

Espresso Prep

July 16, 2017

This document is a true “work-in-progress” and, hopefully, does not turn into too much of a rant.

Water

Purpose

The Statistics & Standards Committee of the Specialty Coffee Association of America has determined the following standards for the water used to brew specialty coffee. For a superior quality extraction of coffee solids, the brewing water should have these characteristics:

Characteristic	Target	Acceptable Range
Odor ¹	Clean / Fresh, Odor free	
Color ²	Clear color	
Total Chlorine	0 mg/L	
TDS ³	150 mg/L	75 - 250 mg/L
Calcium Hardness	4 grains or 68 mg/L	1 - 5 grains or 17 mg/L - 85 mg/L
Total Alkalinity	40 mg/L	At or near 40 mg/L
pH	7.0	6.5 to 7.5
Sodium	10 mg/L	At or near 10 mg/L

1 Odor is based on sensory olfactory determination

2 Color is based on sensory visual determination

3 TDS measured based on a 4-4-2 conversion

The *Target* is the most desirable point in the *Acceptable Range*, although falling within the range is considered meeting the standard. These variances are in place to take into consideration real world circumstances, and the target gives the optimum measurement of each characteristic to strive for.

For details of testing equipment & protocols, please see the SCAA Water Quality Handbook.

Let's start at the source – the water you will use in preparing espresso. The above table shows what the Speciality Coffee Association of America (SCAA) has to say about water quality:

The source of the above document is here: <http://www.scaa.org/PDF/ST%20-%20WATER%20STANDARD%20V.21NOV2009A.pdf> .

While this water will produce tasty espresso, it may be better to opt for the lower ranges of TDS and calcium hardness to minimize scale formation in your machine. Gerber Pure (available at most CVS stores) comes very close to meeting the SCAA standard “right out of the bottle”. Here is another good table on water quality:

Water Characteristics
(units are mg/L ~ = ppm)

Characteristic	SCAA Target	SCAA Range	LM-USA	Synesso	Nuova Simonelli		
Odor	Clean/Fresh Odor Free	Clean/Fresh Odor Free					
Color	Clear Color	Clear Color					
Total Chlorine	0	0	0 - 0.1	0			
TDS	150	75 - 250	90 - 150	30 - 200	50 - 250		
Total Hardness			70 - 100				
Calcium Hardness	68	17 - 85		< 85	< 51.0		
Total Alkalinity	40	At or near 40	40 - 80	< 100	10 - 100		
pH	7.0	6.5 - 7.5	6.5 - 8.0	6.0 - 8.0	6.5 - 8.5		
Sodium	10	At or near 10					
Iron			0 - 0.02	0			
Silica							
Sulfate							
Hydrogen Sulfide							
Manganese							
Nitrate							
Free Chlorine			0 - 0.05		< 0.25		
Chloride			0 - 30	0			

Preparation of the Coffee Puck

These pics, in part show the preparation of a double-shot using a Quickmill Anita and a Mazzer Mini-E grinder fitted with Mazzer Super Jolly burrs.

Machine has been on and idle for an hour – a good warm-up time. Yes, it can be 50 minutes but, what the heck?

I use locally roasted coffee beans purchased from various WholeFoods stores or from one of the many quality coffee bars in town (Washington DC metro area).

As you can see, I have about 10 identical baskets – ridgeless 14g doubles available from this source: http://www.espressoparts.com/EPMZ_107A?&search_id=1178803.



I grind directly into a spare cappy cup and “fluff up” the grinds using one of the original probe tips from the thermometers I sell. This could be termed a slightly modified Weiss Distribution Technique (WDT) – described in detail here: <http://www.home-barista.com/weiss-distribution-technique.html>.

I’m currently using two identical 18g VST baskets which I load to a range of 18.0 – 19.0 grams depending on the days off roast.



I have a clean, dry basket resting on the scale. When I turn the scale on, it automatically tares to 0 grams. Some scales work this way, some don't.





I “spoon” grinds into the basket until I reach 18 grams. As the coffee ages, I increase this to about 18.5 grams, maybe 19.0. I then do a north-south leveling with my forefinger, followed by a circular leveling much like the tonearm on a record turntable.



The grinds are sorta level with the top of the basket prior to tamping. Since all of my portafilters have their springs removed, I just gently insert the basket into my double spouted portafilter tamping stand which is resting on a rubber mat.



I then tamp the grinds down with about 20-25 lbs force. This forms a relatively consistent coffee puck and pushes the grinds together (and down) such that they will not contact the shower screen when loaded into the machine.



Note that I put the little basket in there to hold the PF level – I only have two hands and the camera needs both of them.



Now here is where the methodology can vary like the wind but I will save that for a later update to this hastily put-together document and provide a last pic of the results.



Note that I was using the double spouted PF as a “poor man’s” tamping stand. Actually, it is a pretty expensive tamping stand if you had to buy one but most machines come with two portafilters. My spring-less single spout PF, which I habitually use for brewing, remains in the machine all the time.

Prior to inserting the tamped basket into the single spout PF, I remove the portafilter and wipe/shake it dry.

The Rationale:

High quality portafilter baskets are very inexpensive. You can buy six of these for less than \$7 each and they will ship free (sometimes) depending upon the various sales offers from Espresso Parts:

http://www.espressoparts.com/EPMZ_107A?&search_id=1178803

It is far easier to prepare the basket when it is out of the portafilter.

Digital Scales:

Needless to say, there are hundreds of different digital scales available. I like those that have a 0.1 gram resolution, take ordinary AAA or AA batteries, and are non-illuminated. Here is a good example of one that meets these criteria:

<http://www.harborfreight.com/digital-pocket-scale-93543.html>

On Temperature Management:

- a) Do all blends require this temp consistency, or
- b) Do they require a small swing in temp during the extraction, or
- c) Do they work within an acceptable range between 2 temps during the extraction, or
- d) Do they work to different personal likings at different temps (i.e., I am testing a new blend, and the extraction at 2 different temps could potentially result in 2 slightly different flavor profiles that each satisfy the different palettes of 2 different customers.

Brewing “Regular” Coffee using the Clever Drip and Hario Skerton Grinder

You will have more fun with these two devices than you could ever imagine. I haven't tried it yet but I do believe you could brew two smallish cups with the Clever brewer – it could be close. Lately I have been using it as my first drink in the AM and then it is on to the three or four cappy's.



http://www.sweetmarias.com/prod.hario_skerton.php

55 grams of coffee per liter of water (SCAA ratio) or up to 70 grams per liter (SCAE ratio). The 55 grams works out to be 9.76 grams per 6 ounce cup. The 70 grams works out to be 12.42 grams per 6 ounce cup.

SCAA is the abbreviation for the Speciality Coffee Association of America.

SCAE is the abbreviation for the Speciality Coffee Association of Europe.

medium/coarse ground coffee (around a half turn from the espresso setting on a commercial espresso grinder or either the coarsest drip or finest FP setting on a home or supermarket grinder)