

# MAKING ESPRESSO

Espresso is perhaps the most quintessential brewing method in specialty coffee today, and we as an industry are constantly increasing our understanding of how we can enhance the brewing process. The way an espresso is brewed relies on an immense amount of variables, but when broken down to the most important things, it can be expressed in the same recipe of dose, yield, and time.

Working with an espresso machine involves many parts and tools, but for now we are going to focus on what you will be interacting with while you pull a shot. The metal perforated basket inside the porta-filter is where we will be placing our ground coffee. The porta-filters are attached to the groupheads of an espresso machine, where the water comes out of the boiler at a high pressure. The group-heads have switches or buttons that start/stop brewing, as well as a screen inside which helps evenly distribute the pressurized water onto the ground coffee bed inside the basket. After placing ground coffee into the basket, we will use our tamper, a tool used to press the grounds down to maximum density before we brew our espresso with highly pressurized water.



PORTA-FILTER



TAMPER

Maximum density is achieved by simply evenly tamping the grounds to its most dense state. You cannot over tamp a bed of espresso grounds. Steam wands, usually to the side of the group-heads, are for steaming milk.

When preparing an espresso shot, it is important to measure the main aspects of the process: dose, yield, and time. In order to adhere to your recipe, use a scale to ensure that your dose and yield are consistent. If you are keeping good control of other variables, there should not be much fluctuation in terms of extraction time. When extracting a shot, weighing yield lets you know when you need to stop extraction in order to meet the recipe. As all scales will have some sort of delay in its relaying of information, you will have to determine a good place to stop in order to reach the desired yield.

# DIALING IN ESPRESSO

Espresso is considerably more fickle when it comes to maintaining consistency in extraction over time. Things such as the amount of moisture in the room or the heat inside the grinder over time can have a great effect on how the extraction changes throughout any given day. This requires baristas to be constantly aware of the state of the espresso's extraction, another way that scales are integral to the process. As extraction changes over time, the barista has to adjust his recipe accordingly. As discussed, the best way to achieve this consistency without drastically altering the recipe is to experiment with extraction time.

<b>Bean</b>	Brazil Luis Carlos Basso
<b>Region</b>	Alta Mogiana
<b>Varietal</b>	Mundo Novo, Cauai
<b>Elevation</b>	920 masl
<b>Process</b>	Natural
<b>Dose</b>	19.5g
<b>Grind</b>	5.7
<b>Yield</b>	45g
<b>Extraction Time</b>	13 seconds
<b>Flavor</b>	Sour, undeveloped, unpleasant finish

As we can see, this shot came out extremely acidic. This can be caused by a number of different factors changing, but can only be returned to consistency through adjustments to the grind. This shot pulled extremely quickly, with the general range for pulling shots being around 18-40 seconds, so we are going to aim to increase extraction time by making the grind finer. Making small changes in grind size can have drastic changes on the extraction time, so we want to make our changes incrementally:

<b>Bean</b>	Brazil Luis Carlos Basso
<b>Region</b>	Alta Mogiana
<b>Varietal</b>	Mundo Novo, Cauai
<b>Elevation</b>	920 masl
<b>Process</b>	Natural
<b>Dose</b>	19.5g
<b>Grind</b>	5.4
<b>Yield</b>	45g
<b>Extraction Time</b>	20 seconds
<b>Flavor</b>	Less acidic, but still over all sour and unpleasant finish

# DIALING IN ESPRESSO

It appears to have made some progress, but not quite what we are looking for in this coffee. Lets try and take that grind a little bit finer and see if we can achieve that.

<b>Bean</b>	Brazil Luis Carlos Basso
<b>Region</b>	Alta Mogiana
<b>Varietal</b>	Mundo Novo, Cauai
<b>Elevation</b>	920 masl
<b>Process</b>	Natural
<b>Dose</b>	19.5g
<b>Grind</b>	5
<b>Yield</b>	45g
<b>Extraction Time</b>	27 seconds
<b>Flavor</b>	Citric acidity, smooth finish with a honey sweetness

This has much more of what we want to see coming out of this espresso, but remember that this is merely a temporary achievement. As time goes on and the many variables change again, you will have to make sure you are accurately measuring and watching every shot you pull, keeping an eye out for necessary adjustments.



## STEAMING MILK

Espresso and milk are an essential pairing in any space that offers coffee, and how milk is steamed makes an immense difference in the overall quality of a drink. In specialty coffee shops, all milk is steamed with the same texture in mind, unless a customer is requesting otherwise. That texture is called micro-foam, and is achieved through the perfect combination of stretching, when you use the steam wand to increase the milks volume; and texturing, when you use the steam wand to “whirlpool” the milk and mix it together.

Before you begin to steam milk, look at the pitcher from above, and picture the inside as having three sections: right, left, and middle. You want to have the steam wand going at an angle from the middle section to either the right or left section, depending on personal preference, whatever feels most comfortable for you. This is how you create the “whirlpool” effect you need in order to correctly texture your milk. To measure the temperature of the milk, you can use your hands or a thermometer. The temperature you are aiming for is about 140°F, which for most people means steaming it for just a few seconds past it being too hot to hold.

Stretching is accomplished by raising your wand inside the milk pitcher to the upper edge of the milk, being close to the surface allows you to introduce air into the milk. You will use sight and sound to guide you: the sound you are looking for is a light chirping or squeaking, this shows that you are introducing just the right amount of air into the milk to reach the volume level you are looking for. If your milk is screaming at you, it means you have introduced too much air, or gone too high in your milk pitcher. You want to begin stretching as soon as you begin steaming the milk, and should finish stretching as quickly as possible while maintaining the right amount of air introduction.

Texturing occurs throughout the steaming of the milk, and is what the steaming process is dedicated to once you have finished stretching. You want to continue that whirlpool effect with your wand, without continuing the stretching process. Once you've reached the correct temperature and the milk is finished steaming, you want to see a milk texture that resembles that of wet paint, that is micro-foam.



## **STEAMING MILK**

Accomplishing this ideal micro-foam is done through practice, and can only be achieved by hands-on experience.

Another important aspect of steaming milk is making sure you keeping control of milk waste. You want to limit how much milk you are throwing out after finishing a drink to as close to zero as possible. A barista with years of experience will be able to consistently make espresso and milk drinks while producing virtually no milk waste. The more drinks you make, the more familiar you will become with how much milk you need for each drink, just make sure you are taking a mental note of how much milk you put into the pitcher vs. how much you have left over after pouring a drink.

Latte Art can only be done correctly and consistently when you have nailed down perfect texture, and at the end of the day, so long as your milk texture is good, latte art is not nearly as important.