



ASBC Hot Steep Malt Sensory Method

Hot Steep

Application of method: sensory evaluation of extractable malt flavors and aromas

Target audience: sensory panels, brewers

Reagents

- (a) Whole kernel malt
- (b) Deionized water

Apparatus

- (a) Thermos®, insulated, stainless steel, 24 ounce volume
- (b) Thermometer, standard, 0-200°C
- (c) Heating apparatus, capable of heating water to 65°C
- (d) Funnel, plastic, short stem, 16 cm in diameter or similar
- (e) Filter paper, fluted, 32 cm in diameter (Ahlstrom No. 515 or similar)
- (f) Electric Grinder, 3 ounce volume, 200-watt (KRUPS F203 or similar)
- (g) Glass Beaker, tall, 600 mL volume
- (h) Graduated cylinder, 500 mL volume
- (i) Analytical balance, capable of weighing 50.0 g (± 0.1 g)



Place approximately 52 grams of malt in electric grinder. Close lid and grind for 10 seconds, or until a course flour consistency is achieved (see Notes 1-2). Weigh 50 ± 0.1 g malt flour into Thermos®. Pour 400 mL of 65°C distilled water into Thermos®. Cap and vigorously shake contents of Thermos® for 20 seconds to ensure malt grit is completely wetted and mixed into solution. Let Thermos® sit for 15 minutes. During this time, place filter paper inside funnel and wet paper with deionized water to minimize aroma contribution. Position filter and funnel over mouth of 600 mL glass beaker where it will remain for wort collection. When 15 minute timer ends, vigorously swirl contents of Thermos® for 20 seconds to bring settled particles back into solution, then uncap and quickly pour all of the mash liquid into the filter (see Note 3). Collect and pour first 100 mL of filtrate back into the Thermos®. Swirl Thermos® to collect any grit that remains inside, then gently re-pour back into the filter. Allow wort to filter to completion (see Notes 4-6).

Notes

1. Evaluate base malts with 50 g of sample (100% inclusion), specialty malts with 25 g of sample and 25 g of brewers base malt (50% inclusion), and dark roasted specialty malts with 7.5 g of sample and 42.5 g of brewers base malt (15% inclusion).
2. If different malts are to be milled, clean electric grinder with a dry rag in between samples to prevent cross contamination.
3. Entire contents must be poured though filter at once so that the grain bed can settle without being disturbed. Filter paper should be free of aromas and large enough to hold the entire contents of the Thermos®.
4. Filtration rate and sample yield will be influenced by malt type and modification level. Approximately 300 mL of wort can be collected in 30-45 minutes (serves 6-8 tasters).
5. In the event that a large batch of wort is needed to accommodate more than 6-8 tasters, the method can be scaled up by a factor of x, with x being equal to the amount of Thermos® containers, filter papers, funnels, and glass beakers that are required. Blend the wort collected to obtain a homogenous sample.
6. Perform wort sensory evaluation within four hours of filtration. Serve at room temperature.