miami

Barista Guide

Tips and techniques for improving your Espresso

Contents

Coffee

To prepare an exceptional cup of coffee, two essential prerequisites are necessary:

- That the finest quality of green coffee beans are used; and,
- That these are stored correctly

Roasted coffee is an item of food and as such it is a perishable product. Exposure to air and moisture will accelerate the decomposition of the flavours.

Store your coffee in an airtight container. **Do not** store coffee beans in the refrigerator or freezer.

Milk

The second key ingredient is milk. Despite an urban myth to the contrary, all milk froths equally well. Having said that, milk with a higher fat content produces a thicker and creamier texture than low-fat varieties. Additionally, the fat in milk has a mellowing effect on the coffee, smoothing out any acidity or harshness inherent. The result is a richer and rounder brew.

Milk should be stored in the refrigerator and removed immediately before use.

The Perfect Espresso

There are four keys element in making a great espresso-based coffee:

1. The grind
2. Extracting the coffee
3. The act of frothing the milk, and
4. The maintenance/cleaning of the espresso machine.

The Right Grind & Extraction

Having the correct grind is decisive in the flavour of the coffee that is produced from the machine. What you are looking for here is to avoid under or over extraction of the coffee.

Start with the grinder set the way you usually have it and pull a double shot (approx 14gm) of freshly ground coffee into a double basket and firmly tamp.

Attach the filled handle to the group head on the espresso machine.

Remove the handle and check for signs that the shower screen was touching the grounds. If you can’t see it, the handle is under filled – adjust grinder gram throw to change how much coffee is dispensed. Unless you get this right nothing else matters.

Return the full handle to the group head and start the pump. As soon as you see the coffee stream emerge pay particular attention to the thickness of the stream. Now recall the appearance of the stream from the espresso machine and note the crema in the cup. Compare your results with the following chart:

Characteristics	Under-Extraction	Perfect Extraction	Over-Extraction
Brewing Time	< 18 seconds	18-25 seconds	> 25 seconds
Stream Appearance	Raging torrent	Half cm thick	Breaks into droplets
Crema Colour	None to blond	Golden	Brown to burnt
Crema Thickness	None to thin	Thick (4mm)	Thin to none
Crema Fragility	Breaks apart easily	Heals quickly	Doesn't heal
Aroma & Taste	Soft, weak	Strong, complex	Acrid, burnt, bitter

If your results are the same as the middle column, well done, if not you need to empty the grinder, adjust the mill collars and repeat the test as follows.

Adjusting the Grind to Taste

It is necessary to rotate the mill collar in order to increase or decrease the size of the coffee grounds. Some grinders rotate left while other rotate right so you need to look for some indication as to which way to turn the collar. Some grinders show a + or – sign. Turning towards + will coarsen the grind (allowing the liquid to flow more quickly) while towards the – will fine it up.

If these symbols are absent, look for an arrow with a point at one end and a fat tail at the other. Turning toward the point fines up the grind.

Also, commonly seen are two arrows pointing in opposite directions. One is likely to have a - or the word Fin (fine) at one end and the other a + or the word Grob (coarse). Many grinders have a mill-collar locking device in the form of push down button. This button needs to be depressed before the collar will move. Ensure the button returns fully to its locked position before starting the grinder.

The most important thing to remember is that coarser grinds produce a weaker taste as the water runs through quicker, while finer grinds absorb more water making the coffee stronger. Aiming for something in the middle is usually best.

Adjust Grinder from Scratch

Periodically it will be necessary to completely remove the whole bean hopper and mill collar, say for cleaning or removal of a foreign object thereby upsetting your perfect setting. Simply make sure the threads are perfectly clean and wind the mill collar down till it touches the lower grinding surface. Now wind it back a quarter turn and grind a little coffee until it is the size of table salt grinds (or sand). Adjust as previously described.

Tamping

Tamping the coffee in the handle helps impede the flow of water through the grounds and assists with the extraction process. It also greatly assists with the production of crema; the golden cream of aerated coffee oils found atop a great espresso. Choose a tamper with a flat bottom, press down on the coffee, rotate and then tap the side of the handle with the back of the tamper to dislodge loose grounds and re-tamp. Wipe the handle face before inserting in the group head. Tamping is one of the great ceremonies in the production of espresso coffee.

Pulling The Shot

There are only 4 rules to pulling the perfect shot of espresso:

1. **Temperature**. If the machine has been sitting for a while, draw off some water through the group head. This will remove the boiling water in the head and replace it with cooler water. Drawing off water will also wash the head of loose grounds.
2. **Fill the handle**. The coffee must pack the handle from the bottom of the filter basket to the shower screen in the group head. If not the water will move the coffee around and an inferior extraction will occur. Please note that the basket in the single shot handle may be more than half the volume of the basket in the double shot handle so setting up the drop

of the grinder for two flicks to fill the double shot handle will under-fill the single cup handle. However you solve this problem, the handle must be filled.

3. **Thickness**. The flow from the handle must be no thicker than half a cm. See ‘Adjusting The Grinder’ to correct any errors.
4. **Only 30 ml per cup**. The first 15 ml of liquid is the strongest (as used in a ristretto), the next is less strong but very acceptable (total now 30 ml).

Frothing the Milk

Milk that is frothed correctly greatly enhances the appearance of the coffee and adds to the flavour by toning down some of the natural acidity of the bean. With the milk you aim to avoid two things. The first is not to scald the milk and the second is to avoid large air bubbles in the jug. Both are easily avoided with a little practice.

1. Take a half-filled stainless-steel jug of **cold** milk, introduce the steam wand to the centre of the milk jug and turn on the steam. Slowly withdraw the jug until the tip of the wand is approx. 1 cm below the surface of the milk. At this point you will hear a sucking sound. This is the best position since with the wand further in, the milk heats before it froths and further out you blow big bubbles. Done correctly the froth will rise to the top of the jug. *This is called ‘stretching’ the milk and will only occur at lower temperatures – say below 35 degrees. You must stretch the milk before you heat it. Once heated, milk will scald before it stretches.*

2. After the milk reaches upwards of 27 degrees Celsius, you can lower the wand back into the milk and gently tilt the jug to make the milk spin counter clockwise. This is known as ‘spinning’. The optimum temperature for drinking immediately is between 65 and 70 degrees.

3. Shut the steam off, remove the jug and let the milk settle. Wipe the wand with a damp cloth. Swirl the milk vigorously. Should you see any large bubbles in the milk, bang the jug a couple of times on the counter top to remove, then swirl again.

If you don’t have a thermometer in the jug to measure the temperature you can use the touch method. Hold the jug by the handle using the hand you write with and place the fingers of your spare hand on the jug bottom away from the steam nozzle. When it gets too hot to hold, count three and remove it from the steam. Is the temperature right? Make yourself a coffee using the milk just frothed. If it is too cold simply increase your count until you get the temperature correct. There is no need to burn your fingers.

Pouring the Milk

Start pouring the milk into the espresso – see the enclosed table card for different drink measurements. You may wish to use the flat edge of a spatula for ease of pouring at first but this is not necessary with practice.

Latte Art

To create a flower pattern: pour the milk about an inch (2 cm - 3 cm) away from the bottom. Once the cup is about half filled, gently shake the pitcher back and forth while slowly moving it backwards. The flower design will move forward, filling the cup. Do this with a shaking motion originating at the wrist instead of moving your hand back and forth.

To create a heart pattern: Shake your hand as you would in making a flower. However, instead of moving backwards, keep your hand in the same general area, focusing on making a ringed circle.

Continue until the foam reaches the top of the cup. Then, sweep the rest of the milk up the centre of the newly created pattern. Use a minimal amount to avoid sinking the pattern.

You can embellish the design using stencils, powder, and milk foam. This step is optional, as many prefer to limit their latte art to "free form" methods, but you may want to experiment with the possibilities added by "etching."

To write a word, melt milk chocolate and using a pin as a paintbrush drag the melting chocolate over the foamed milk. More commonly this is done by dipping the pointed object into the cream of the drink being decorated, and then transferring that cream stained foam to the pure white foam to 'draw' a design.

Machine Maintenance

Espresso machines are remarkably robust pieces of equipment and will continue to give excellent service with the simplest of maintenance. The things to be avoided here are the blocking up of the group head and boiler contamination.

At the end of every day the machine should be back-flushed. Back flushing involves the use of the blind filter in a handle. First though you need to brush under the group head to remove loose grounds of coffee, particularly those that have stuck to the neoprene seal. A build-up of grounds here will cause the handle to seal incorrectly and water will be forced over the top rather than through the pipes behind. Introduce the handle to the head and push the continuous pour button for a 10-second pour. Empty the contents and repeat until clear.

Twice a week use a detergent to backwash the group – we supply several suitable products. Simply follow the same procedure as back flushing but add the detergent to the blind filter. Thoroughly rinse the group with water before pouring the first coffee. The back-washing procedure is very important because it assists in dissolving coffee oils that accumulate in the group head and clog the fine filters.

At the end of **each week** (or sooner if necessary), soak the filter handles and their cups in back wash detergent to remove the black coffee stains

You should **periodically** refresh the water in the boiler by pouring off a litre or two via the tea-making tap. This not only refreshes the water but is also a check on whether you have spore contamination in the boiler. Spore contamination will show either as black “crud” in the poured off water and or the water will have a white appearance and smell like sour milk. If the boiler is contaminated so is your coffee. These spores are a fungus growth caused by milk being siphoned into the boiler via the steam wand because the wand has been left in water. Boilers contaminated with spores can be cured but at considerable cost.

If steam wands must be soaked in water to remove caked on milk, blow out the holes by releasing some steam. Under no circumstances turn the machine off with the wand in water.

Grinder Maintenance

On a weekly basis remove all the beans from the hopper and wipe the hopper clean of oil residue. Clear any obstruction in the opening to the grinding discs. If grinder is fitted with a magnet then remove any object clinging to magnet. Do not use detergent on interior of grinder. Do not use water on interior of grinder.

The grinder blades eventually wear, and require replacement.

Troubleshooting

- **Symptom: Coffee pours too slowly.**
  Coffee stream should be half a centimetre thick.
  Remedy: If thinner, coarsen up the grind. Use less force with the tamper.
- **Symptom: Coffee pours too fast.**
  Coffee stream should be half a centimetre thick.
  Remedy: If thicker, fine up the grind. Try tamping more firmly. Is the handle completely full?
- **Symptom: No crema on coffee**
  Handle not full. Coffee ground too coarse. Water too hot. Coffee not fresh. Coffee not freshly ground
  Remedy: Revise 4 rules of extraction.
- **Symptom: Crema thin and will not heal.**
  Over-extracted.
  Coarsen up the grind.
- **Symptom: Coffee tastes bitter.**
  Water too hot. Over-extracted.
  Remedy: Revise 4 rules of extraction.
- **Symptom: Coffee tastes burnt.**
  Group head dirty/handle dirty.
  Remedy: Replace shower screen and shampoo handle.
- **Symptom: Water runs over top of handle.**
  Head seal damaged.
  Remedy: Replace seal.
- **Symptom: Slow water flow from group.**
  Shower screen clogged
  Remedy: Replace shower screen
- **Symptom: Water under machine.**
  Cause: Clogged waste.
  Remedy: Flush gully or empty waste bucket.

- **Symptom: No steam from wand.**
  Cause: Nozzle blocked.
  Remedy: Remove nozzle and clear holes.
- **Symptom: Excessive water in grounds.**
  Cause: Handle not full. Coffee ground too fine
  Remedy: Fill handle completely. Coarsen grind.
- **Symptom: Pump lacks pressure.**
  Cause: Poor water supply. Pump defective.
  Remedy: Call technician.
- **Symptom: Grinder suddenly stops.**
  Cause: Foreign matter in grinder. Check power supply.
  Remedy: Switch off power and clear obstruction.
- **Symptom: Grinder runs no coffee grinding.**
  Cause: Obstruction in hopper.
  Remedy: Open shut-off plate. Agitate shut-off plate