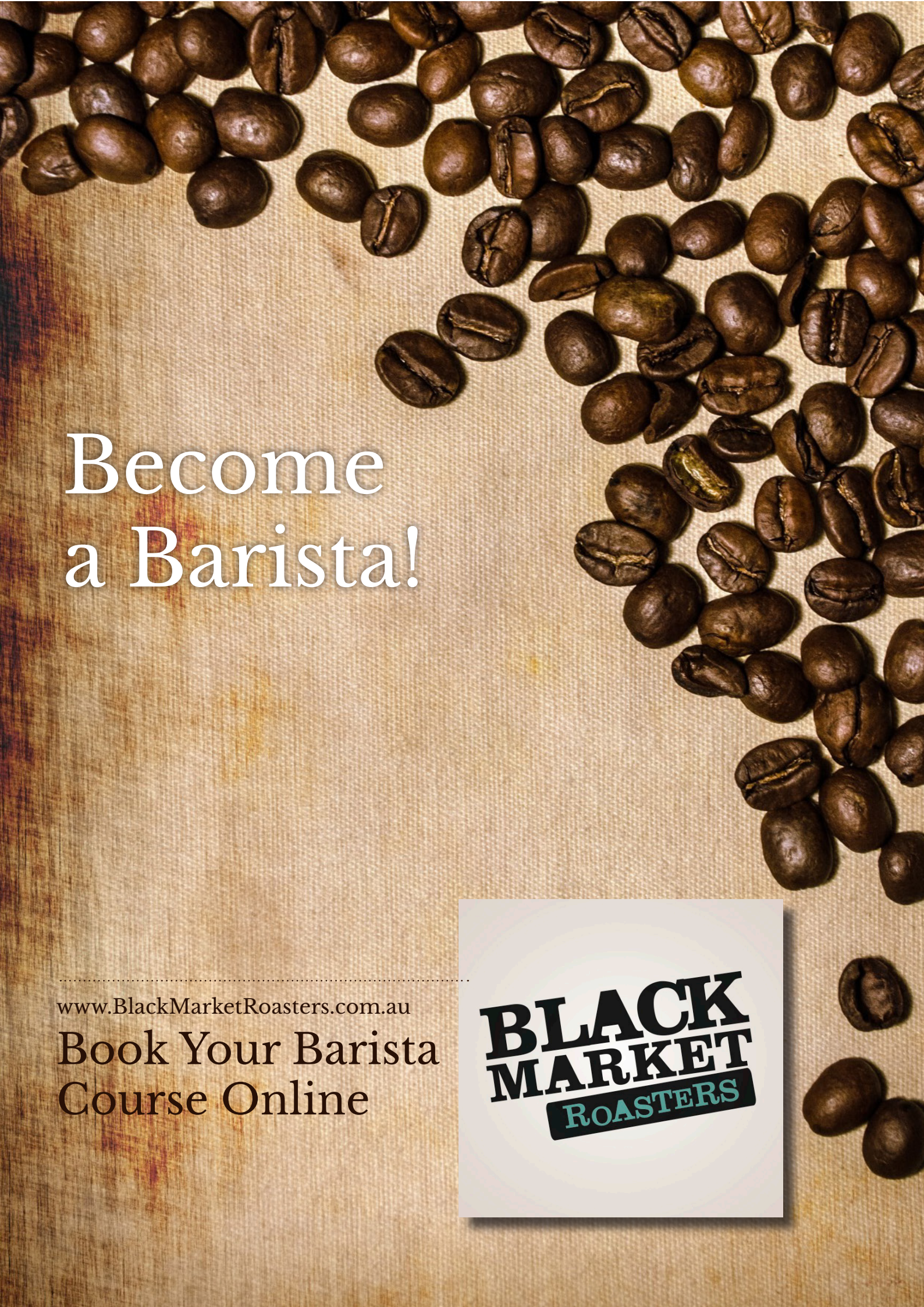

Become a Barista!

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BLACK MARKET ROASTERS

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BECOME A BARISTA! COURSE OUTCOMES

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MODULE 2: TOOLS OF THE TRADE

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Objective: This practical component shows and then gets students to dose, extract and monitor coffee in a real situation. They will grind coffee, place it in the portafilter correctly and then extract the coffee and taste the results. This module is designed to give students the confidence and basic skills needed to get a job in a café or simply broaden their skill level.

MODULE 6: WORKING WITH MILK

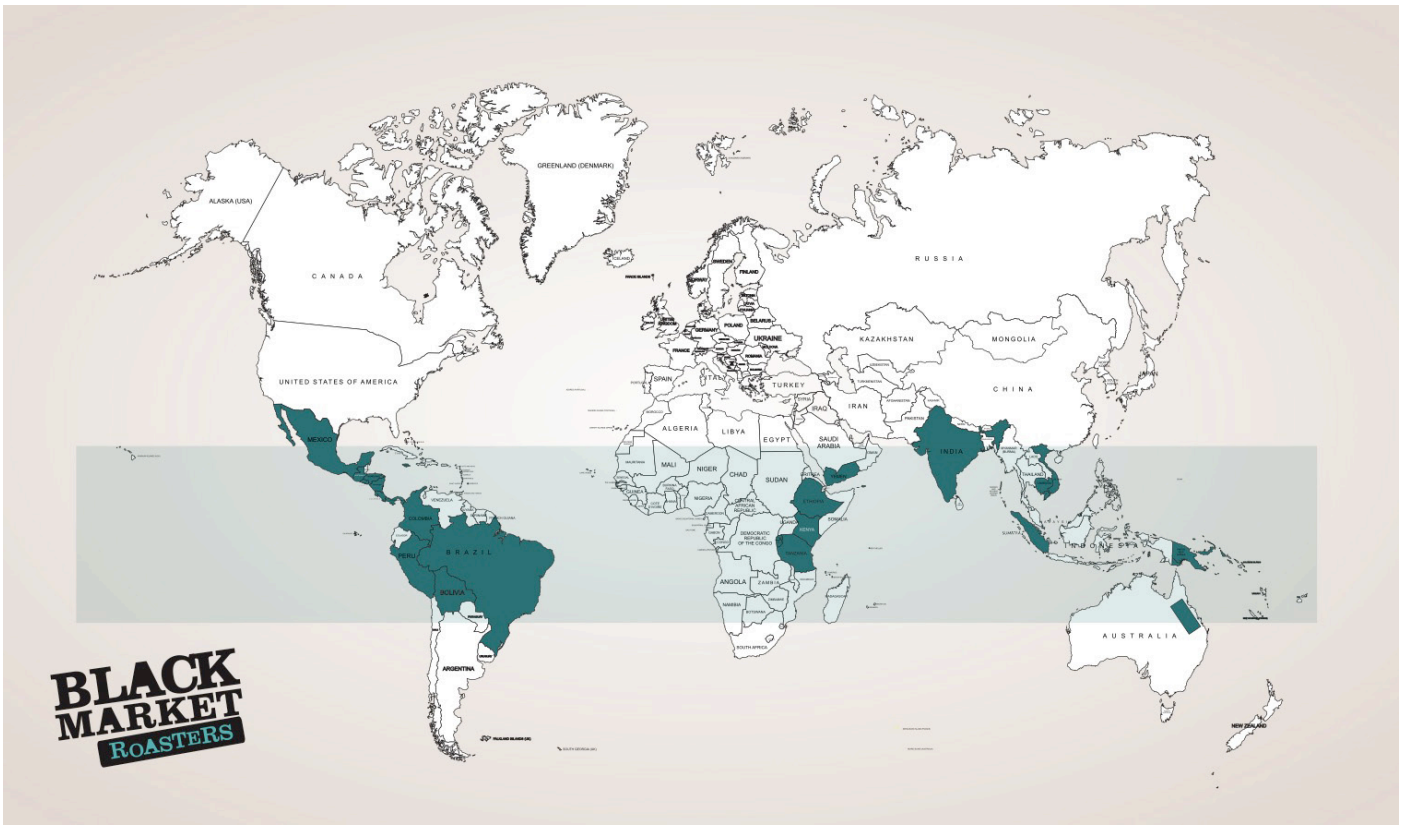
How to Make Silky Milk
How to Pour Latte Art

Objective: This practical component teaches students the correct way to steam milk for different types of coffees, then pouring the coffee to a set of standards. This module allows students to get behind the bar, play and learn valuable skills that can be directly transferred to a job.

Module 1:
What is Coffee?

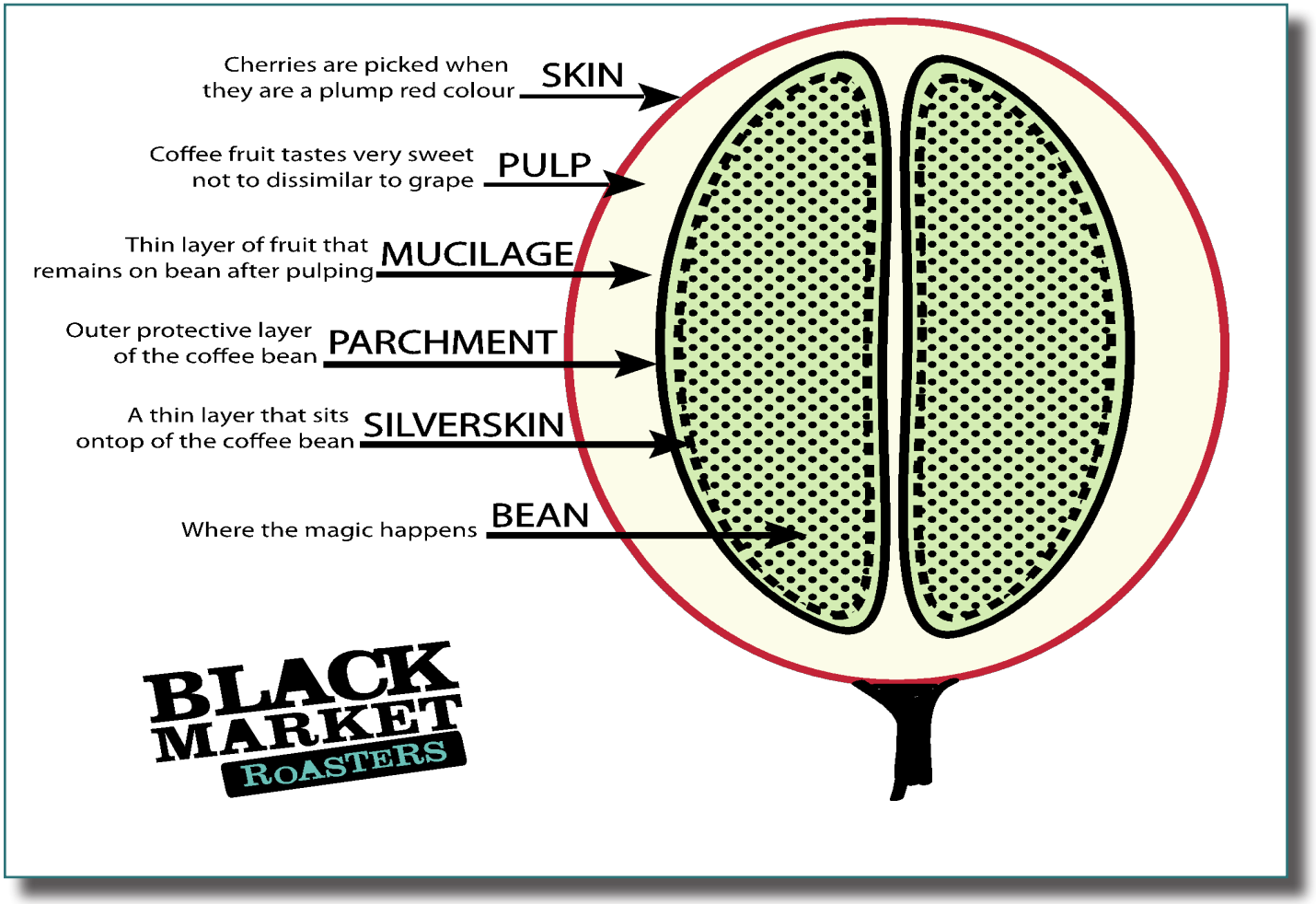
Where is Coffee Grown?

Coffee is grown typically between the Tropic of Cancer and the Tropic of Capricorn where conditions are ideal for the species. There are two main branches of the coffee varietal, Robust and Arabica. Robusta is less flavoursome, high yielding with high pest tolerance. Hence, it is great for cheaper, low-quality instant coffees. Arabica makes up the majority of the coffee grown in the world and is what holds the exciting flavours and aromas that you think of when you dream of coffee.



The Coffee Tree and Cherry

The coffee tree and its cherries can be a number of colours depending on the varietal. Mainly they are bright red, but sometimes they can be yellow. There a number of layers in the coffee cherry, before you get to the actual coffee bean that we know.



Module 2:
Tools of the Trade

There are a number of tools a barista uses every day that aids in great coffee-making. As the tools are used over and over again, it is important to understand how to use them correctly, for quality as well as for safety reasons.

Grinders

Grinder Function

To chop the coffee beans as evenly as possible at the exact particle size as quickly as possible.

Components

Starting from the top of the Manual Dose grinder, you have:

The Hopper – where the whole beans sit

The Bean Gate – to stop the flow of beans into the blades

Grinder Blades

Grind Adjustment Wheel – to move the blades closer or further away

Coffee Tunnel – where the ground beans travel after the blades

Dosing Chamber – where the ground coffee falls to after the tunnel

Manual Doser – the 'clicker' which spins the mechanism within the dosing chamber around so a portion falls out the hole

Portafilter Stand – the place where you put your group handle (portafilter) to catch the coffee grounds

Grind Adjustment

When adjusting the grind, what you are doing is moving the blades closer or farther from each other.

The Tunnel

After the beans are ground, they enter a tunnel before dropping into the dosing chamber where we can get to it. When making a grind adjustment, it's important to realize there are about 3 shots of coffee in the 'Tunnel' that are from the previous grind change. This means that if you make a grind adjustment, it will take 3 more shots of coffee to notice that change. We purge our coffee if we need to make a large adjustment.

Types of Grinders

Manual – Highlight the manual chamber and explain that here we click the doser, which spins the wheel inside and lets out only a small amount of ground coffee. Note it is not accurate in any way so do not use it for a measure of coffee.

NOTE: Never use the pre-grind function. Coffee loses its beautiful aroma within seconds of being ground. Always grind to order.

Automatic – Same machine as the manual except it does for you. Still has the tunnel. When you press one of these buttons, it tells the computer to grind for a set amount of time, straight into your portafilter.

NOTE: Our Head Barista Course will touch on how to setup a Robur-E. Note. This grinder produces whilst is one of the best produces inconsistent grind weights, so it is important to weigh your shots periodically.

Weighing Coffee

- Take a spare takeaway coffee cup on your scales.
- Place dose in the scales.
- Adjust the dose to get desired weight e.g. 21g.
- Distribute back in the portafilter, grooming again.

Tamping Coffee

We recommend using a handheld tamper, one that is quite heavy and feels nice in your hand. Correct tamper use is important not only for an even extraction, but also to keep your body in top form.

Grasp the tamper like you would a TV remote control, noting you want to use your body weight and shoulder rather than your wrist.

Tamp lightly on the coffee bed, just to flatten it and ensure you are going to tamp evenly. Now apply more weight for a second tamp, just using your body weight for 1 second, remove the tamp and any excess coffee grounds.

Coffee Machine

Setup

Your machine should always be kept on, except for when you are closing the shop for over 3 days. This is because of power and water consumption needed to reboot the coffee machine.

In the morning, you will run seasoning shot through each of the coffee heads. This is for a number of reasons, including temperature into the group heads and flushing any chemicals still in the head. Use this opportunity to start dialing the grind in.

After the seasoning shots, purge your steam wand, i.e. turn it on, so that the water turns to steam and cleans it out ready for use. Arrange all your equipment, including tea towel for wiping portafilter, damp cloths for steam wand and jugs steaming milk.

Maintenance

Every 10-20 shots, use your blank head to clean the ground heads. You do this by locking the blank head in, running the water for 5 seconds, then taking out the blank head and flushing again. Repeat this 5 times. Wipe portafilter and basket to remove coffee build up.

Ensure your steam wand is kept unblocked and wiped thoroughly with a damp cloth after every steam session.

Closing Group Heads

At the end of the shift, flush every head using the blank head procedure - five seconds in the group head, five seconds out, flushing the clean water through to remove any coffee grounds. You will then repeat this, but with a quarter teaspoon of coffee chemical cleaner. This chemical travels up into the lines of the coffee machine to dissolve any coffee grounds that have made their way into the machine. Run each ground head for 30 seconds to flush out this chemical after the procedure.

Closing Steam Wand

Dilute a quarter teaspoon of coffee cleaner chemical in hot water and soak the tip of the steam wand in the solution for one minute. Remove and clean thoroughly with a scourer. Ensure the holes are not blocked and full steam pressure is achieved.

Module 3:
The Coffee Process and Roasting

Coffee Processing

Once the coffee berries have been picked, they need to be prepared for roasting. There are a few different ways that this can be done and the processing method has a significant impact on the outcome of the flavour and body in the cup.

Washed

Washed Processing is the most common method used. The berries are first pulped in a wet mill. During this stage, the fruit is removed from the bean. Once pulped the beans are washed up to 12 times to remove any mucilage that might be remaining. The green beans are then dried. This can be done through mechanical drying which acts much like a big air dryer or can be accomplished naturally by laying the beans in open air to dry. Washed coffees are typically very clean tasting.

Natural

In Natural processing, the berries are picked and simply laid out on concrete beds or raised Indian beds. Raised Indian beds, though expensive, are becoming more popular as they allow for increased air-flow and decrease the risk of over-fermentation or nasty, moldy tastes. Whilst the beans are drying, they are constantly turned to ensure even drying. Once the fruit is completely dried, they are pulped in a dry mill. This leaves the beans which are now ready to be sorted and graded.

Honey

Honey processed coffee is a popular method in countries where water is scarce. Once the berries are picked they are cleaned and sorted into ripe, unripe, over-ripe & damaged lots. Only the perfectly ripe cherries are used for the best possible results. Once the berries are clean, the pulp (fruit) is removed using a wet-mill or a dry-mill. What makes honey processed coffee so different is that at this stage in the process, the mucilage is left on.

The mucilage is a thin gooey layer that surrounds the parchment, essentially acting as a protective layer to the bean. It is also very sweet in flavour and this is what makes the defining characteristic of 'honey' processed coffee. Once dry, the mucilage gives the coffee a heightened sweetness and more body in the cup.

We can also get varying degrees of honey processed coffee. These are known as Yellow Honey, Orange Honey, Red Honey and Black Honey. The more mucilage left on, the darker the colour.

Coffee Roasting

There are two types of roasting which can be used for coffee roasting. The first is called a fluid bed roaster (also known as an air roaster) and uses hot air to roast coffee beans. It operates through pushing hot air from the ground upwards through a vertical tube. The green coffee beans are then thrown into the tube and are suspended in air the force of the hot air coming up at them.

The second is a drum roaster, this is the most traditional way of roasting coffee and involves a thick metal drum spinning over a gas flame. The beans are then inserted into the drum to begin the roasting process.

Variables such as flame size, air-flow and drum speed rotation are adjusted throughout the roasting process to achieve desired results. The physical structure of a coffee bean can vary greatly depending on where it is grown and how it was processed and it is for this reason roasting recipes vary greatly between one origin and the next.

Single Origin v Blends

Single Origin

Single Origin Coffee beans are traceable to one particular origin or country. Drinking Single Origin Coffees allows us to distinguish subtle differences in flavour, body and acidity between countries and between regions within countries. 'Terroir' a French term used predominantly in the wine industry refers to outside influences that impact on fruit production such as grapes and coffee cherries. Everything from the soil the plant is grown in, the temperature, rain-fall, plants which are grown in surrounding areas and time of picking all apply their stamp to the coffee bean as it is grown and give it a unique taste which comes to define and area or origin. The increased traceability of Single Origin and Single Estate Coffees gives farmers incentive to produce the best coffee they can so that they receive the highest prices on the green bean market. This in turn gives farmers credibility and the recognition they deserve. Single Origin Coffees are perfect for use in short, black and filter coffees which are coffee styles that allow the origins unique characteristic to shine through.

Blend

A blend is a mixture of origins and is usually formulated for a specific purpose. A blend may be especially designed for use in milk-based coffees or can be designed to be used as espresso.

A coffee roaster can create their desired flavour profile by combining origins which each bring a particular character into the mix. For example, in BMR's house blend we are looking for a sweet full bodied coffee with chocolate undertones, caramel polka dots and flecks of spice.

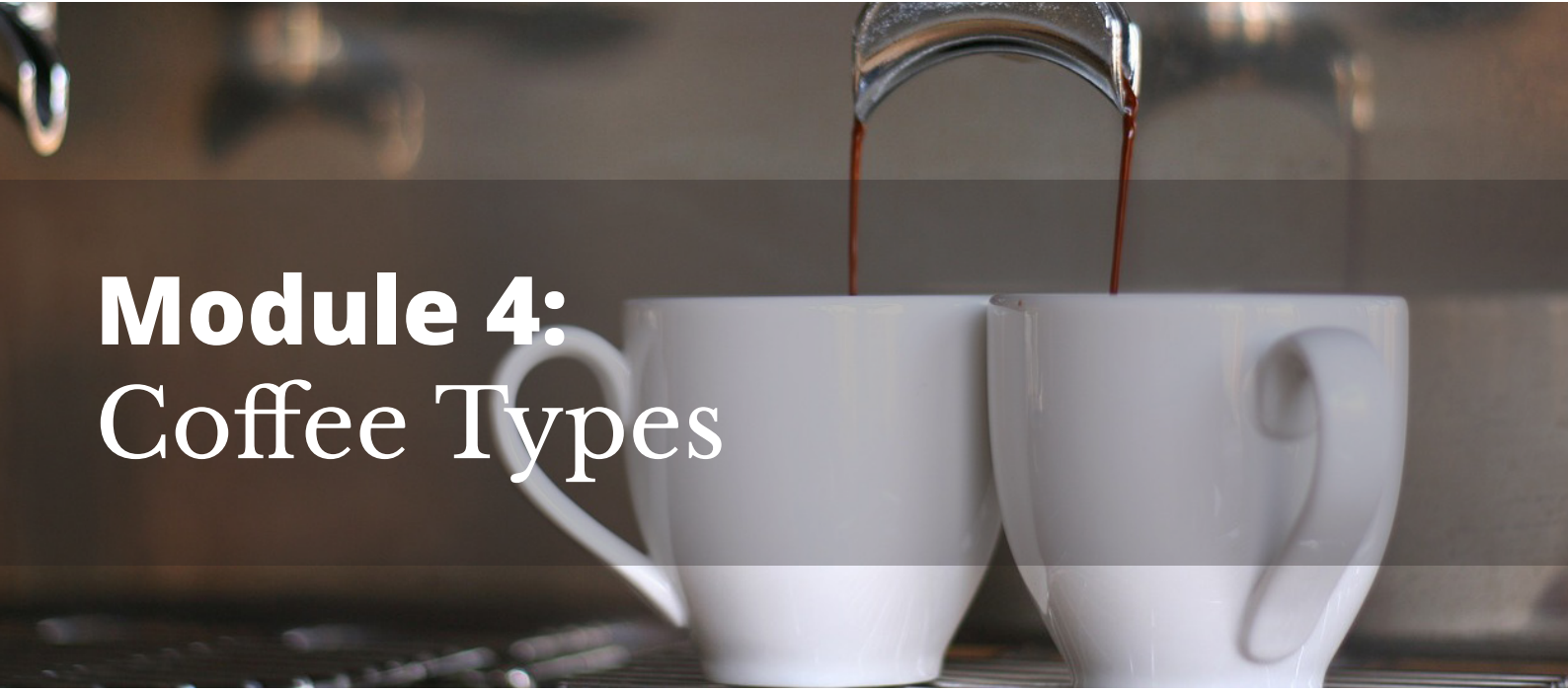
Decaf - Swiss water process

There are a number of ways to decaffeinate coffee. Most use chemical solvents like methylene chloride or ethyl acetate to strip caffeine molecules from the beans prior to roasting.

Swiss Water Process (SWP) is, however, a chemical-free method for decaffeination and was developed in Switzerland in the 1980's.

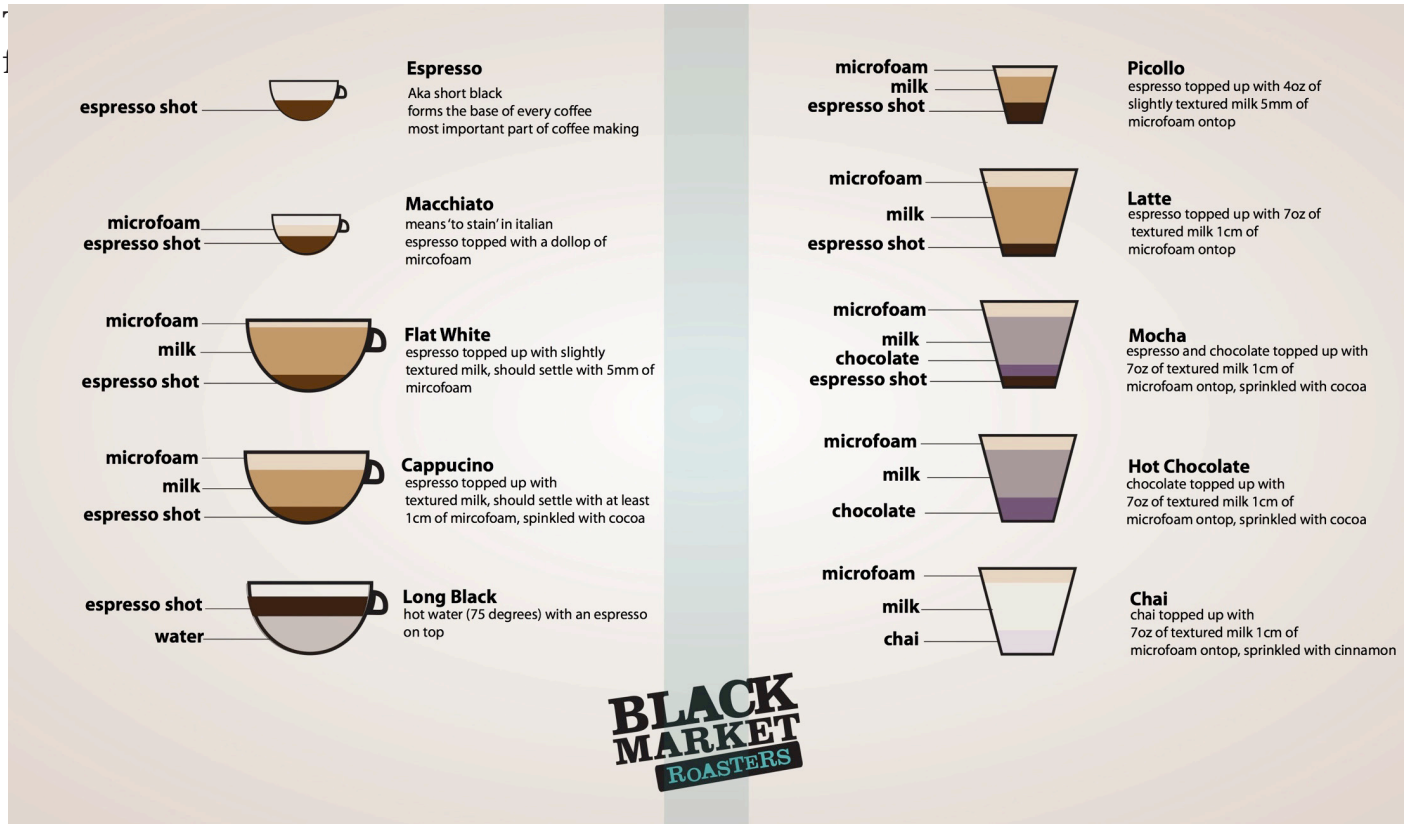
It involves immersing the beans in water so that they expand and the cells are opened up. They are then rinsed with a Green Coffee Extract (GCE) solution that extracts the caffeine but leaves other essential cell structures within the coffee bean. The principle behind this lies in the fact that if coffee beans are soaked in a saturated GCE solution, only the caffeine will be removed leaving the other chemical structures intact.

Coffee contains over 400 chemicals which all play a part in the taste and aroma of the final drink. So it is very important that these remain in the coffee bean. Caffeine is water-soluble. Therefore, once the beans are immersed in the liquid, the caffeine can come out.



Module 4: Coffee Types

Coffee Menu



Module 5:
Working with Coffee

Storing and Using Fresh Coffee

What is fresh coffee?

Coffee is a fresh product! It was previously thought that green beans and even roasted beans could be stored for a long period of time with minimal effect on the product. However, research into the chemistry of coffee has shown that both degenerate over time and are greatly influenced by the environment in which they are stored.

Green beans, once dried can be stored for up to two years. However, recent studies show that the fresher the green beans are, the better they taste. The quality can also be dramatically affected by moisture levels and temperatures. The use of grain-pro bags is now being employed by many estates and co-ops to ensure green beans remain in a stable environment during their travel from origin to roaster and to improve storage time.

For freshly roasted beans, the window of opportunity is small. After two weeks, many of the volatile aromatics have dropped away from the bean, and subtle flavours are lost. In particular, the 'sparkling' nature of coffee, that gentle acidity that dances on your tongue when you drink a fresh coffee would have disappeared.

A roasted coffee bean may look smooth on the outside but on the inside, there are thousands of tiny little pockets which contain gases. These gases are formed during the roasting process as carbohydrates are converted into sugars during what is called the mallard process. As a roasted bean ages, these gases escape and the coffee becomes dull and lifeless.

When the coffee has just been roasted, these gases are very active and can cause irregularity in exaction when used for espresso. It is for this reason that we allow roasted coffee to 'rest' or 'degas.' We find that at the moment, our house blend tastes best when served 6 days from roast, this is referred to as 'the sweet spot.' However, fresh coffee can be used anywhere between 2-14 days from roast.

So what is fresh coffee? It is coffee that is less than two weeks from roast!

How to store coffee

Not in the freezer! And not in the fridge!

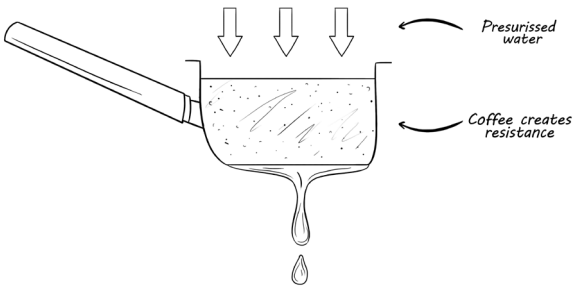
The best way to store fresh coffee is in a zip lock bag that has a one way valve. A one way valve allows the coffee to degas as it ages but prevents any fresh air from getting in and thus slowing down the ageing process.

How Extraction Works

What Happens During Extraction

The basic principle of making an espresso is resistance verses force. Your coffee in the portafilter creates resistance against the force of the water being pushed through the coffee at a high pressure by the coffee machine.

The aim is to have the water run equally through all parts of the coffee. If all of the coffee in our portafilter is exposed to the same amount of water for the same length of time then we get a good extraction result.



An espresso = Water, Oils, Solids, Caffeine + heaps of other chemicals which create the flavor that we so desire.

Common Problems in Extraction

What is a good extraction?

A good extraction = a good espresso (a balanced shot displaying sweet, sour, salt & subtle bitter flavour notes and should have a pleasant mouth feel).

A good extraction is when the perfect balance is achieved between the water, oils and solids. We aim to extract between 18% and 22% of the coffee into our espresso. This is what makes a good espresso.

Channeling

Channeling is caused by bad dosing or grooming which results in water 'channeling' through one part of your portafilter more than the other parts. Water will always find the easiest path to travel through the coffee dose in your portafilter. This means if there are any irregularities in your dose, the result will be an uneven extraction.

To avoid channeling, we must ensure we have a level tamp and apply an even pressure to the entire puck.

Grind Size & Dose Irregularity

An extraction can be altered by changing the resistance against the water. This can be done through dose (e.g. If you have more coffee in your basket you are creating more resistance) or through grind (i.e. If the coffee grinds are very fine, it will be harder for the water to get through the coffee than if they are very coarse).

Dose irregularity is one of the major variables within making an espresso and we can easily control this by weighing our dose. As mentioned before, the amount of coffee we put in our filter changes the resistance against the water and, therefore, affects our flow-rate.

Consistent dose weights mean we can make changes to our flow-rate by adjusting our grind size. If we don't know if our dose is extracted then how do we know if a fast extraction is due to our dose level or the grind size?

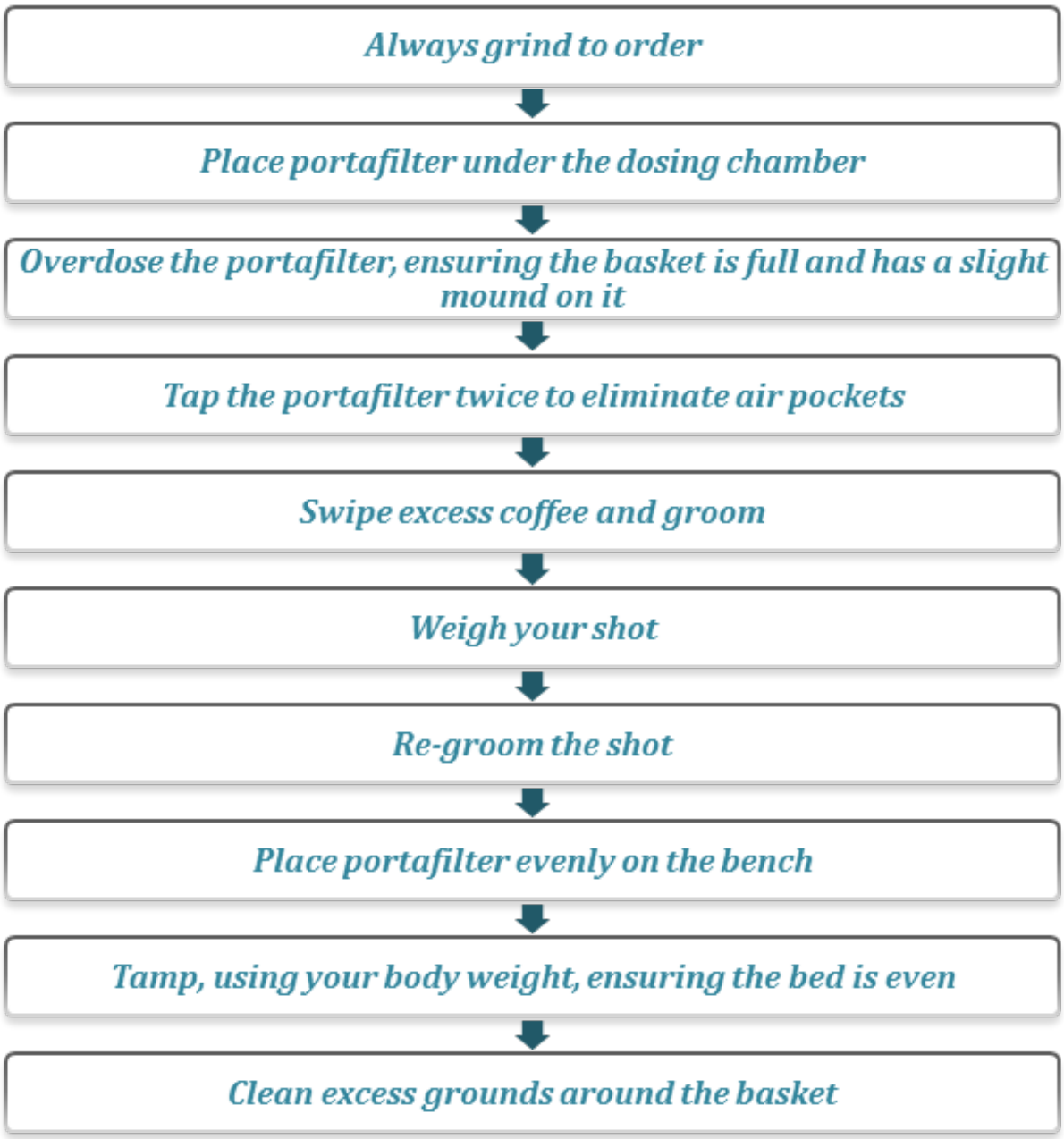
Over extraction & Under extraction

Over extraction happens when coffee is exposed to water for too long. That is, you let your shot run for longer than the desired volume. But it can also be caused by using a grind that is too fine. The finer your grind is, the more coffee particles you will have in your portafilter and, therefore, the water passing through will be exposed to a greater surface area or coffee. This can lead to over extraction, bitter taste, grainy texture with a bad mouth feel.

Under extraction is the exact opposite and is caused by the coffee not having enough exposure to water. That is, if you stop your shot too early before the desired volume is reached or by using a grind which is too coarse. The coarser your grind is, the less coffee particles you have in your portafilter and less surface area for the water to travel by. This can lead to under extraction, sour taste, lacking body and can also taste acetic.

How to Dose Coffee

How to Dose (with a manual grinder):

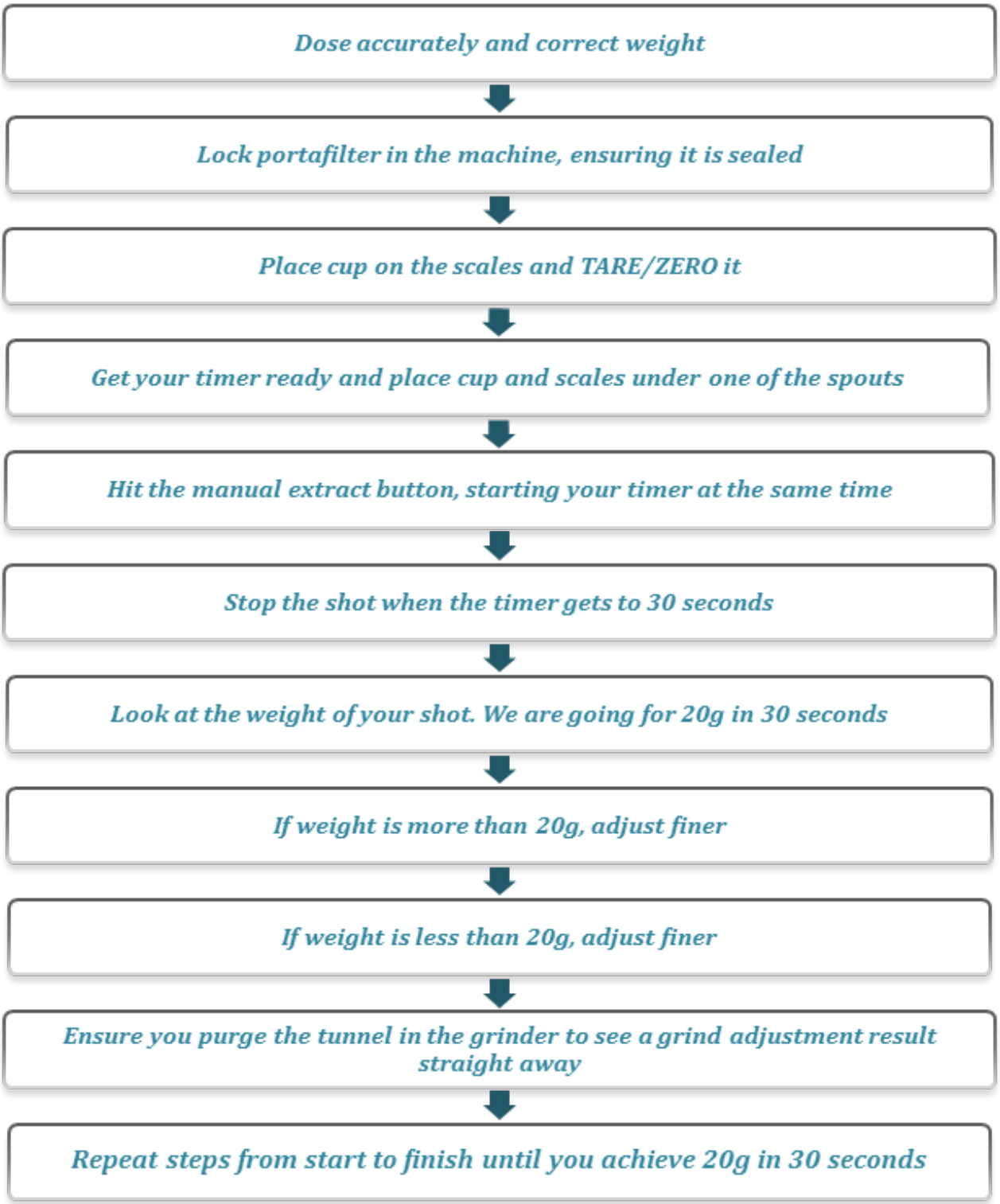


How to Extract Coffee

TOOLS NEEDED:

1. Scales
2. Timer

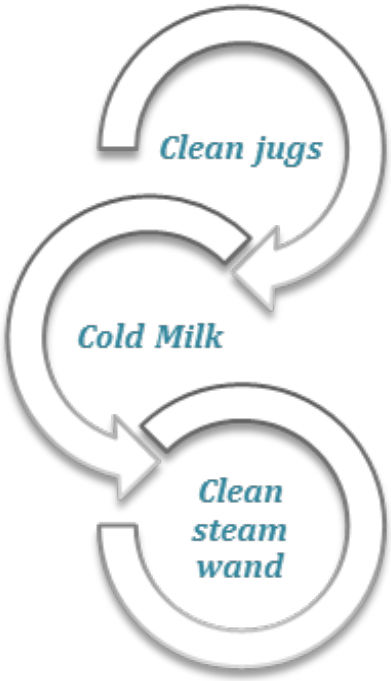
METHOD:



Module 6:
Working with Milk

How to Make Silky Milk

PREPARATION:



PROCESS:

We are aiming for a shiny, paint-like texture with no bubbles. Therefore, we need to limit the agitation or air that we let into the milk

↓

When steaming, first aim to get the milk spinning in the jug, then let a little air at the start, while listening for the noise

↓

As soon as you let some air in for 2 seconds, put the wand back under the milk and aim for silence, keeping the milk spinning in the jug

↓

Aim for 62 degrees, use a thermometer, any hotter and you will lose sweetness and get bubbles, any cooler and you will get complaints

↓

Then let your jug rest on the bench without touching it for at least 10 seconds

How to Pour Latte Art

PREPARATION:

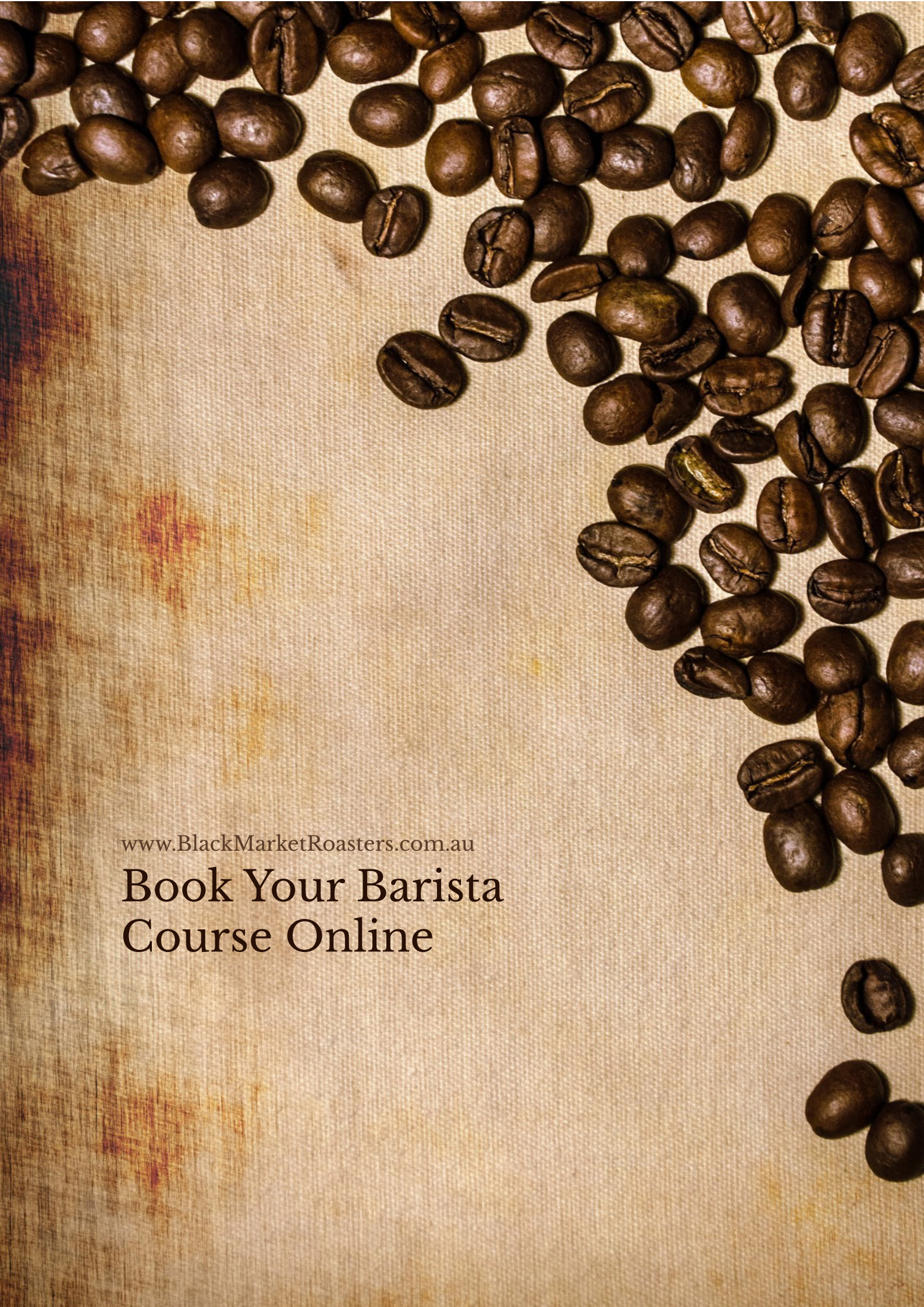
Texture your milk to order → *Use 1 jug per coffee* → *Freshly make the shot of coffee so there is nice cream to work with*

↓

Now combine the foam and the milk in the jug by rolling the milk in the jug round in a circle → *Rap your milk on the bench to release any air bubbles. Twice should be enough* → *Rest your milk for 10 seconds*

↓

Now you are ready to pour your design



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