

HOP SAMPLING

The following hop sampling procedures are taken from Methods of Analysis of the American Society of Brewing Chemists (ASBC). It describes the equipment required and of the proper way to sample and ship hop for laboratory analyses. Hop samples may be required from bulk, unpressed, pressed, baled, or pellet lots or from "hop powders." Each form requires a specific procedure to ensure a sample representative of the bulk lot and a preparation for laboratory analysis adapted to the material received.

Apparatus required for hop sampling

- (a) Sharp knife, heavy kitchen-type.
- (b) Oregon Sampler. Typically, a steel tube, ca. 75 mm in diameter and 20-25 cm long, sharpened at one end and capped at the other. The capped end has two handles welded to it at right angles to body of tube. A close-fitting piston inside tube is fastened to a shaft that protrudes through a hole in center of cap and terminates in a knob. Sampler removes cylindrical core from bale.
- (c) Resin Sampler. Identical to (b), except its diameter is 25-30 mm.
- (d) Sample containers. Moisture-proof, airtight containers such as tin cans with screw caps or friction top covers, moisture-proof plastic bags, or jars. Do not use moisture-permeable cartons, bags, or wooden boxes. Transfer samples that are received wrapped in paper to moisture-proof containers for storage before analysis.
- (e) Food chopper. Universal No. 2 or 3 with 6- or 14-tooth cutter or other commercially available mill giving a similar grind.
- (f) Polyethylene bags. These should fit easily over discharge of food chopper.
- (g) Kitchen-type blender or top-drive macerator (for hop pellets), high speed, preferably equipped with small (500-mL) cup.
- (h) Sample divider (typically for chemical analysis of hop pellets), such as used for barley or malt.

Methods for hop sampling

Un-pressed Hops

Take equal portions from 5-10 different places in heap, from surface as well as from different depths, until sample of ca. 200 g is obtained. Place sample in suitable sample container and close tightly.

Pressed Hops in Bales

Take samples from a number of bales representing ca. 10% of shipment or of the square root of the number of bales when shipment is over 100 bales. Either cut 2 uniform slices of ca. 100 g each² from opposite sides of bale selected for sampling or cut a 3-in. opening in the burlap or

polypropylene cover half way up the bale and core sample from bale in 1 or 2 places with the Oregon Sampler. Place each 200-g sample from bale in suitable sample container and close tightly. If sample is to be used for resin or chemical analysis only, use Resin Sampler and collect ca. 50 g from each bale. Store samples in refrigerator or freezer pending physical examination and chemical analysis.

Hop Pellets

Take ca. 200-g samples from every 10th box of pellets. Composite in large polyethylene bag, and then pass through sample divider until sample of 400-500 g is obtained. Split into 4 equal parts. Combine 3 parts for reference and use remainder for analysis. Store in vacuum or tightly sealed airtight container under refrigeration.

Hop Powders

Use appropriate trier to obtain sample representative of package, mix thoroughly, and store in tightly sealed container.

References

1. American Society of Brewing Chemists. Report of Subcommittee on Hop Analysis. Proc 1941, p 130
2. American Society of Brewing Chemists. Report of Subcommittee on Hop Analysis. Proc. 1957, p. 144.
3. American Society of Brewing Chemists. Report of Subcommittee on Analysis of Hop Bittering Constituents. Proc. 33:81 (1975).
4. American Society of Brewing Chemists. Report of Subcommittee on Revised Methods of Hops Analysis. Journal 47:122 (1989).
5. Grant, H. L. Am. Soc. Brew. Chem. Proc. 1974, p. 80.
6. U.S. Department of Agriculture. HB (918) 12. Inspection Handbook for Hops. USDA, AMS, Grain Div., Rm. 0642, 1400 Independence Ave. S.W., Washington, DC 20250 (Rev. June 1976).
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