

Recommended Protocols: Cold Brew Cupping

Purpose

While guidelines have long existed to accurately assess the quality of coffees through cupping, they focus exclusively on hot water brewing. These traditional cupping guidelines and protocols are useful in understanding the overall cup quality for grading purposes. However, they provide little insight as to how a certain coffee will taste when brewed with cold water extraction methods (cold brew).

Cold brew methods of extraction produce very different flavor profiles than hot water extraction methods for the same coffee bean. In particular, cold brew extraction results in a unique chemical composition that impacts the flavor profiles as well as other physical and sensory attributes. Some flavors may be muted when cold brewed, while others may be amplified or transformed entirely. Sweetness, body, aftertaste, and balance will also be different in the cold brewed cup, yet these changes cannot be uniformly predicted from one coffee to the next.

The cold brew process can reveal characteristics about coffee beans that may be otherwise hidden – characteristics about varietal, micro-climate, careful crop tending, processing method, and roast. Put simply, evaluating a coffee with hot water cupping methods will not tell you how the coffee will taste when brewed cold, and for more and more coffee professionals, this is an important distinction.

Reasons for cold brew cupping include:

- To better understand the full range of sensory qualities of a coffee
- To provide tasting notes and cup scores for cold brew applications
- To use as a tool for selecting coffees, choosing roast profiles, and developing recipes for cold brew programs

The cold brew cupping difference

Largely based on the SCA Cupping Protocols found at <https://sca.coffee/research/protocols-best-practices>, the Cold Brew Cupping Protocol has more similarities to traditional cupping than differences. We changed only the elements that we deemed necessary for cold brew evaluation.

Basic assumptions regarding cold brew coffee evaluations include:

- The purpose of cold brew cupping is primarily to evaluate how coffees taste when brewed with cold water extraction and to experiment with variables that impact taste for recipe and program development.
- Coffee used for making cold brew has typically already undergone qualitative cupping and assessment using traditional hot cupping techniques. Therefore, we have adapted the Cold Brew Cupping Form to remove previously assessed qualitative aspects such as “uniformity,” “cleanliness,” and defects as they’re not necessary for preferential-based quality assessment of coffee.
- We have tailored sample preparation recommendations to accommodate the unique chemistry and physics of cold water extraction.

Sample preparation

Sample preparation is similar to traditional cupping practices, but varies in a number of important ways:

- Brewing with cold water directly in a cupping bowl does not allow the evaluator to clear grounds prior to tasting since the grounds stay in suspension. Brewing in a separate vessel and filtering prior to tasting is necessary.
- Traditional hot cupping ratios for measuring ground coffee and water typically does not yield sufficient dissolved solids for meaningful evaluation. We recommend modified brewing ratios.
- Use cool or ambient temperature water instead of hot water when preparing samples.
- Preparing five cups of each sample is not necessary, as the Cold Brew Cupping Form does not evaluate uniformity.
- Roast level, grind particle size, and brew time are among the variables that may be modified for comparative analysis, but they're not strict control factors.

Sample evaluation and scoring

The process of evaluating the samples is quite similar to traditional cupping practices. We recommend only slight modifications in order to assess accurately and to keep the overall scale to 100 points:

- Fragrance and aroma are evaluated along with the sample evaluation rather than during preparation.
- Uniformity and cleanliness are not scored on the Cold Brew Cupping Form.
- Flavor and balance scores are doubled when calculating the final score, due to their importance in cold brew evaluation.
- Final scoring is intended to provide a data point for preferential comparative analysis rather than to score coffee quality for "specialty classification."

Sample preparation

Cold brew replaces heat with time, so instead of brewing your samples with steaming hot water for just a few minutes, you will brew with cool water for an extended period of time. Therefore, we recommend samples be prepared the day before evaluation.

Supplies and equipment	Environment	Time allotment
<ul style="list-style-type: none">• Freshly roasted coffee^{SCA} for brewing• Fresh, cool water^{SCA}• Grinder• Scales• Timers• Brewing vessels with lids• Filters	<ul style="list-style-type: none">• Clean, free of interfering aromas• Comfortable room temperature• Space where samples will be left undisturbed for full brewing duration	<ul style="list-style-type: none">• Samples must be prepared in advance to allow for sufficient brewing time, ideally 8-24 hours

Determining measurements

Determine measurements based on the size of your brewing vessel and your desired brewing ratio. Reference measurements assume you are brewing with the Toddy Cold Brew System Cupping Kit. If you are brewing in a different vessel, adjust your measurements accordingly.

Brew ratio (coffee : water)	Strength	Target TDS range	Reference measurements
1 : 5	<ul style="list-style-type: none">Concentrate (can be evaluated at full strength or diluted)	3.5 - 4.5%	80 g coffee : 400 mL water
1 : 8	<ul style="list-style-type: none">Concentrated ready-to-drink (can be evaluated at full strength or diluted)	2.25 - 3.25%	50 g coffee : 400 mL water
1 : 10	<ul style="list-style-type: none">Strong ready-to-drink (evaluate at full strength)	1.75 - 2.75%	50 g coffee : 500 mL water
1 : 14	<ul style="list-style-type: none">Typical ready-to-drink (evaluate at full strength)	1.25 - 2.25%	36 g coffee : 500 mL water

Roasting^{SCA}

If you are performing a cold brew evaluation alongside a traditional evaluation, use the same beans and roast profile for both evaluations. This will allow you to understand how hot vs. cold brewing methods each impact the cup.

For other types of evaluations, we recommend a properly profiled production roast.

Cup preparation

Coffee

Samples should be weighed out as whole beans to the predetermined ratio (referenced previously) for the appropriate cup/vessel fluid volume. Set aside and cover an additional portion of the whole, roasted beans for fragrance evaluation (at least 10 grams).

Grind^{SCA} coffee samples, no more than 15 minutes before the infusion with water.

Each sample should be ground by running a cleansing quantity of the sample through the grinder, and then grinding each cup's batch individually, ensuring that the whole and consistent quantity of sample gets deposited into the cupping filters.

Place a pre-filled filter into each brewing vessel.

Water

Use water that's clean and odor free, but not distilled or softened. Ideal total dissolved solids are 125-175 ppm, but should not be less than 100 ppm or more than 250 ppm. Water should be freshly drawn and at room temperature (75°F ± 4°F / 24°C ± 2°C) at the time it is poured onto the ground coffee.

Pour the water directly onto the measured grounds, making sure to wet all of the grounds. Cover the vessel and leave it to steep undisturbed for 18 hours before evaluation.

Filter

When brewing is complete, filter the grounds from the liquid coffee. Pour filtered samples into cupping glasses or individual tasting cups. If you plan to evaluate at a later time, keep samples covered. It is important that all samples be evaluated at the same temperature, so do not refrigerate any of the samples unless all of the samples will be refrigerated. If refrigerated, allow samples to rest at room temperature before evaluating.

Sample evaluation

Samples may be evaluated as soon as brewing is complete, or samples may be set aside for later evaluation. The guidance below has been adapted from the SCA's Cupping Protocols; some direct excerpts have been included for convenient reference.

Supplies and equipment	Environment	Time allotment
<ul style="list-style-type: none">• Reserved roasted coffee^{SCA} for fragrance evaluation• Grinder• Prepared cold brew samples• Cupping glasses and spoons^{SCA} or individual tasting cups• Hot water equipment• Cold Brew Cupping Forms and other paperwork• Pencils and clipboards	<ul style="list-style-type: none">• Clean, free of interfering aromas• Comfortable room temperature• Limited distractions (no phones, etc.)• Cupping tables	<ul style="list-style-type: none">• As needed

Fragrance preparation:

Grind reserved coffee samples immediately prior to cupping. Place freshly ground coffee in the same type of vessel (cupping glasses or individual tasting cups) you're using for cold brew sample evaluation.

Keep covered.

Sensory testing^{SCA} is performed for three reasons:

- To determine the actual sensory differences between samples
- To describe the flavor of samples
- To determine preference of products

The Toddy Cold Brew Cupping Form (available for download at ColdBrewCupping.com) has been developed specifically for cold brew sensory evaluations. The form provides a means of recording important flavor attributes for coffee: fragrance/aroma, flavor, aftertaste, acidity, body, balance, sweetness, and overall score. The specific flavor attributes are positive scores of quality that indicate a judgment rating by the cupper.

The presence of defects in cold brew samples is expected to be very low as the sample typically will have previously been through a traditional production cupping during which defects, taints, and faults will have been addressed. Therefore, if a taint, fault, or defect does appear, it will be scored negatively in the balance attribute and will denote unpleasant flavor sensations.

The overall score is based on the flavor experience of the individual cupper across all attributes as a personal appraisal. Overall scores are rated on a 16-point scale representing levels of quality in quarter-point increments between numeric values from 6 to 9. These levels are:

Quality scale

Good	Very good	Excellent	Outstanding
6.00	7.00	8.00	9.00
6.25	7.25	8.25	9.25
6.50	7.50	8.50	9.50
6.75	7.75	8.75	9.75

Theoretically, the above scale ranges from a minimum value of 0 to a maximum value of 10 points. However, the lower end of the scale is considered to be below specialty grade.

Evaluation procedure

First, visually inspect the samples for roast color, which is marked on the sheet and may be used as a reference when rating specific flavor attributes. The sequence of rating each attribute is based on the flavor perception; cold brew coffee remains stable at room temperature and therefore all attributes except the fragrance are assessed simultaneously.

Step 1: Fragrance/aroma

Evaluate the fragrance by lifting the lid and sniffing the dry grounds. You'll evaluate the aroma from the cold brewed sample itself.

Since there is no crust to break, stir the coffee three times and then allow the coffee to run down the back of the spoon while gently sniffing. Next, mark the fragrance/aroma score on the basis of both the dry and wet evaluation.

Step 2: Flavor, aftertaste, acidity, and body

Aspirate the coffee into your mouth in a way that covers as much area as possible, especially the tongue and upper palate.

First, rate flavor and aftertaste. Continue to taste to assess the acidity and body. Each sip of coffee will reveal more of the hidden nuances; therefore, you should taste a sample at least three times during the course of evaluation.

As you continue to taste, evaluate the coffee according to your preference for the different

attributes. To rate the sample on the 16-point scale, circle the appropriate tick-mark on the cupping form. If you want to adjust a mark (if a sample gains or loses some of its perceived quality due to second or third sips), re-mark the horizontal scale and draw an arrow to indicate the direction of the final score.

Double your flavor score.

Step 3: Sweetness, balance, and overall score

Finally, focus your attention to evaluate sweetness and balance. Balance is the cupper's assessment of how well the flavor, aftertaste, acidity, body, and sweetness synergize. Double your balance score.

After the third sip, and providing you feel like you were able to score each attribute accurately, the coffee evaluation is complete.

Next, calculate the overall score and assign it to the sample as “cupper’s points” based on ALL of the combined attributes.

Step 4: Scoring

After evaluating the samples, add the scores together and then write the final score in the lower right-hand “Total Score” box.

Individual component scores

Record the attribute score in the appropriate score box on the cupping form. On some of the positive attributes, you’ll see two tick-mark scales.

- The vertical scales are used to rank the intensity of the listed sensory component.
- The horizontal scales are used to rate the cupper’s perception of relative quality of the particular component based upon their perception of the sample and experiential understanding of quality.

You can find a comprehensive description of sensory attributes at <https://sca.coffee/research/protocols-best-practices> under the “Individual Component Scores” section.

Final scoring

Calculate the final score using the doubled flavor and balance scores, and then summing the individual scores given for the primary attributes. Mark the combined score in the “Total Score” box.

Total score classification

60 - 69.75 **GOOD** 70 - 79.75 **VERY GOOD** 80 - 89.75 **EXCELLENT** 90 - 100 **OUTSTANDING**

Working with variables

When working to determine a new recipe for your cold brew program or fine-tune an existing one, you can evaluate multiple cold brew samples. To get a valid and accurate representation of how adjusting certain variables will affect the cold brew, it’s critical that you control for all but the single variable you are testing. If you’re experimenting with different brew ratios, for example, you’ll want to

make sure the other seven variables are held constant. If more than just the experimental variable fluctuates between each sample, you can't be certain that the different outcomes are a result of the variable you're adjusting.

To experiment with cold brew recipes, choose one variable from the list that follows and perform a cupping to compare how adjusting that single variable affects your cup of cold brew.

- Coffee (different coffees, roast levels, etc.)
- Filter material
- Grind size
- Brew ratios (coffee to water)
- Turbulence
- Water temperature
- Dwell time
- Dwell temperature
- Dilution

You can experiment with any of these variables regardless of your preferred cold brew method (e.g., drip towers, French press, large batch brewers, etc.), so long as you simultaneously brew the multiple recipes to be cupped. In other words, while we know that cold brew's flavor attributes are more stable than coffee brewed with heat, you still want the cold brew you're comparing to be produced and cupped at the same time as some flavors will inevitably shift if too much time elapses between brewing and evaluation.