Espresso or Coffee?
More Different Than You Think
(Intermediate Level)

By

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Workshop Objectives

Attendees wi ll Learn:

Å 1. The Definition of Espresso.

Å 2. To Distinguish between Espresso and Brewed Coffee.

Å 3. The Significance of Crema.

Å 4. How to make Espresso ñtasteò as Fresh Ground Coffee Smells.

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Espresso or Coffee?

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North American Espresso

An Overwhelming Majority of what is made and sold as Espresso in North America, whether consumed as straights, or in Cappuccinos or Lattes,

is not Espresso at all.

It is merely Steeped Coffee, albeit made with expensive Espresso Machines.

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Reasons for This Sad State

- Owners do not appreciate di fference between Real Espresso and Ordinary Coff ee
- People working behind the counter are poorly trained; receiving less than four hours of training
- Most Blends offered are f or brewed coff ee, not for espresso; and then roasted dark and oily
- Espresso Machines are conf igured for production speed rather than Espresso Quality
- Grinders are selected on the basis of cost; not its ability to produce quality espresso

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Definition of Espresso

Italian Espresso is about an ounce of a dark, smooth, low-acid, heavy-bodied, aromatic, bitter-sweet coffee drink topped by a thick reddish brown foam of tiny bubbles.

In more technical terms, espresso is a colloidal dispersion produced by emulsifying the insoluble oils in ground coffee.

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Extraction Parameters

	Brewed Coffee	Espresso (single)
Ground Coffee	7 to 9 grams	7 to 9 gram
Water	5 to 6 oz	1 oz
Water Temperature	195 to 205 deg F	195 to 205 deg F
Grounds in Solution	18 to 22 % by wt	18 to 22 % by wt
Brewing Time	3/4 to 4 minutes	30 seconds
Grind	Medium to Coarse	Very Fine
Water Pressure	1 Bar	8 to 10 bars

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Espresso Extraction

These oils do not mix with water; but under intense pressure, oils are extracted from ground coffee, formed into microscopic droplets, and suspended in the coffee concentrate.

It is this emulsification of the oils that distinguishes an Espresso from strong coffee.

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Espresso Mechanics

- 1. Water under pressure represents ñpotential energy.ò
- 2. If permitted, this energy will be converted to ñkinetic energyò, and the water will gush out.
- 3. Instead, this energy must be used to drive out the oils in ground coffee.
- 4. These oil bubbles will capture the aromatic gases released.

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Espresso must ooze out like warm honey, not gush out l ike water

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Crema is the single most important indicator of a well made espresso

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Initial Pour Should Look Like Molten Chocolate

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Look for the Characteristic Tiger Stripes

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Energy Dynamics

- Pressurizing water packs potential energy in water molecules
- This energy must not be converted to kinetic energy (coffee squirting)
- This energy must be used to drive the oils out of ground coffee
- All energy must be spent in the coffee with none left for espresso to squirt out

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Significance of Crema

- 1. Evidence of Oil Emulsification.
- 2. Alters Properties of the Beverage: mouth-feel, density, viscosity, wetting power, and foam forming ability.
- 3. Captures Coffee Aroma: Released to the nose as the Espresso is consumed.
- 4. Attaches to Taste Buds; Inhibits bitterness, and provides long after-taste.

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Flavor Perception

Sensory Organs involved in Flavor Perception are those of Taste, Smell, and Touch; involving Nerve Endings located in the Nose and Mouth.

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Taste and Smell Detection

	Taste (Gustation)	Smell (Olfaction)
Primary Organ	Tongue	Nose
Sensors	Taste Bud Receptors	Olfactory Sensors
Basic Receptors	Sweet, Salty, Sour, & Bitter	Thousands of Identifiable Aromas
Medium	In Liquid Form	In Gaseous Form
Detection Limits	~ 1000 ppm	~ 1 to 10 ppm

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Goal for Espresso

A Quality Espresso should ñtasteòas good as Fresh Ground Coffee Smel ls

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Summary

- 1. Oils *must* be emulsified for it to be an Espresso.
- 2. Crema is the most important indicator of a well made Espresso.
- 3. Oil droplets capture the aromatic vapors released on espresso extraction.
- 4. Crema delivers the intense coffee flavors and the long after-taste.

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