

PUCK PREPARATION

WDT – VERTICAL TAPS – HOG TOOL

THE FORCE TAMPER – BLOOMING SHOTS – DECENT ESPRESSO V1.1



STÉPHANE RIBES – JUNE 2020

PUCK PREPARATION TECHNIQUES COMPARISON

MAIN FINDINGS (JUNE 2020)

- With the tested setup and blooming extraction profile, the best and **most consistent results** were obtained when the 2 below techniques were combined:
 - ✓ **Weiss Distribution Technique** in the complete height of the puck, with a home-made tool (0.4 mm needles)
 - ✓ **Gentle vertical taps** before tamping
- The use of a **Hog tool** (95 spikes of 0.8 mm diameter) after WDT + gentle taps, right before tamping, had a big impact on the extraction dynamics – **faster wetting** of the coffee puck and **higher resistance** during extraction – and on the taste profile of the resulting espresso shots: **increased sweetness and fruity acidity**
- **No distribution** in the filter basket has sometimes produced tasty shots and high extraction yield values, but **less consistency** than the other best preparation methods tested
- The visual uniformity of the extraction did not always correlate with taste results, or extraction yield values
- The worst tasting shots had the weakest extraction yield values, the best ones the highest EY

PUCK PREPARATION TECHNIQUES COMPARISON

13/06/2020 TESTS

- 18.5 g coffee dose *
- Same grind setting

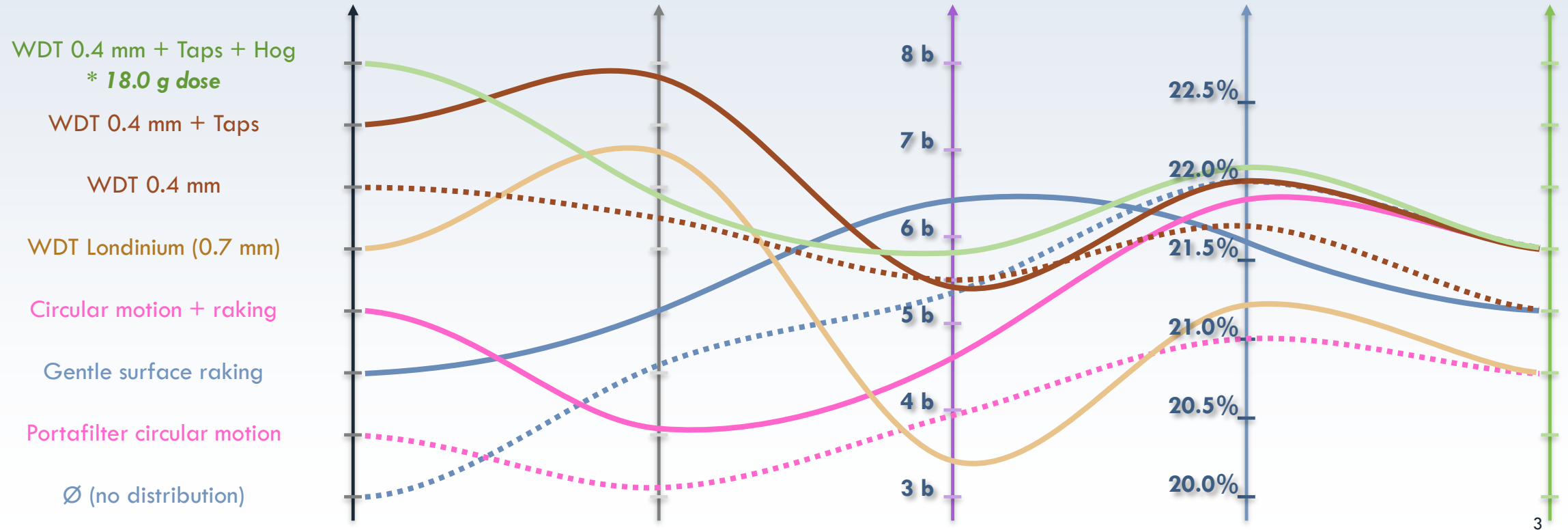
Puck prep
complexity

Visual uniformity
of the extraction

Puck resistance (max.
extraction pressure)

Extraction
Yield

Taste
score



PUCK PREPARATION TECHNIQUES COMPARISON

23/06/2020 TESTS

Same grind setting

Puck prep
complexity

Visual uniformity
of the extraction

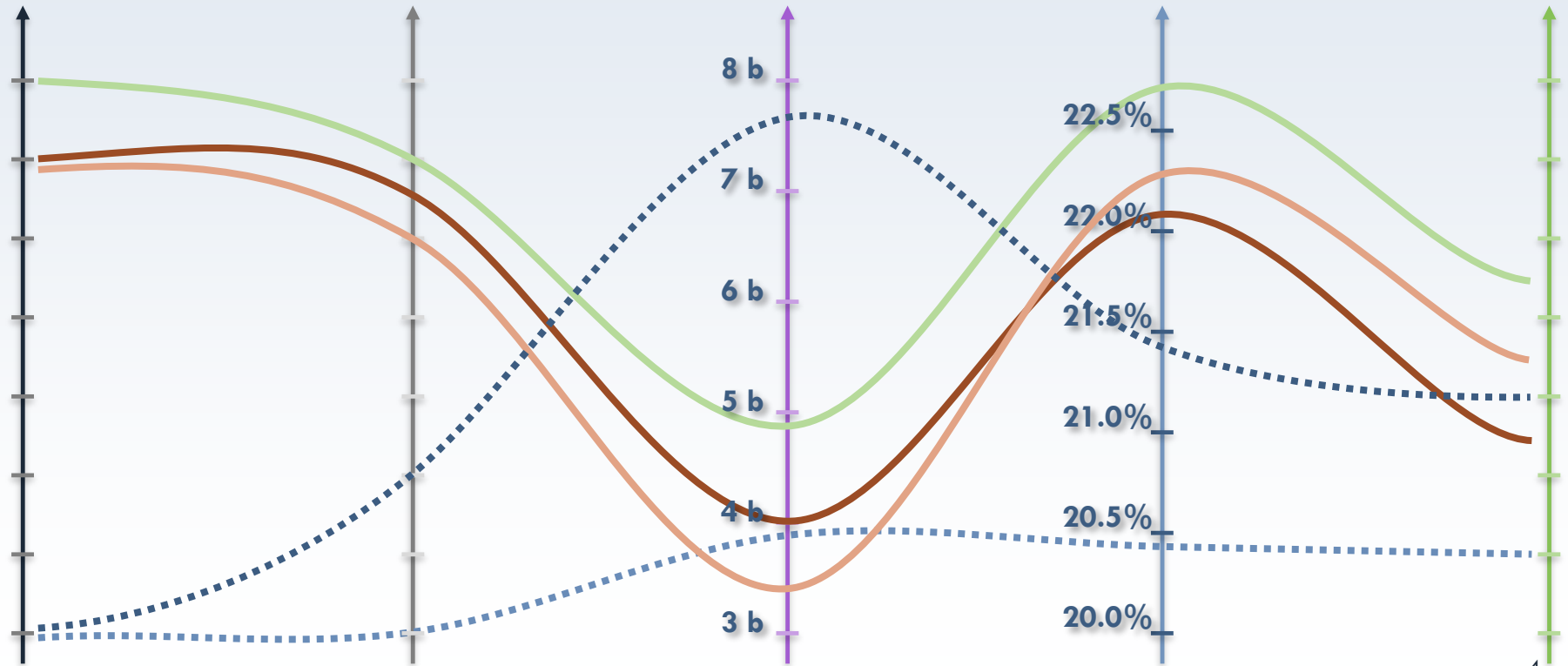
Puck resistance (max.
extraction pressure)

Extraction
Yield

Taste
score

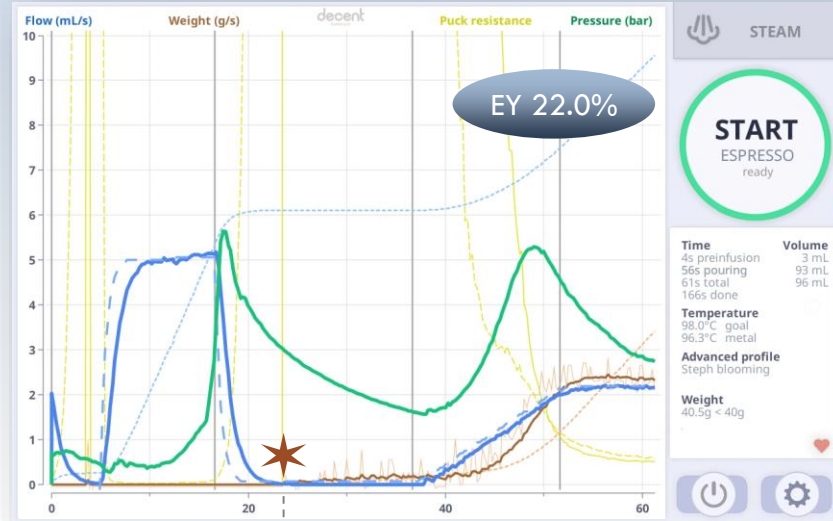
WDT 0.4 mm + Taps + Hog
(18.5 g)
WDT 0.4 mm + Taps (19.0 g)
WDT 0.4 mm + Taps (18.5 g)

No distribution (19.0 g)
No distribution (18.5 g)

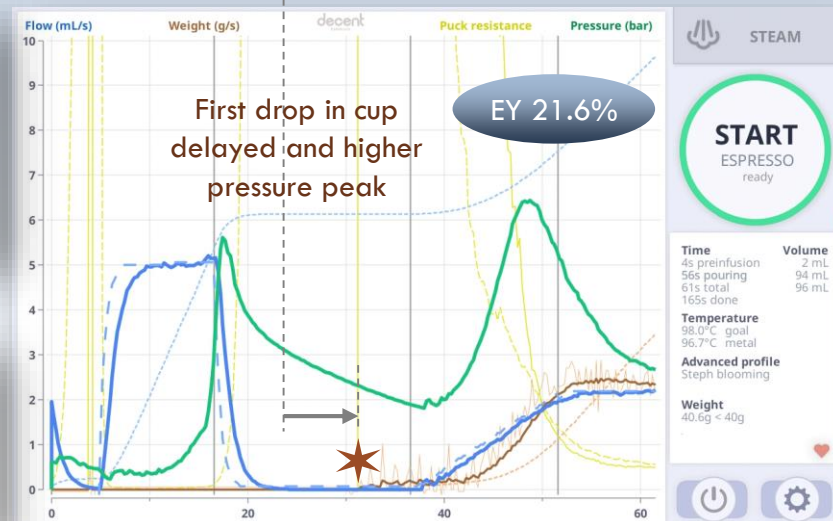


PUCK PREPARATION – 13/06 TESTS (1/4)

No distribution before tamping

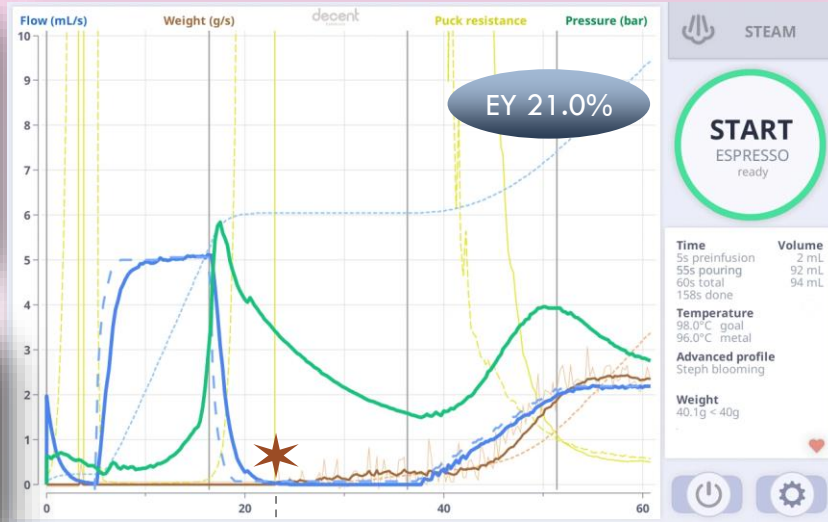


Gentle surface raking with a WDT tool (0.4 mm needles x3)

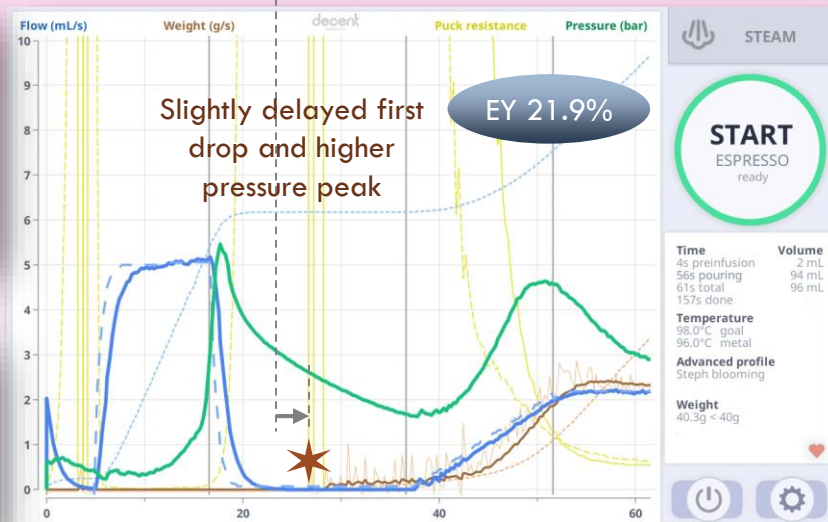


PUCK PREPARATION – 13/06 TESTS (2/4)

Circular motion of the portafilter

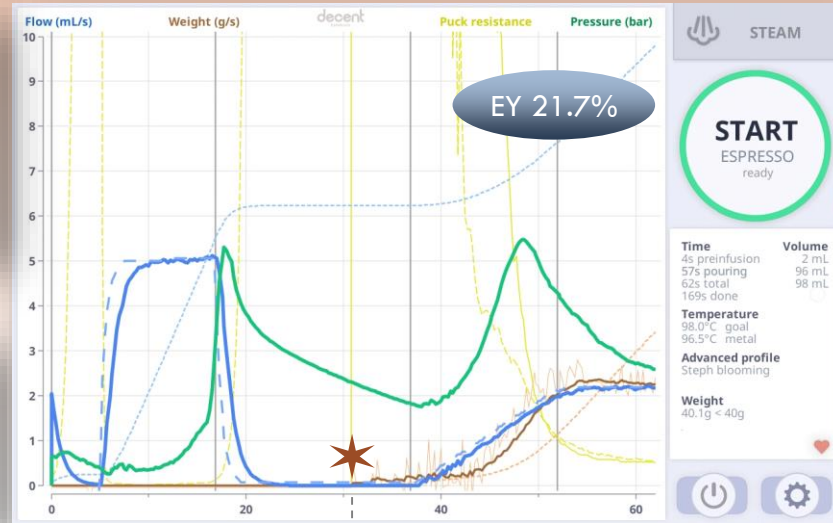


Circular motion + gentle surface raking with a WDT tool (0.4 mm needles x3)

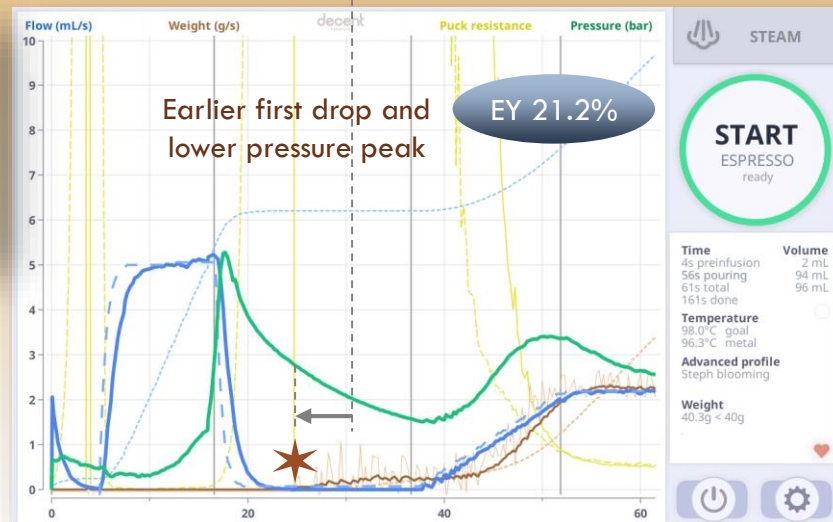


PUCK PREPARATION – 13/06 TESTS (3/4)

Weiss Distribution Technique (entire puck height) – Home-made tool with three 0.4 mm needles

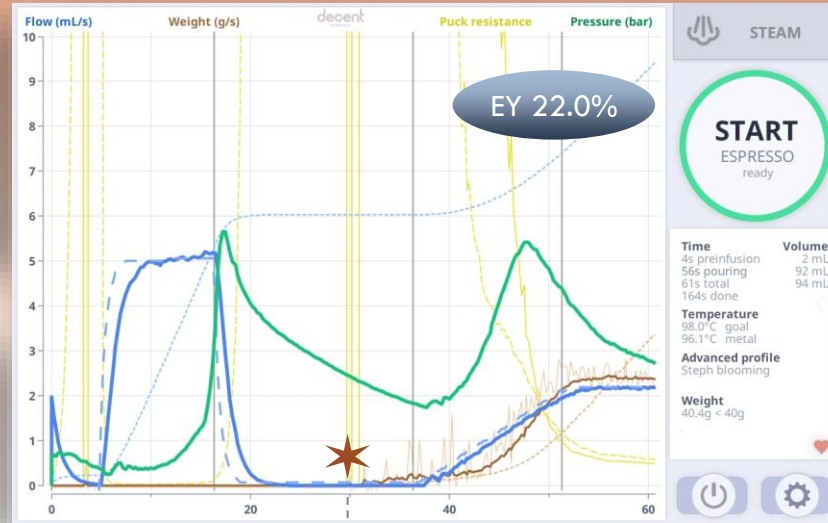


Weiss Distribution Technique (entire puck height) – Londinium tool

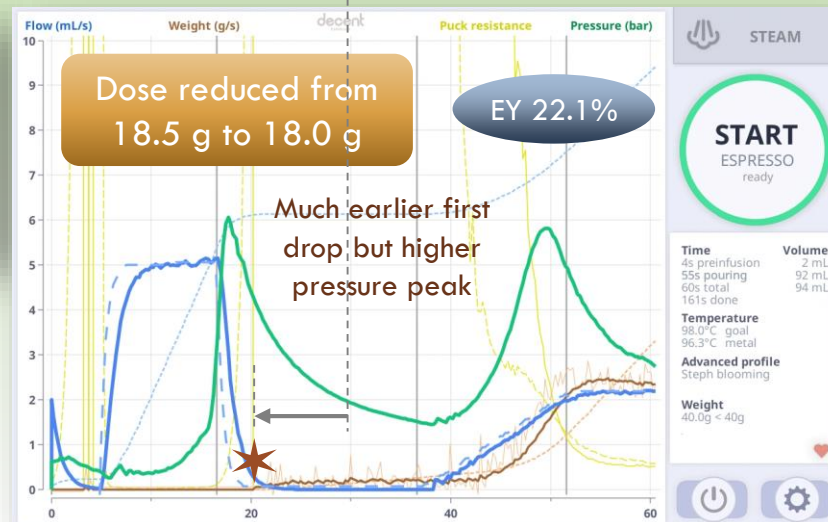
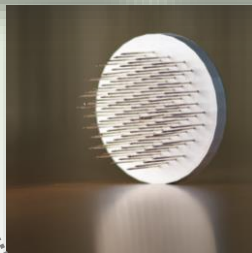


PUCK PREPARATION – 13/06 TESTS (4/4)

WDT with 0.4 mm needles + Gentle vertical taps (x10)

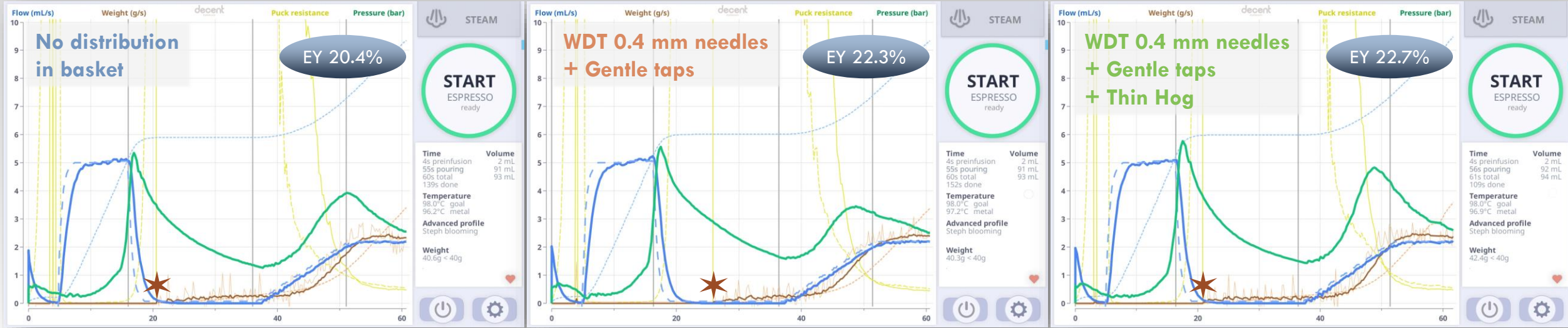


WDT with 0.4 mm needles + Gentle vertical taps + Thin hog tool

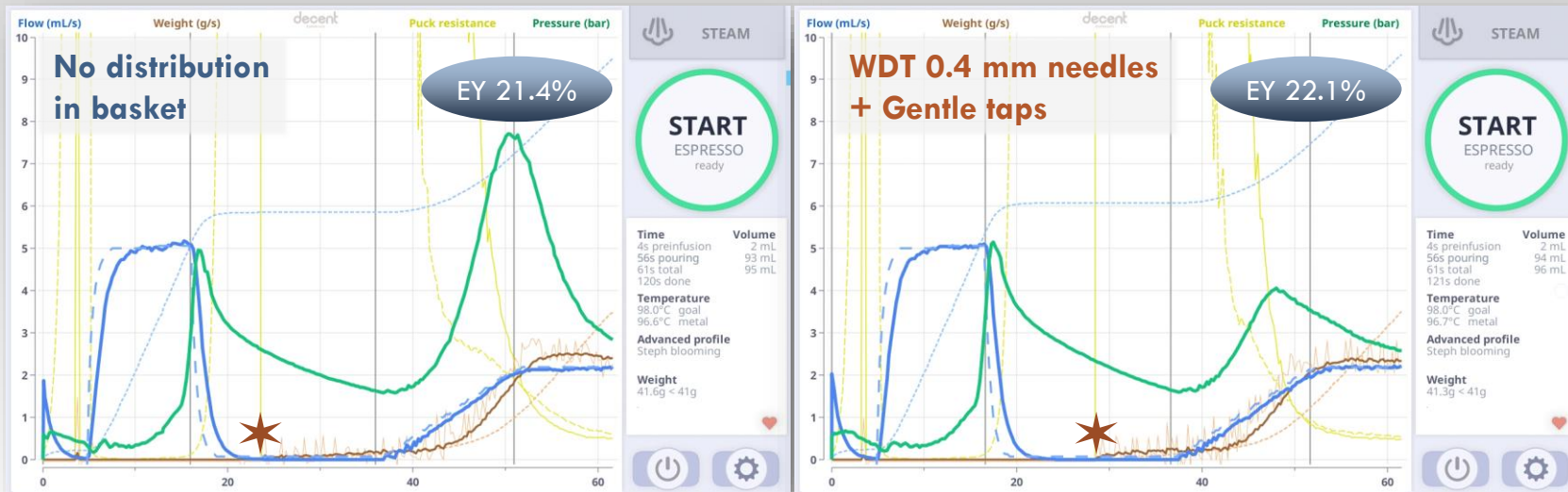


PUCK PREPARATION – 23/06 TESTS (1 / 2)

18.5 g coffee dose

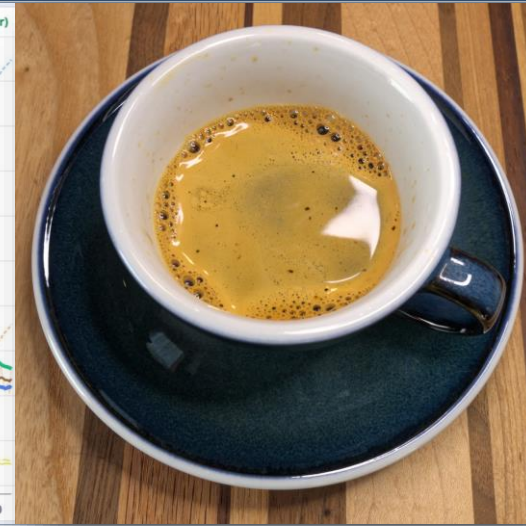
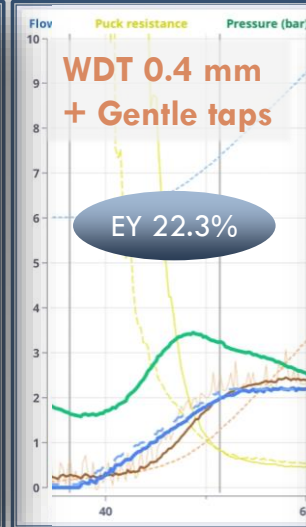
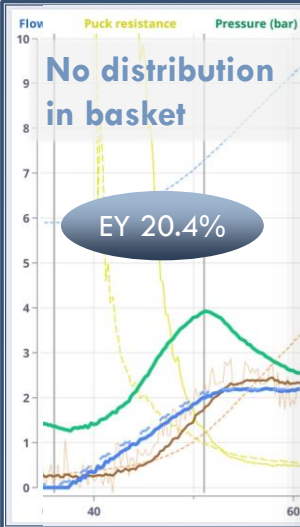


19.0 g coffee dose

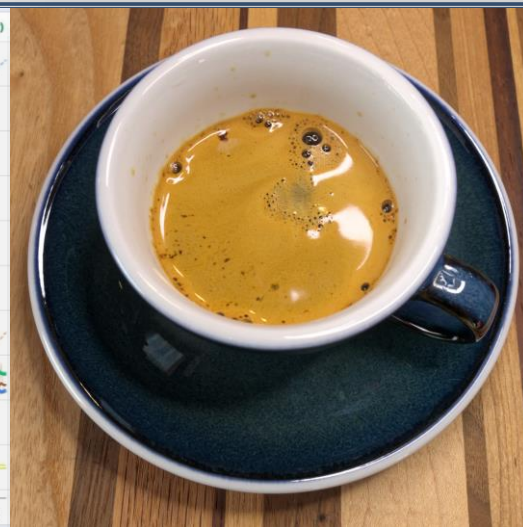
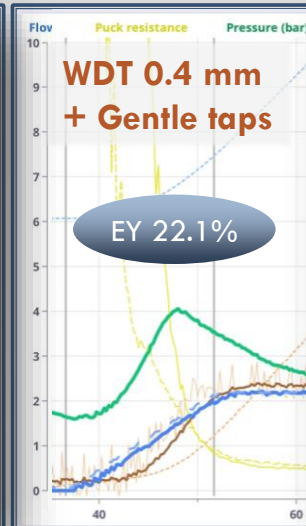
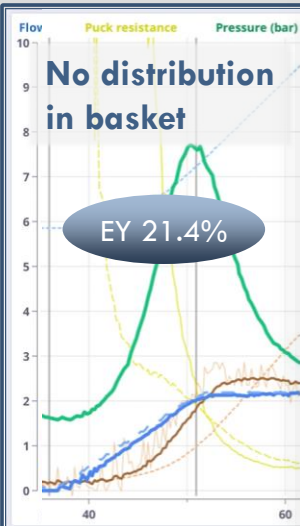


PUCK PREPARATION – 23/06 TESTS (2/2)

18.5 g coffee dose

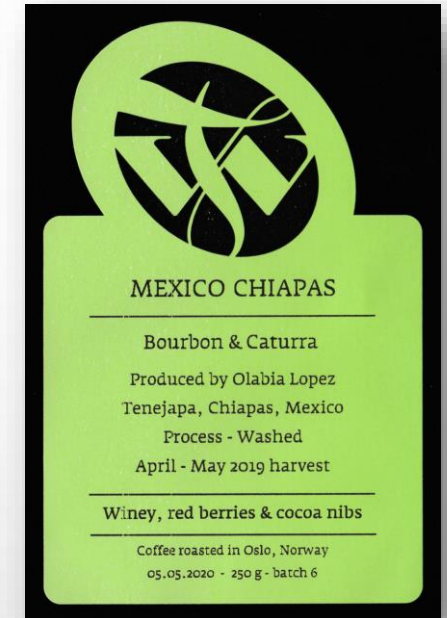


19.0 g coffee dose



PUCK PREPARATION TEST PROTOCOL

- **Decent Espresso Machine DE1PRO v1.1** with a (red) Cafelat 8.0 mm silicone gasket
- IMS SI 200 IM shower screen
- Mahlkönig EK43 S grinder – SSP burrs “High Uniformity” with Silver Knight coating
- Montille water (Le Mont Dore, France) – **adjusted to 40 ppm eq. CaCO_3 alkalinity and 90 ppm eq. CaCO_3 total hardness**, with sodium carbonate and Epsom salts
- Portafilter pre-heating: 80°C in a kettle
- Complete drying of the basket and shower screen before each shot, with a clean tissue
- Single dosing of the beans, ground frozen in a double walled stainless steel cup
- Same grind setting for all shots (EK1.7)
- VST 22g (ridgeless) filter basket
- 18.5 g dose (unless otherwise mentioned) and target brew ratio of 1:2.2
- **The Force Tamper with a 58.5 mm smooth flat base** – Standard spring compression: 24 lbs
- TDS measurements: Atago PAL zeroed with adjusted Montille water – no filtering of the coffee samples – all samples measured at room temperature after vigorous stirring
1 data point = average of 3 to 5 measurements of each coffee sample



20 SEC BLOOMING AND SLOW RAMP (15 SEC) 2.2 ML/S EXTRACTION

The image displays four sequential screenshots of a coffee machine's advanced settings interface, numbered 0 to 3, illustrating the configuration of a 20-second blooming and 15-second slow ramp extraction profile.

Screenshot 0: Shows the initial setup. The 'Steps' list includes: 1. lock portafilter!, 2. preinfusion, 3. low pressure bloom, 4. flow rise *, and 5. hold flow *. The '1: Temperature' is set to 99°C. The '2: Pump' section shows 'flow' at 0.0 mL/s and 'pressure' at 0.0 bar. The '3: Duration' is set to 5 seconds. The '4: Move on if...' section is empty.

Screenshot 1: Shows the configuration for the first step. The 'Steps' list is updated to: 1. lock portafilter!, 2. preinfusion, 3. low pressure bloom, 4. flow rise *, and 5. hold flow *. The '1: Temperature' is set to 90°C. The '2: Pump' section shows 'flow' at 5.0 mL/s and 'pressure' at 4.0 bar. The '3: Duration' is set to 30 seconds. The '4: Move on if...' section is checked.

Screenshot 2: Shows the configuration for the second step. The 'Steps' list is updated to: 1. lock portafilter!, 2. preinfusion, 3. low pressure bloom, 4. flow rise *, and 5. hold flow *. The '1: Temperature' is set to 92°C. The '2: Pump' section shows 'flow' at 0.0 mL/s and 'pressure' at 0.0 bar. The '3: Duration' is set to 20 seconds. The '4: Move on if...' section is checked.

Screenshot 3: Shows the configuration for the third step. The 'Steps' list is updated to: 1. lock portafilter!, 2. preinfusion, 3. low pressure bloom, 4. flow rise *, and 5. hold flow *. The '1: Temperature' is set to 92°C. The '2: Pump' section shows 'flow' at 2.2 mL/s and 'transition' at smooth. The '3: Duration' is set to 15 seconds. The '4: Move on if...' section is checked.

- Slightly adapted blooming profile
- The initial step “lock portafilter!” is optional: it prevents exposure of the coffee puck to the hot machine environment during the final warm-up of the brew water