



BC Centre for Disease Control
Provincial Health Services Authority

Fact Sheet: Laboratory Options for Alcohol Testing for Kombucha

Alcohol Testing of Kombucha Beverages

This fact sheet is intended for processors of non-alcoholic kombucha. Processors must have a health approval or health operating permit from their regional health authority for non-alcoholic kombucha made and sold in BC. Processors are responsible for ensuring that the alcohol content in the final product does not exceed 1% Alcohol By Volume (ABV) during the product's shelf-life, including during distribution and consumer handling (as well as abuse). Kombucha that continues to ferment after bottling and distribution may allow alcohol levels to rise. Processors should include alcohol as a chemical hazard in their food safety plan. Tests for alcohol in kombucha should be done using validated methods (described below).

The current regulatory standard in BC, described in the [Liquor Control and Licensing Act](#), defines liquor as a beverage containing more than 1% ABV. Methods must have enough accuracy to provide final alcohol content.

Processors intentionally producing beverages with an ABV greater than 1 percent (>1%) require a liquor manufacturer license. Liquor manufacturing is regulated by the Liquor and Cannabis Regulation Branch (LCRB). Processors should contact the [LCRB](#) and apply for a manufacturer's license before producing any more product.

Validated methods: Processors should regularly analyze their products for alcohol content to ensure their products meet regulatory requirements. Processors may choose to conduct testing themselves or use contract laboratories. Only methods that have been validated and shown to be fit for their intended purpose should be used for these purposes. The AOAC International Kombucha expert review panel has established minimum performance requirements for the detection of ethanol in kombucha products.¹ Analytical methods must demonstrate that they can achieve performance requirements through method validation ([AOAC validation guidance](#)).² The following methods have been validated and shown to meet the performance requirements.

Validated Analytical Methods Meeting AOAC Performance Requirements for Analysis of Ethanol in Kombucha³

1. Head-space gas chromatography (HS-GC) with flame ionization detector (FID) AOAC Method 2016.12⁴
2. Head space gas chromatography (HC-GC) with Mass Spectrometry Detection (MS)⁵
3. Enzymatic method by r-Biopharm (Enztec Liquid Ethanol Ref. E834), AOAC Method 2017.07⁶

¹ http://members.aoac.org/aoac_prod_imis/AOAC_Docs/SMPRs/SMPR%202016_001.pdf

² https://members.aoac.org/AOAC_Docs/StandardsDevelopment/SLV_Guidelines_Dietary_Supplements.pdf

³ AOAC Int. Official Methods of Analysis are published at: <http://www.eoma.aoac.org/>

⁴ <https://academic.oup.com/jaoac/article/100/3/732/5654223>

⁵ <https://academic.oup.com/jaoac/article/104/1/122/5881628>

4. Headspace solid phase micro-extraction & GC-MS by MilliporeSigma, AOAC Method 2019.04⁷
5. Ethanol Assay Kit (K-EtOH) by Megazyme, AOAC Method 2019.08⁸

For contract laboratories, it is recommended that laboratories chosen be accredited and listed on the Standards Council of Canada approved laboratory web-site.⁹ Alcohol testing costs at contract labs using validated methods can range from \$150 to \$300 per test. A few labs that have confirmed that they provide such services are listed below. Please contact the individual labs for details and pricing.

Providers of validated alcohol testing for kombucha

Laboratory Name	Method Description	E-mail Contact	Phone
SGS Burnaby Food Lab (Burnaby, BC)	Ethanol Determination in Beverages like Kombucha AOAC 2016.12. Instrument: GC-FID-HSS LoQ: 0.004% ABV. TAT 10 days (rush, 5 days) Sample size: 100 mL	Ca.VancouverAgrilab@sgs.com	604.638.2349
Bureau Veritas (Calgary, AB)	GC-FID	alina.Kenstavicius@bureauveritas.com CustomerSolutionsWest@bureauveritas.com www.bureauveritas.com	403.219.3669 ext. 7053669 Toll Free: 833.282.5227

Researchers at the British Columbia Institute of Technology (BCIT) are available to provide support in the review and development of food safety plans, quality assurance programs and production, and distribution processes to ensure that products meet regulatory, safety, and quality requirements. **BCIT can provide support and product testing to evaluate manufacturing processes as well as food safety and quality control measures on a cost recovery basis but are not set up as an analytical testing service and are therefore not able to accept samples on a routine basis.** For more information and to discuss potential projects with BCIT, please contact Michael Chan at Michael.Chan@bcit.ca

Created: Feb 2021. Update (2): Sep 2021

⁶ https://food.r-biopharm.com/wp-content/uploads/2018/01/e-liquid_ifu_e8340_ethanol_en_2017-11.pdf

⁷ Search the on-demand webinars for MEASURING ETHANOL IN KOMBUCHA TEA BY HS-SPME under Food and Beverage Testing at <https://www.sigmaaldrich.com/CA/en/collections/webinars/>

⁸ <https://www.megazyme.com/ethanol-assay-kit?sSearch=ethanol%20assay>

⁹ <https://www.scc.ca/en/search/laboratories>