

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

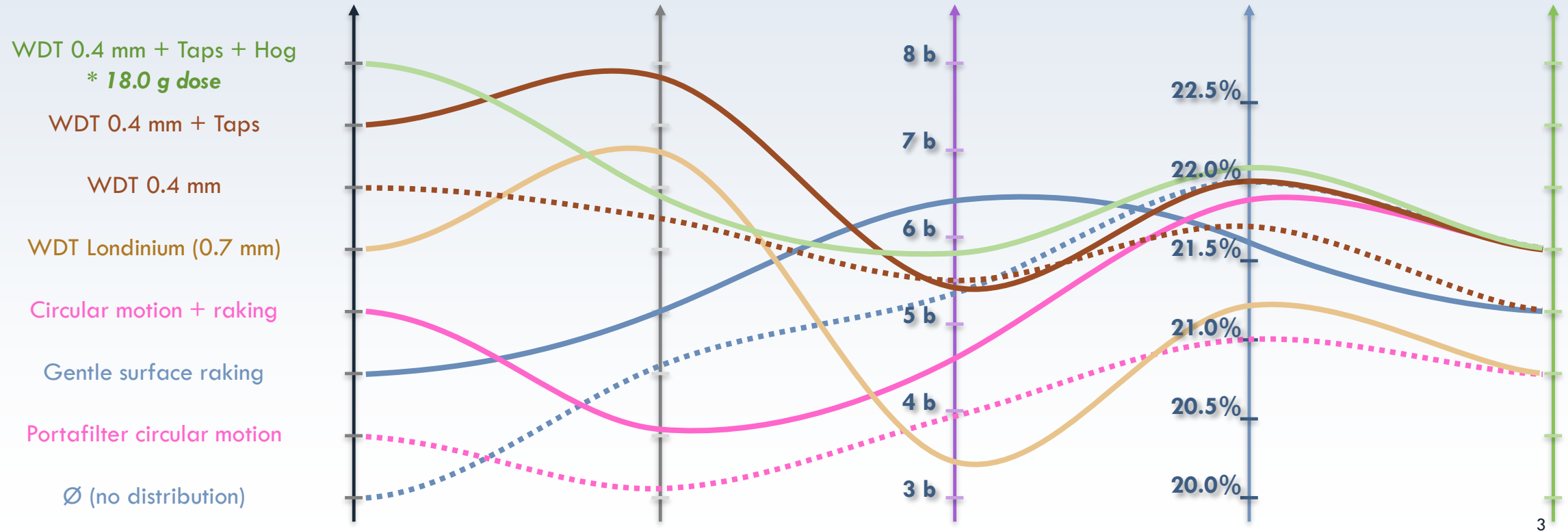
Puck prep complexity

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

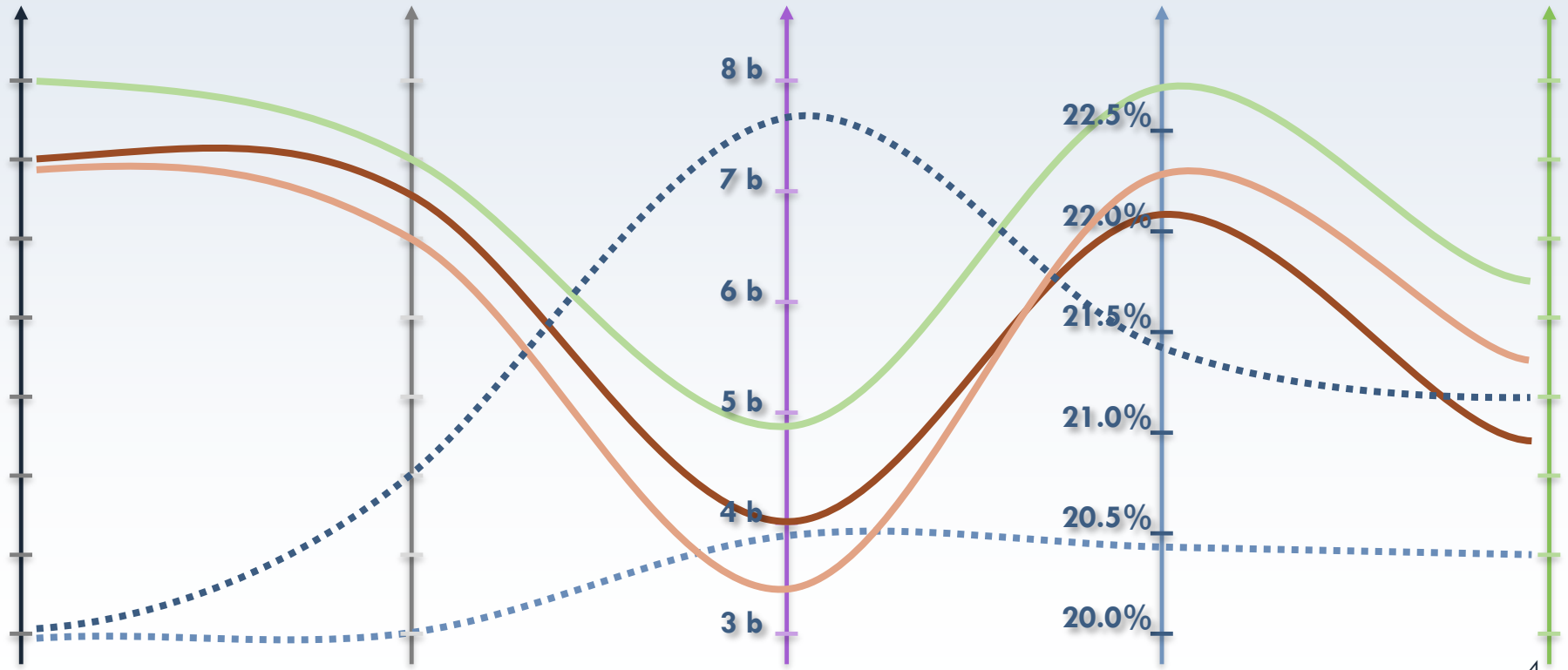
Puck resistance (max. extraction pressure)

Extraction Yield

Taste score

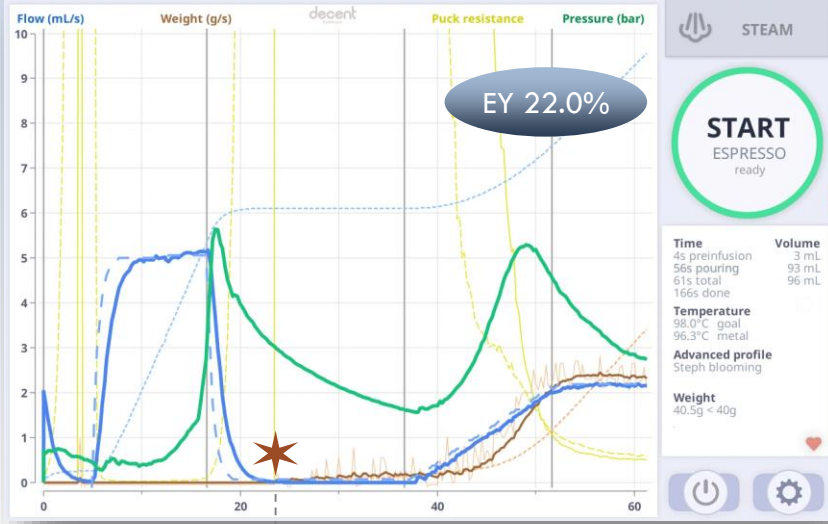
WDT 0.4 mm + Taps + Hog (18.5 g)
 WDT 0.4 mm + Taps (19.0 g)
 WDT 0.4 mm + Taps (18.5 g)

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

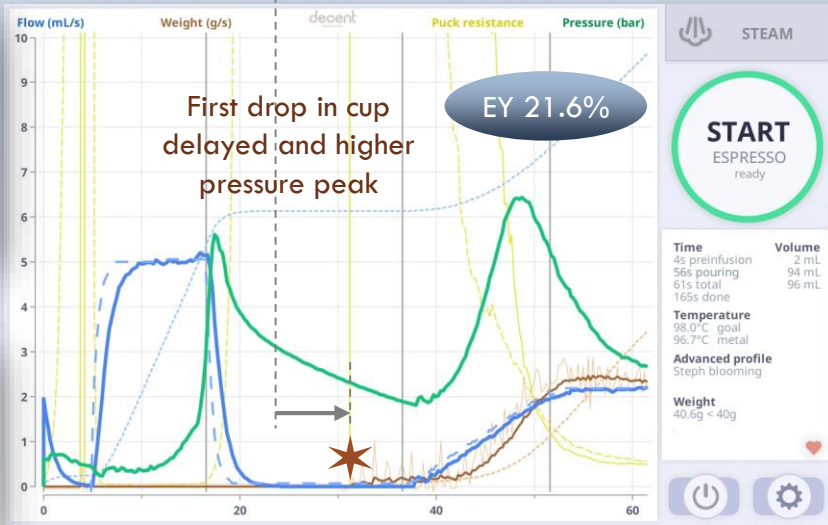


PUCK PREPARATION – 13/06 TESTS (1/4)

No distribution before tamping

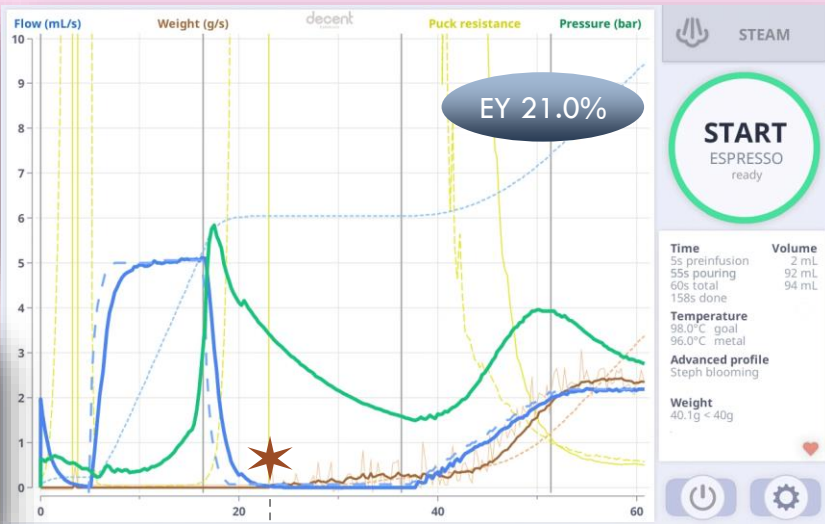


Gentle surface raking with a WDT tool (0.4 mm needles x3)



PUCK PREPARATION – 13/06 TESTS (2/4)

Circular motion of the portafilter

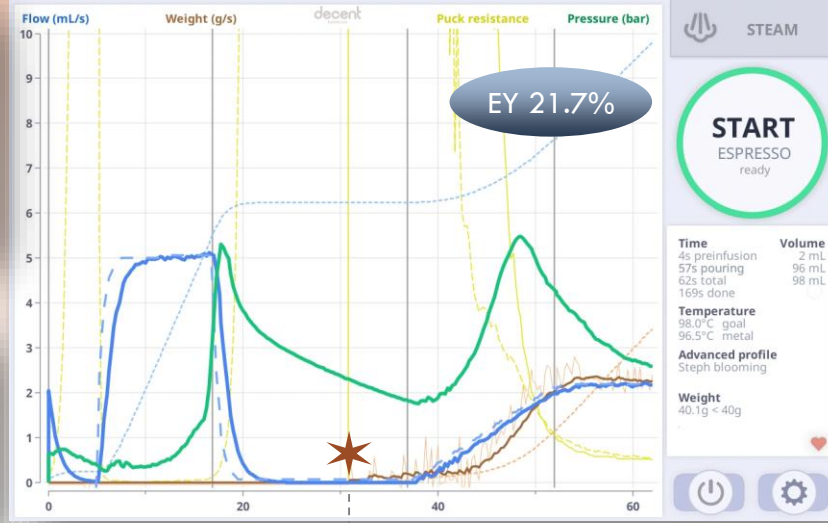


Circular motion + gentle surface raking with a WDT tool (0.4 mm needles x3)

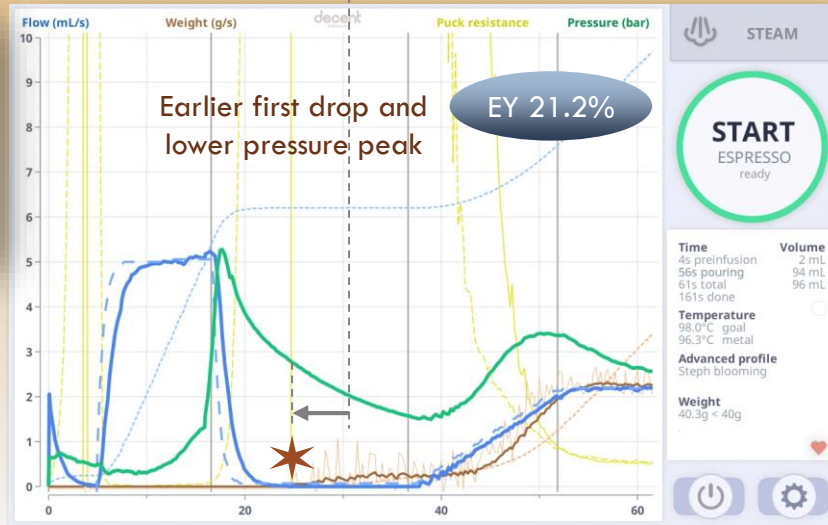


PUCK PREPARATION – 13/06 TESTS (3/4)

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

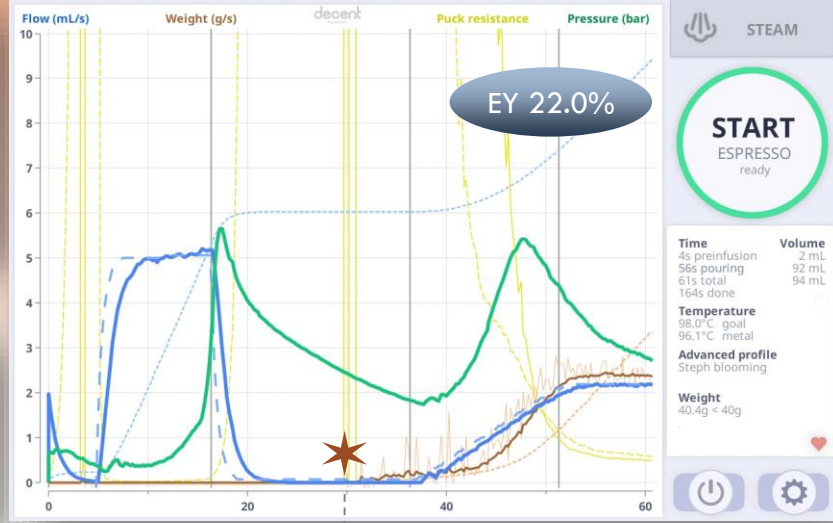


Weiss Distribution Technique (entire puck height) – Londinium tool

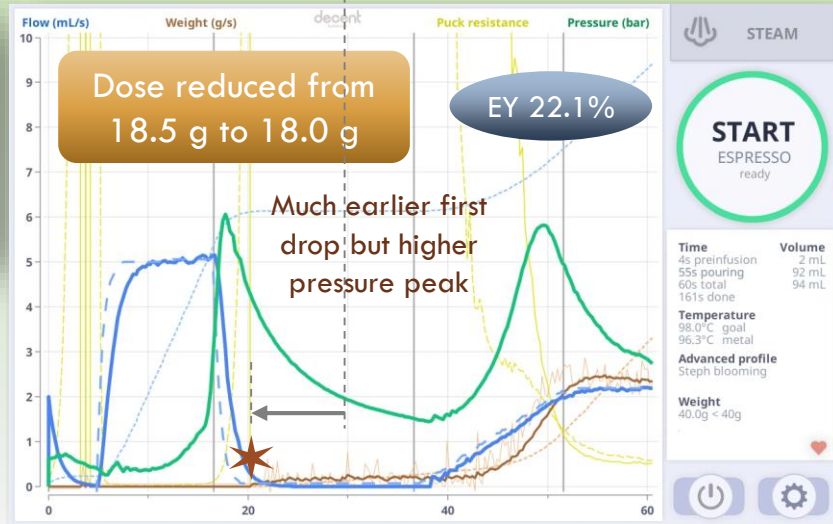
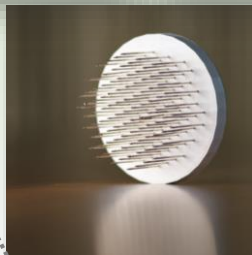


PUCK PREPARATION – 13/06 TESTS (4/4)

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

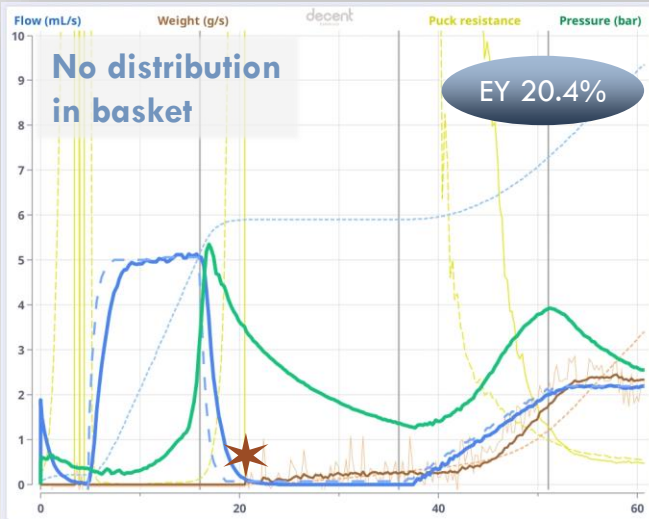


WDT with 0.4 mm needles + Gentle vertical taps + Thin hog tool



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

18.5 g coffee dose



STEAM

START ESPRESSO
ready

Time
4s preinfusion
55s pouring
60s total
139s done

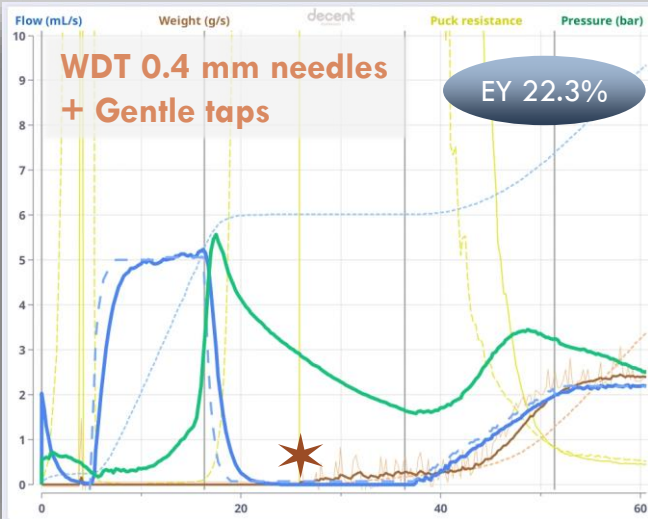
Volume
2 mL
91 mL
93 mL

Temperature
98.0°C goal
96.2°C metal

Advanced profile
Steph blooming

Weight
40.6g < 40g

Power and Settings icons



STEAM

START ESPRESSO
ready

Time
4s preinfusion
55s pouring
60s total
152s done

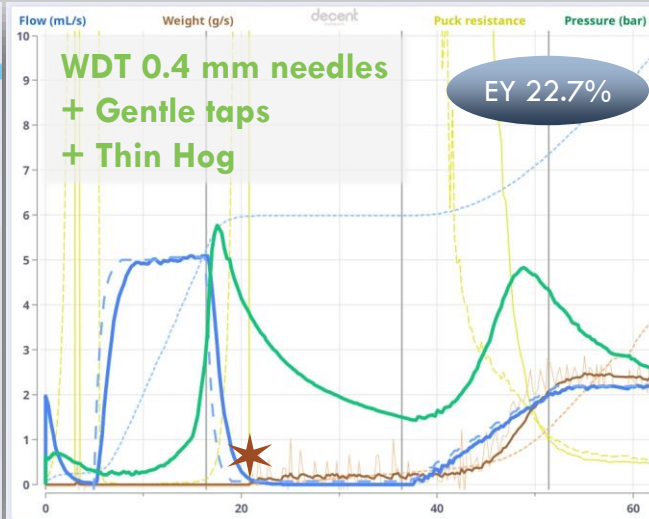
Volume
2 mL
91 mL
93 mL

Temperature
98.0°C goal
97.2°C metal

Advanced profile
Steph blooming

Weight
40.3g < 40g

Power and Settings icons



STEAM

START ESPRESSO
ready

Time
4s preinfusion
56s pouring
61s total
109s done

Volume
2 mL
92 mL
94 mL

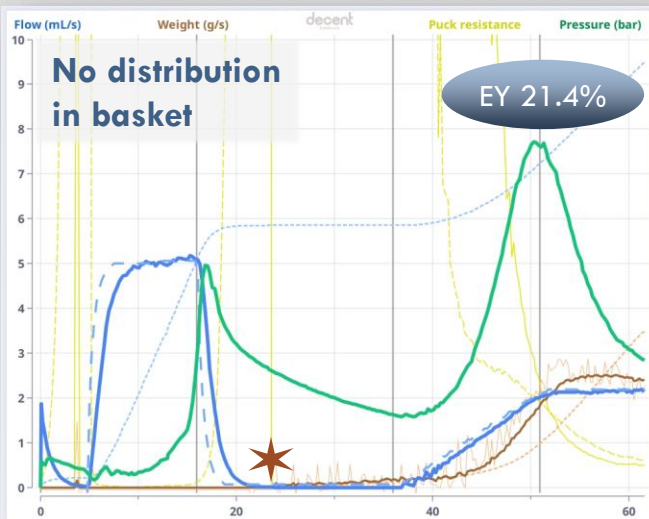
Temperature
98.0°C goal
96.9°C metal

Advanced profile
Steph blooming

Weight
42.4g < 40g

Power and Settings icons

19.0 g coffee dose



STEAM

START ESPRESSO
ready

Time
4s preinfusion
56s pouring
61s total
120s done

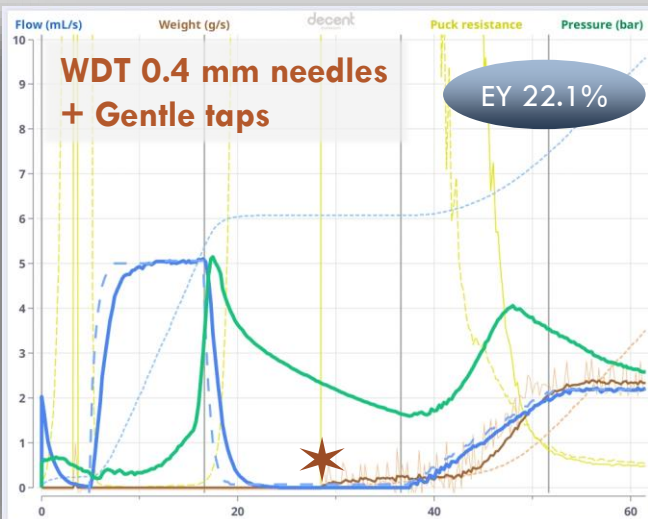
Volume
2 mL
93 mL
95 mL

Temperature
98.0°C goal
96.6°C metal

Advanced profile
Steph blooming

Weight
41.6g < 41g

Power and Settings icons



STEAM

START ESPRESSO
ready

Time
4s preinfusion
56s pouring
61s total
121s done

Volume
2 mL
94 mL
96 mL

Temperature
98.0°C goal
96.7°C metal

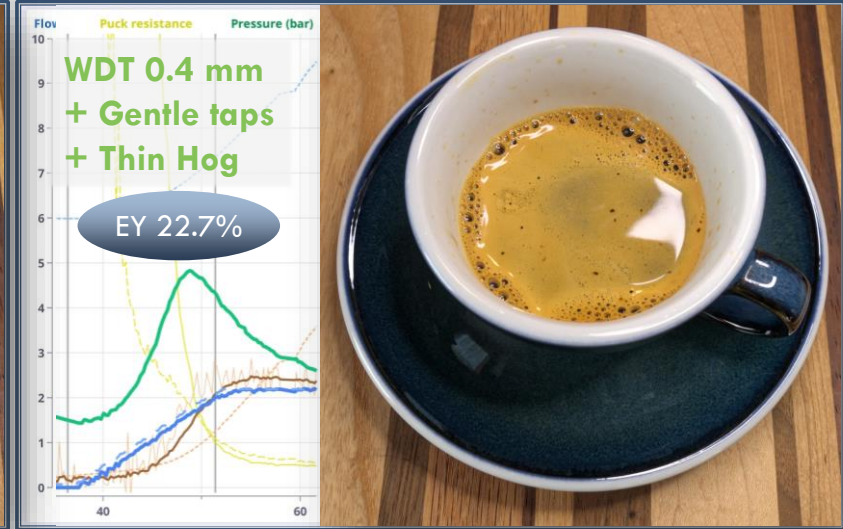
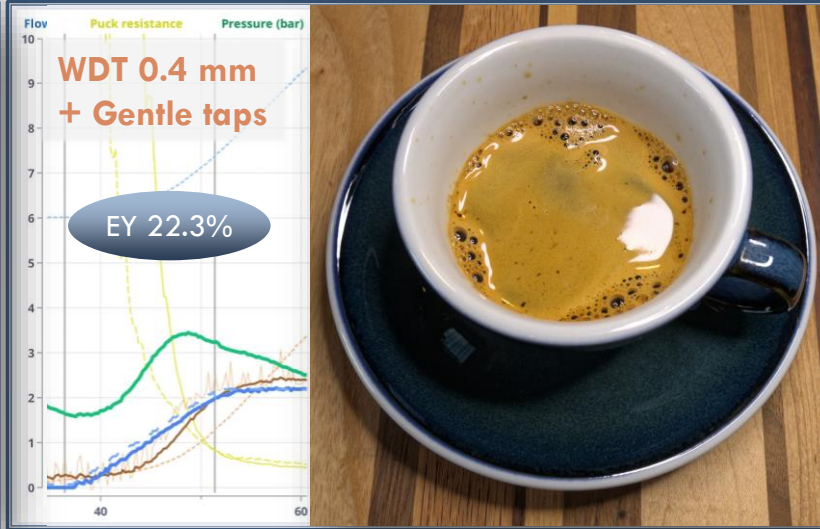
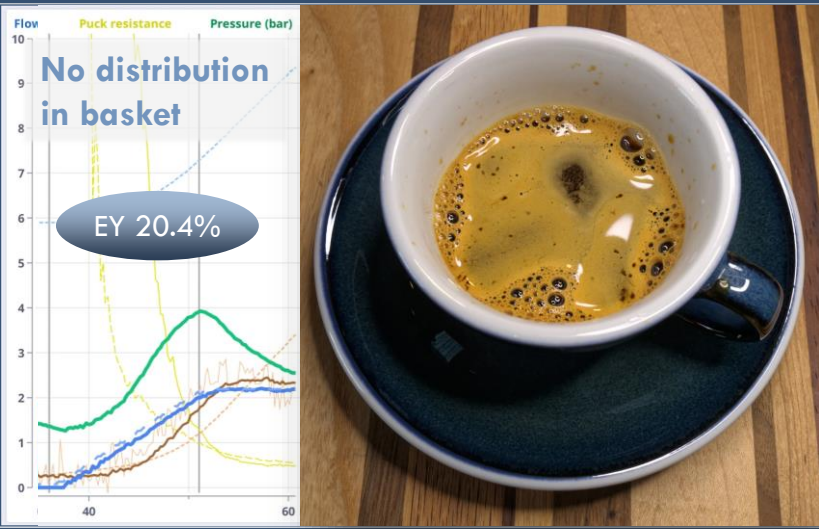
Advanced profile
Steph blooming

Weight
41.3g < 41g

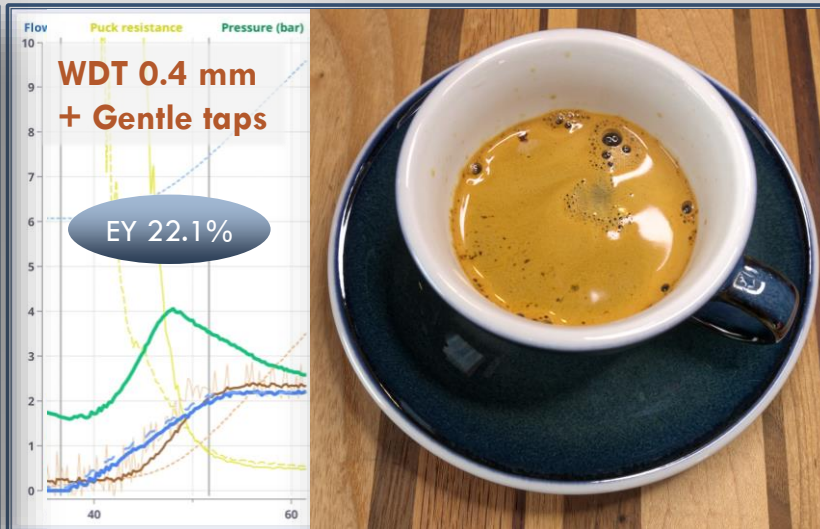
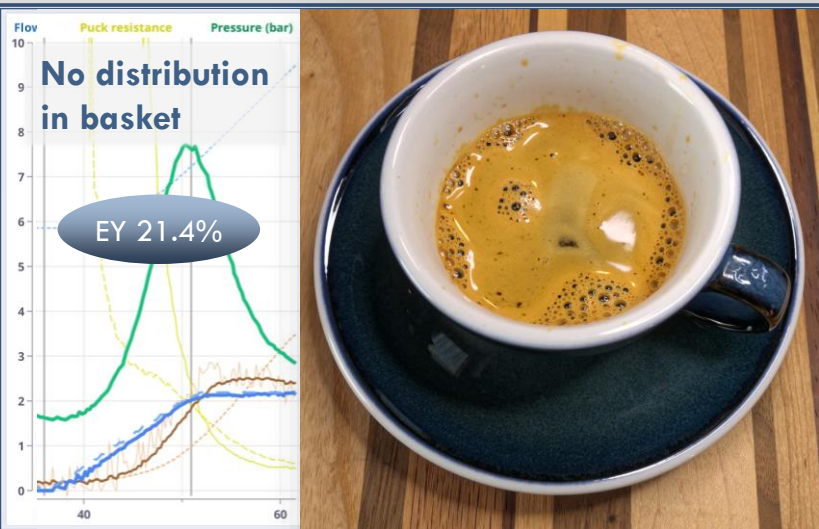
Power and Settings icons

PUCK PREPARATION – 23/06 TESTS (2/2)

18.5 g coffee dose

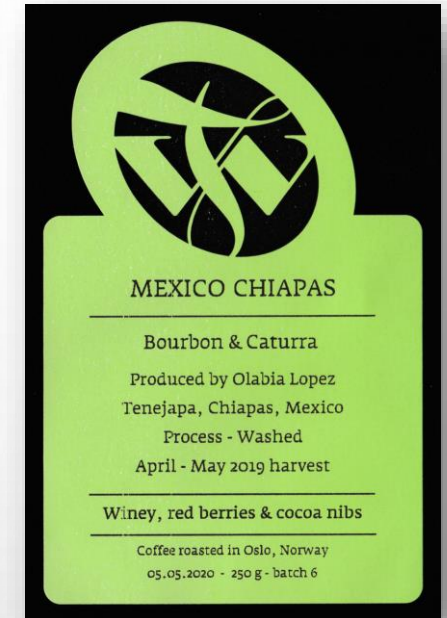


19.0 g coffee dose



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. CaCO₃ alkalinity and 90 ppm eq. CaCO₃ 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

0 PRESETS ADVANCED MACHINE APP

Steps

- lock portafilter!
- preinfusion
- low pressure bloom
- flow rise *
- hold flow *

1: Temperature

goal 99°C sensor coffee

2: Pump

flow pressure 0.0 bar transition fast

3: Duration

time 5 seconds

4: Move on if...

pressure is over pressure is under flow is over flow is under

Insert a step

lock portafilter!

Steps Limits Cancel Ok

1 PRESETS ADVANCED MACHINE APP

Steps

- lock portafilter!
- preinfusion
- low pressure bloom
- flow rise *
- hold flow *

1: Temperature

goal 90°C sensor coffee

2: Pump

flow 5.0 mL/s pressure transition fast

3: Duration

time 30 seconds

4: Move on if...

pressure is over pressure is under flow is over flow is under

Insert a step

preinfusion

Steps Limits Cancel Ok

2 PRESETS ADVANCED MACHINE APP

Steps

- lock portafilter!
- preinfusion
- low pressure bloom
- flow rise *
- hold flow *

1: Temperature

goal 92°C sensor coffee

2: Pump

flow 0.0 mL/s pressure transition fast

3: Duration

time 20 seconds

4: Move on if...

pressure is over pressure is under flow is over flow is under

Insert a step

low pressure bloom *

Steps Limits Cancel Ok

3 PRESETS ADVANCED MACHINE APP

Steps

- lock portafilter!
- preinfusion
- low pressure bloom
- flow rise *
- hold flow *

1: Temperature

goal 92°C sensor coffee

2: Pump

flow 2.2 mL/s pressure transition smooth

3: Duration

time 15 seconds

4: Move on if...

pressure is over pressure is under flow is over flow is under

Insert a step

flow rise *

Steps Limits Cancel Ok

4 PRESETS ADVANCED MACHINE APP

Steps

- lock portafilter!
- preinfusion
- low pressure bloom
- flow rise *
- hold flow *

1: Temperature

goal 92°C sensor water

2: Pump

flow 2.2 mL/s pressure transition fast

3: Duration

time 45 seconds

4: Move on if...

pressure is over pressure is under flow is over flow is under

Insert a step

hold flow *

Steps Limits Cancel Ok

- 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