

For Specialty Roasters

Roasting Guide

Helping guide your decaf roast progression to optimize sample evaluation and production roast quality.





**We're here to
change that
belief.**

Do you think of roasting decaf as a great way to warm up your roaster—because it can be tricky to get it right? We're here to change that belief, because **decaf can be excellent when the right approach is applied.**

Through a scientifically rigorous research study with Zurich University of Applied Sciences Coffee Excellence Program, we obtained data-based insights into the impact of the Swiss Water® Process on coffees when roasted.

We've taken these findings and applied them to our extensive knowledge of how to roast decaf—so let's get to it, and make your Swiss Water® Process decafs a source of pride in your coffee program.





STEP 01 • OBSERVATION

Read colour development differently.

Decaf follows the same broad roast curve as regular coffee, but it looks more developed from the outset.

Decaffeination darkens green coffee, giving a wider gap of colour between outer and inner bean, so the progression of colour while roasting decaf is expected.

WHAT TO TRUST

Referencing the colour of ground coffee is usually a more reliable measure of true development than whole-bean appearance. Surface colour alone can be misleading and may lead to underdevelopment.



STEP 02 • ENERGY PLAN

Rebuild the roast, stage by stage.

Decaf moves through drying, Maillard, and development differently from regular coffee because heat transfer is faster. Shorter drying and earlier Maillard onset demand tighter energy control to avoid rushing key reactions.

Sufficient heat early on allows even expansion and a clearer first crack; controlled momentum throughout prevents stalls, runaways, or crashes.

PROFILE A • BRIGHTER

Protect acidity & aromatics

Avoid a long, low-energy drying phase. Carry steady, moderate heat through Maillard so the coffee reaches first crack with controlled momentum.

PROFILE B • ROUNDER

Extend post-crack development

Stretch development time after first crack while tapering heat and keeping rate of rise in steady decline.

The goal isn't to force decaf into a standard roast model, it's to rebalance each stage around decaf's behaviour.



STEP 03 • THE CRACK

Track first crack with sight, aroma, and momentum.

Decaf often has a muted first crack, making sound a less reliable signal. Early popcorning can occur before true first crack, and reacting to it too soon can leave the roast underdeveloped and prone to stalling.

- ✓ Track rate of rise, exhaust behaviour, bean temperature, aroma, and visual cues—surface texture, even browning, full expansion.
- ✓ A vinegar-like aroma often signals the start of true first crack before sweeter, caramelized aromas appear.
- ✓ Treat early popcorning with suspicion – it's not the cue you're looking for.



STEP 04 • DEVELOPMENT

Manage development with more precision.

Development after first crack is where decaf profiles are most easily lost.

Decaffeination changes bean structure and the thermal accessibility of sugars and organic acids, so flavour can shift quickly toward roast character if momentum isn't controlled.

PRACTICE

Small, gradual energy adjustments help preserve sweetness and clarity while avoiding stalls or runaway development. Treat this phase as adaptive – guided by aroma, rate of rise, and bean appearance rather than a fixed percentage.



Every 30 Seconds, side by side. See the difference.

PHASE 1
Drying

0:00 - ABOUT 3:30

PHASE 2
Maillard

ABOUT 3:30 - ABOUT 7:30

First Crack

ABOUT 7:30 -
ABOUT 9:00

PHASE 3
Development

ABOUT 9:00 - FINISH

REGULAR (LEFT OF SPLIT) & DECAF (RIGHT OF SPLIT)



0:00 0:30 1:00 1:30 2:00 2:30 3:00 3:30 4:00 4:30 5:00 5:30

6:00 6:30 7:00 7:30 8:00 8:30 9:00 9:30 10:00 10:30 11:00 GROUND



STEP 05 • REFINE

Refine your approach with **consistency in mind.**

Swiss Water® Decaf benefits from an approach that accounts for faster progression, altered colour development, and softer first crack—to bring out the desirable flavours that reflect the various origins and processes coffee has to offer.

With consistent colour tracking, sensory observation, and disciplined data review, decaf roasting becomes more repeatable and more deliberate. An added advantage of Swiss Water® Decaf lies in its consistency: given the level of control over moisture and water activity during processing, once a preferred roast profile is established, it can often be adapted across different Swiss Water® Process lots with only minor adjustments.

The integrity of the bean, **kept intact.**

The Swiss Water® Process maintains the integrity of the bean and keeps its delicate origin characteristics intact.

To learn more about how we achieve this—the decaffeinated coffees and services we offer, and more—visit our website.

VISIT
[swisswater.com](https://www.swisswater.com)



Sample roasting Swiss Water® Decaf, **side by side.**

For every decaf production in our plant, we run comparison roasts of the green coffee before and after processing, and compare them side by side. When evaluating Swiss Water® Decaf next to the original coffee beans, we aim for internal colour consistency – we grind both samples and compare to ensure the colour of the ground coffee matches.

This eliminates roast level as a variable, so we can focus on our number-one goal: ensuring we maintain the integrity of the coffee's characteristics through the decaffeination process.

TARGET SAMPLE ROAST TIME

8:30 - 9:30

SCA reference: 8 - 12 minutes

TARGET AGTRON, GROUND

63

Gourmet (M Basic) scale

THE BOTTOM LINE

Profile similar to regular green

Slightly faster after first crack

Your decaf sample roast time and profile should be very similar to your regular green—although a bit faster after first crack.



Printable

Roasting Reference Sheet

To bring out the flavors and cup attributes that reflect the various origins and processes coffee has to offer, Swiss Water® Decaf benefits from an approach that accounts for

- Faster progression
- Altered color development
- Softer first crack

With consistent color tracking, sensory observation, and disciplined data review, decaf roasting becomes more repeatable, more deliberate, and elevates your coffees.



Learn more at
swisswater.com/roaster-resources

01 Read colour development differently

- ✓ Reference the color of ground coffee, rather than the exterior color.

02 Approach the roast by working backward from the target cup

FOR BRIGHTER PROFILES

- ✓ Avoid a long, low-energy drying phase to protect acidity and aromatics.
- ✓ Carry steady, moderate heat through Maillard so the coffee reaches first crack with controlled momentum.

FOR ROUNDER, MORE DEVELOPED PROFILES

- ✓ Taper heat and keep rate of rise in steady decline to extend post-crack development.

03 Track first crack with sight, aroma, and momentum

- ✓ Track rate of rise, exhaust behavior, bean temperature, aroma, and visual cues such as surface texture, evenness of browning, and full bean expansion
- ✓ A vinegar-like aroma often signals the start of true first crack before sweeter, caramelized aromas appear

04 Manage the development phase with more precision

- ✓ Small, gradual energy adjustments help preserve sweetness and clarity while avoiding stalls or runaway development
- ✓ Treat this phase as adaptive, guided by aroma, rate of rise, and bean appearance rather than a fixed percentage



QUESTIONS?

We'd love to hear from you.

The team at Swiss Water Decaffeinated Coffee Inc. is committed to helping achieve optimal cup quality when roasting Swiss Water® decafs. If you have any questions, we'd love to hear from you.

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