room temperature, and grind the beans just before brewing. Adjust and compromise based on your lifestyle, preferences, and access to beans and machines.

Chapter 14: Cleaning and Recycling

Cloth Filter: Wash it after every use by running and rinsing it under cold tap clean water. Do not use soap as the taste may transfer to the coffee the next time you use it. Hang it to dry to prevent mildew. Replace your cloth filters every couple of months.

Used Ground Coffee: You can use this as fertilizer, odor absorber, face mask, face rub, or dry it fully and use it to stuff pincushions.

Cleaning, Calibrating, and Descaling Equipment: Clean and calibrate your coffee equipment every now and then, following the manufacturer's instructions. For regular electric drip coffeemaker, it is usually cleaned every couple of months. To clean and calibrate, use vinegar solution to fill the water chamber: equal amounts; water and white vinegar. Brew well until half the chamber is empty. Switch off the machine. Allow to rest for half an hour. After resting, finish brewing the rest of the liquid. Throw away the vinegar solution in the carafe. Brew water in 1 to 3 cycles until the vinegar smell comes off. This will also descale the machine and remove any mineral buildups within the machine,

Other equipment requires specific care and calibration. It is important to do this properly and regularly to ensure that your equipment runs well and lasts long.

Conclusion

Coffee is one of those beverages that show no signs of dwindling in terms of popularity and favor. The preference for coffee-based drinks is constantly on the rise, with consumers becoming younger and younger as the years go by.

It is a great thing that as time progresses, more varieties for coffee are being added to the mix, providing people with even more reasons to give the good old beans a try. With cold brew and nitro brew, even those who work to fend off coffee are being reeled in not only because of the smoother flavor but the benefits that drinking cold brew comes with.

- Edmond Hui