

The background is a grayscale photograph of a Decent Espresso machine. The machine's body is visible, with the brand name 'decent' and 'ESPRESSO' printed on it. The machine is surrounded by numerous water droplets of various sizes, some of which are in sharp focus, creating a sense of freshness and liquid. The overall composition is artistic and clean.

decent
ESPRESSO

PRE-INFUSION FLOW RATE

STÉPHANE RIBES — APRIL 2020

PRE-INFUSION FLOW RATE TEST PROTOCOL

- **Decent Espresso Machine DE1PRO v1.1** with a (red) Cafelat 8.0 mm silicone gasket
- IMS SI 200 IM screen (no spacer)
- Mahlkönig EK43 S grinder – SSP burrs “High Uniformity” with Silver Knight coating
- Montille water (Le Mont Dore, France) – **adjusted to 50 ppm eq. CaCO_3 alkalinity and 125 ppm eq. CaCO_3 total hardness**, with sodium carbonate and Epsom salts
- Portafilter pre-heating: 70°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 in a double walled stainless steel cup
- VST 15g ridgeless filter basket, brew ratio of 2.3
- **WDT in the basket with a Londinium tool** (and a Decent funnel) – no vertical tapping – gentle raking of the coffee grounds with a hog tool, to obtain a uniform surface
- Hog puck preparation tool (thin pikes) in and out of the puck, with a stand to ensure a straight vertical movement (picture)
- **The Force Tamper with a 58.5 mm smooth flat base** – used twice in a row
- 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



HYBRID “LEVER-BLOOMING” PROFILE

2.5 ML/S EXTRACTION – 85°C

0 PRESETS ADVANCED MACHINE APP

Steps

1. lock portafilter!
2. preinfusion
3. low pressure bloom
4. flow rise *
5. hold flow *

Insert a step
lock portafilter!

1: Temperature

goal 85°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

Steps Limits Cancel Ok

1 PRESETS ADVANCED MACHINE APP

Steps

1. lock portafilter!
2. preinfusion
3. low pressure bloom
4. flow rise *
5. hold flow *

Insert a step
preinfusion

1: Temperature

goal 85°C sensor coffee

2: Pump

flow 6.0 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

Steps Limits Cancel Ok

2 PRESETS ADVANCED MACHINE APP

Steps

1. lock portafilter!
2. preinfusion
3. low pressure bloom
4. flow rise *
5. hold flow *

Insert a step
low pressure bloom *

1: Temperature

goal 85°C sensor coffee

2: Pump

flow pressure 3.0 bar transition fast

3: Duration

time 11 seconds

4: Move on if...

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

Steps Limits Cancel Ok

- Combination of the Londinium and blooming profiles
- 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

3 PRESETS ADVANCED MACHINE APP

Steps

1. lock portafilter!
2. preinfusion
3. low pressure bloom
4. flow rise *
5. hold flow *

Insert a step
flow rise *

1: Temperature

goal 85°C sensor coffee

2: Pump

flow 2.5 mL/s pressure transition smooth

3: Duration

time 10 seconds

4: Move on if...

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

Steps Limits Cancel Ok

4 PRESETS ADVANCED MACHINE APP

Steps

1. lock portafilter!
2. preinfusion
3. low pressure bloom
4. flow rise *
5. hold flow *

Insert a step
hold flow *

1: Temperature

goal 85°C sensor coffee

2: Pump

flow 2.5 mL/s pressure transition fast

3: Duration

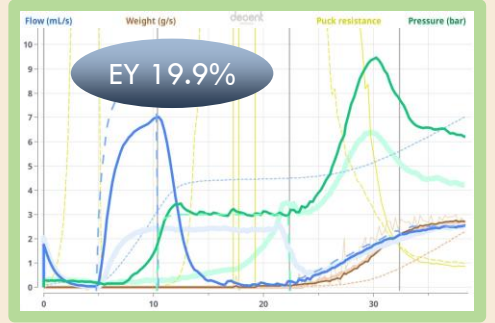
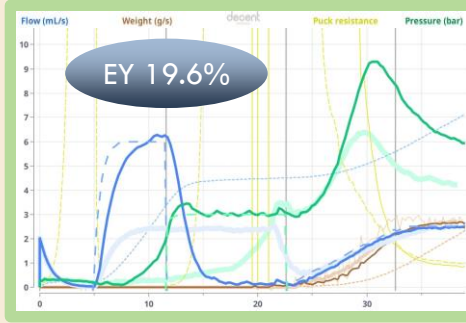
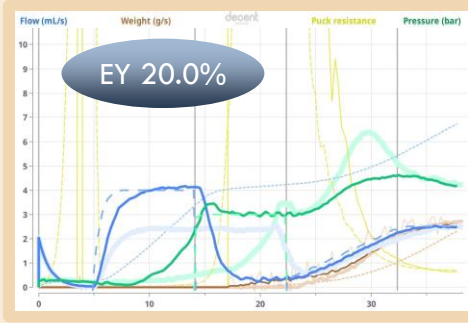
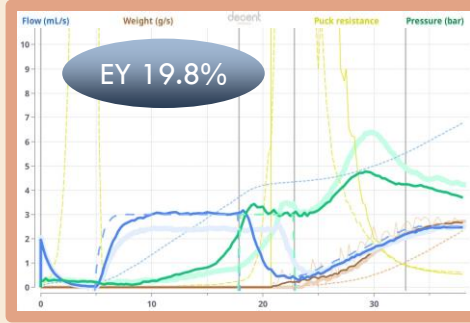
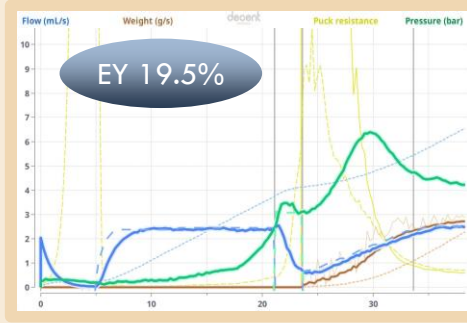
time 45 seconds

4: Move on if...

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

Steps Limits Cancel Ok

IMPACT OF THE PRE-INFUSION FLOW RATE ON THE ESPRESSO EXTRACTION



Pre-infusion flow rate:

All shots: same grind size, 13g in, 30g out – Total shot time: 33s

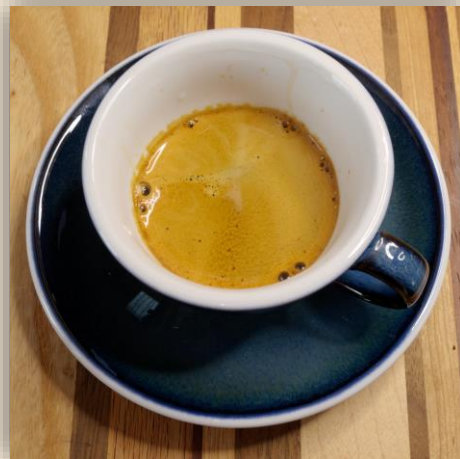
2.4 mL/s

3.0 mL/s

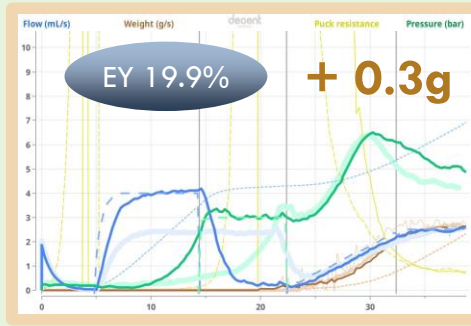
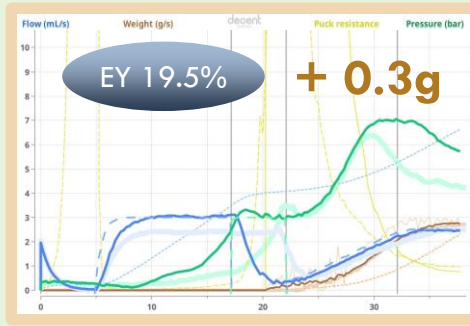
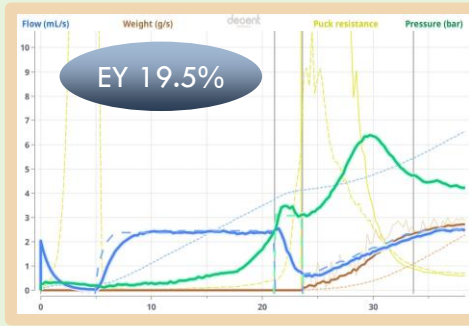
4.0 mL/s

6.0 mL/s

8.0 mL/s



IMPACT OF THE PRE-INFUSION FLOW RATE ON THE ESPRESSO EXTRACTION



Pre-infusion flow rate:

Coffee dose adapted to reach a pressure peak around 6 bar

2.4 mL/s

3.0 mL/s

4.0 mL/s

6.0 mL/s

8.0 mL/s

