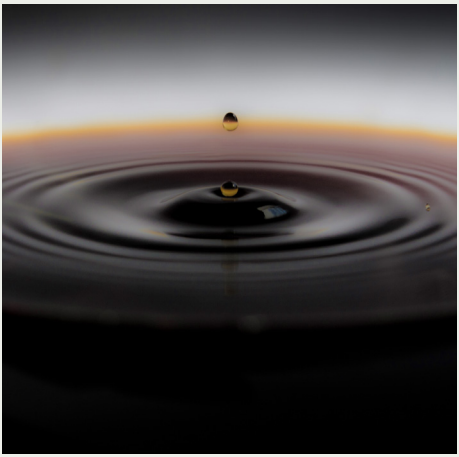
Espresso extraction

A TRAINING GUIDE

DARKWOODS

COFFEE

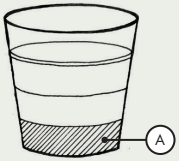


EXTRACTING ESPRESSO

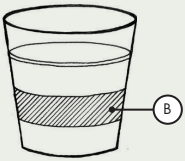
Brewing espresso is a lot like brewing tea; if we leave our bag in too long we risk over-brewing the tea and extracting "stewed" bitter flavours from the leaves but if we do not leave it long enough our tea risks being weak and insipid. This means we must exert control over our brewing process to ensure that we extract all of the desirable flavour compounds whilst leaving behind the compounds responsible for unwelcome bitterness and astringency. This is easy with a teabag – we can take it out whenever we choose – but achieving the same control with espresso is slightly more complex.

THE THREE PART ESPRESSO

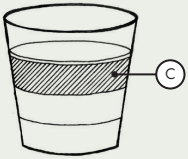
Coffee does not extract homogenously during its brewing cycle. Most extraction occurs during the first third of its brew time. Typically fruit acids and bean fragments that contribute towards body extract first, followed by sugars, and then bitter compounds.



A – Heavy body, acid, salty



B – Medium body, lower acidity, sweet



C – Thin body, bland, papery

BREW RECIPES

A brew recipe is a set of instructions for successfully brewing a given coffee. It consists of suggestions for ***DOSE***, ***YIELD*** and ***BREW TIME*** and is designed to achieve a "balanced" espresso by extracting an appropriate quantity of the available soluble compounds.

This figure is called the ***EXTRACTION*** % and can be calculated using a refractometer.

DOSE **HOW MUCH COFFEE WE USE IN OUR RECIPE *(grams)***

- May be limited by available basket size
- If you want more strength or body ***(TDS)*** you need more coffee
- If your ***DOSE*** goes up you would expect your ***EXTRACTION*** % to go down and your to ***TDS*** increase
- Increasing your dose may require you to increase your brewing temperature

YIELD **HOW MUCH BREWED ESPRESSO WE MAKE WITH OUR DOSE *(grams or ml)***

- Should be set in appropriate relation to our ***DOSE***
- Is expressed as a weight (g), a volume (ml) or as a ratio or % of our ***DOSE***
- 1:2 (50% Espresso Brew Formula) is a good starting point for light roasted espresso but 1:3 (33% EBF) is often used for traditional (dark roasted) espresso coffees
- Increasing YIELD will increase our ***EXTRACTION*** % but decrease strength and body (TDS)

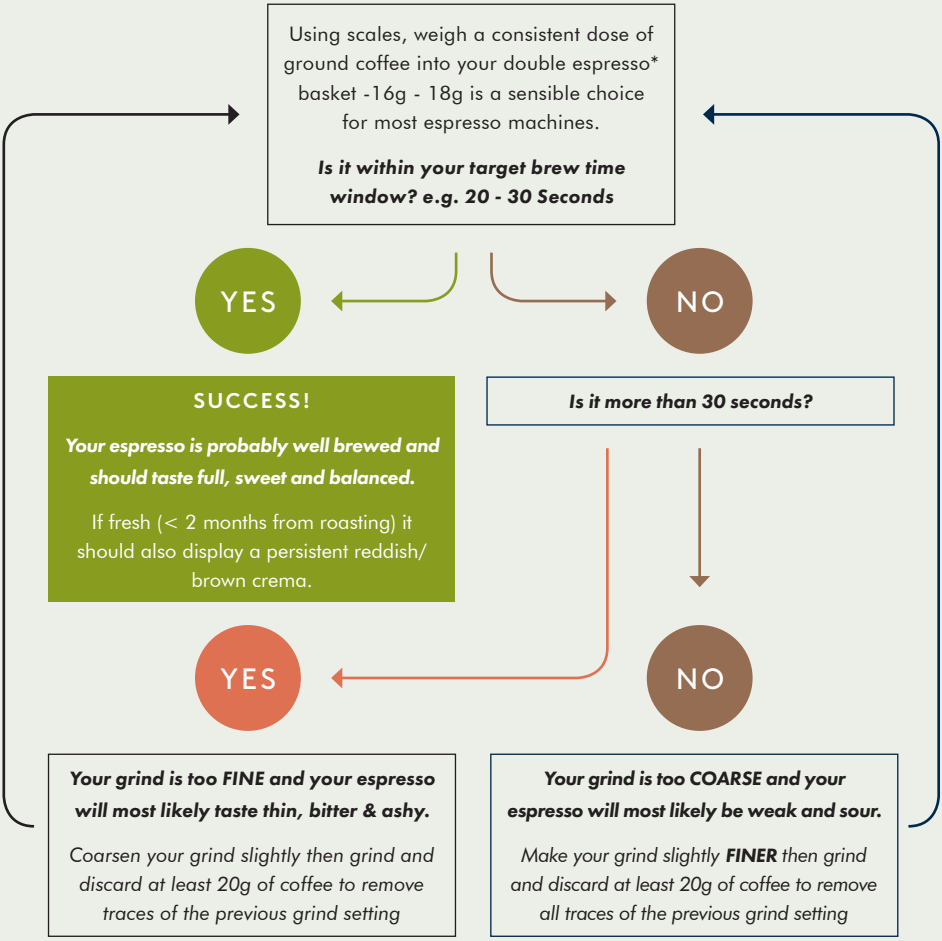
BREW TIME **HOW LONG IT TAKES FOR OUR DESIRED YIELD TO POUR *(seconds)***

- We control ***BREW TIME*** by adjusting our grind texture
- Coarser = quicker, finer = slower
- The longer our **BREW TIME** the more soluble content will be extracted, increasing both **EXTRACTION %** and **TDS**
- Finer grinds present a larger surface area than coarser grinds which further aids extraction

BREW TEMPERATURE - Some brew recipes stipulate a specific brew temperature but generally it is considered that 90-95c is desirable for coffee brewing. Excessively hot water will result in "burnt" tasting coffee that is bitter and papery whereas cooler water may produce thin-bodied, sour or under-sweet espresso.

'DIALLING IN' OUR ESPRESSO

Understanding your grinder is the key to achieving desirable ***DOSE*** and ***BREW TIME.*** Whether you are using a modern "on-demand" grinder or a more traditional "dosing grinder" you should be able to control both ***DOSE*** and ***GRIND TEXTURE***, both of which are critical to brewing balanced espresso. Here's how…



NOTE – This method presumes both appropriate shot sizes (refer to brew recipe) and brew temperature (90-95c) – check your machine to ensure that this is the case.
*Brewing double espresso is advisable for dialling in as single baskets are prone to channelling.

DISTRIBUTION AND TAMPING

When you dose the coffee into the filter handle it is vital that you evenly distribute it across your filter before tamping to a flat "puck". Espresso machines deliver water at around 9 bar of pressure and this means that any weaknesses in the puck may cause water to "channel" past the main coffee bed rather than evenly through it. Good distribution minimises risk of channelling and encourages more complete extraction. This may be done either by methodically tapping the filter handle or by using fingers or a tool to physically manipulate the dry coffee grounds, ensuring a level surface prior to tamping.

Now the coffee should be firmly and evenly tamped to secure the puck in place. Exact pressure is unimportant and excessive force may even risk a repetitive injury.

STEPS TO MAKING YOUR ESPRESSO

KNOCK OUT	Remove the filter handle and knock out spent coffee grounds
DRY WIPE	Give the filter a wipe with a (dark) dry cloth
FILL	Dispense the required amount of coffee into the portafilter
DISTRIBUTE	Tap and settle the coffee bed – as even and flat as possible
TAMP	Firm and level, finishing with a twist to "polish"
BLESS	Wipe the rim of the filter and sweep spilt grinds from the lugs
PURGE	Flush water through the group to rinse old grinds from the shower
LOCK & BREW	Lock the handle firmly into the group and brew immediately
STOP	Stop brewing after desired shot length (50-60ml "double" 25/30ml "single")
CLEAN	If no more coffees are required, knock out spent grinds and wipe basket before locking back into group head to preserve heat

DARKWOODS COFFEE LTD
HOLME MILLS . WEST SLAITHWAITE ROAD . MARSDEN
WEST YORKSHIRE . UK . HD7 6LS

T: +44 (0)1484 843 141
DARKWOODSCOFFEE.CO.UK