

ESPRESSO EXTRACTION

The key variables that you should control to prepare consistently tasty espresso

Dose: The weight of dry coffee grounds used. Usually between 18-22 grams. Should not use more than +/- 1g of the basket size.

Yield: The weight of the final espresso. This is the amount of water that has passed through the coffee

Contact Time: The amount of time that water is in contact with the coffee. This is dictated by grind size. Fine grind = long contact time. Coarse grind = short contact time.

Brew Ratio : The ratio between dose and yield.

Barista Technique

Distribution: How evenly the coffee grounds are distributed in the basket. To distribute grounds, lightly tap the front and back of the basket until they are level. Never use the tamper to do this as it is too forceful and can knock a large proportion of the grounds into one concentrated area and create weak spots in others. Uneven distribution can create more dense areas of coffee, stopping the water running through the grounds in some areas and running too quickly through others. This results in an uneven extraction and unpleasant flavour.

Tamping: This is the act of expelling air from the coffee grounds to create a dense bed of coffee. You should only tamp once, at a 90 degree and to create a flat, even bed of coffee. If you push more weight onto one side of the coffee, the water will struggle to pass through this area and will flood through the others.

Extraction

Extraction is the process of adding water to the coffee to dissolve the solubles within it. An ideal extraction will taste balanced, with sweetness, complex acidity and clear, recognisable flavours. The levels of these will change depending on the coffee which you are working with.

To reach the perfect extraction, you must be able to identify the issues in an imperfect shot and the actions to take to correct it.

Under-extraction: You have not extracted enough of the solubles to create a balanced flavour. Under extracted espresso coffees can taste sour, salty and lack sweetness. If the coffee is under-extracted, you can increase the yield and/or contact time.

Over-Extraction: This is when you have taken too much from the coffee. Overly extracted coffee will taste overly bitter and overly diluted and can create a dryness in the mouth. Many mistake this as the coffee being burnt. To extract less, decrease the yield and/or contact time.

(if in either of these cases a change in yield or contact time does not fix the problem, you may want to change your dose. If the dose is too big/small for the size of your baskets, this could be the issue)

Uneven Extraction - when the water is not passing through the bed of coffee evenly. This could be because of uneven grind particle size, distribution/tamping, or a crack in the bed of coffee. In the worst cases you will see water spraying out of the portafilter, or areas that are running too quickly. This is called channelling. The resulting coffee can taste both over and under extracted at the same time.

Using the variables to dial in

It is good practice to initially lock in your dose first, then decide on your yield, and lastly contact time.

A 1:2 brew ratio is generally a good starting point. eg. 19g : 38g

The ability to identify positive and negative flavours in the coffee is a key skill in the dial in process. Tasting the same coffee with different extractions will help you to understand which variables to change to get the best out of your coffee. The elements that you should be looking at whilst doing this are

- **Acidity**
- **Sweetness**
- **Bitterness**
- **Strength/Body**

Increasing yield will:

Increase sweetness and bitterness

Decrease Acidity, strength and body

Decreasing Yield will:

Increase Acidity, strength and body

Decrease sweetness and bitterness

When you have locked in both your dose and yield, you can decide on the optimum contact time to achieve a balanced, even extraction. Contact time is best used to balance sweetness and bitterness.

You may often have to increase both yield and contact time together to achieve the optimum extraction.

For example if your recipe is 18g - 34g - 27s and you are finding that there is a high acidity, just an increase in contact time will not be enough to achieve balance. However by increasing yield, you are effectively diluting the drink and losing body. By also increasing contact time, you are also slightly increasing the sweetness, bitterness and body to create balance. You may end up with a recipe of 18g - 36g - 30s

Experiment with different brew ratios. You may find that different recipes are suited better to different drinks. The quality and nuances in your 1:2 espresso may be perfect for a long black. However, this may be lost when making milk based drinks. Decreasing this ratio to 1:1.5 will increase the intensity of the espresso which will be heavy bodied and almost syrupy in texture giving your milk drinks more punch and a nicer mouthfeel.

“Darker roasts increase the solubility of the beans, making them easier to extract, but, beyond a certain roast profile, they overpower the more delicate, complex flavours, meaning they often taste best when pulled quite short.”