

Technical Committee and Subcommittee Reports

2019–2020 Report of the Technical Committee

Committee Members: J. Palausky, *Chair*; L. Bech (EBC); D. Bissmeyer; S. Brendecke; B. Gushen; F. Fromuth; R. Fulweiler; B. Gushen; R. Jennings; T. Leslie; A MacLeod; L. Nagle; C. Pachello; N. Rettberg; and R. Foster (*senior advisor*).

The ASBC Technical Committee and Subcommittee chairs conducted a number of method evaluations through collaborative study, and coordinated a range of additional activities during 2019/2020. For this year, seven new methods are recommended for inclusion in the ASBC *Methods of Analysis* (MOA):

- Malt – 6D: Diastatic Power of Malted Barley by Automated Discrete Analysis, chaired by Hannah Turner (Montana State University) Aaron MacLeod (ex-officio).
- Malt – 7E: 3.alpha-Amylase in Malted Barley by Automated Discrete Analysis, chaired by Hannah Turner (Montana State University) Aaron MacLeod (ex-officio).
- Wort – 12C: Free Amino Nitrogen in Wort by Automated Discrete Analysis, chaired by Hannah Turner (Montana State University) Aaron MacLeod (ex-officio).
- Wort – 18C; beta-Glucan in Wort by Automated Discrete Analysis, chaired by Hannah Turner (Montana State University) Aaron MacLeod (ex-officio).
- Microbial Control – 5M : FastOrange™ Brett Detection (IM), chaired by G. Stewart (New Belgium Brewery), C. Pachello (ex-officio).
- Yeast - 17: FastOrange™ Yeast Detection (IM), chaired by G. Stewart (New Belgium Brewery), C. Pachello (ex-officio).
- Beer - 23G, Bitter Compounds in Dry-Hopped Beer by HPLC (IM), EBC Analysis Group Analytica 9.50

The following methods are expected to continue for another year of collaborative study in 2020/2021:

- Farber Pham™ Diastaticus media tests, chaired by Guy Stewart (New Belgium Brewing Co.).
- Hop aroma compound analysis by GCMS, international method, chaired by Nils Rettberg (VLB-Berlin).

The ASBC Technical Committee regularly reviews each section of MOA. In 2019/20 the following reviews of the ASBC Methods of Analysis were initiated:

- Packaging Methods chaired by Brooke Gushen (New Belgium Brewery and Scott Brendecke.
- International Methods chaired by Rebecca Jennings (Origin Malt)

In order to gather information on the requirements of the ASBC membership, the Innovative Methods subcommittee chaired by Robert Fulweiler (Freemont Brewing) produced and sent out a poll to the membership. Based on the response from the poll, the following topics will undergo preliminary analysis and/or ruggedness testing

with the possibility of collaborative study in 2020/2021:

- Acetaldehyde by spectroscopy.
- SO₂ by DTNB.

As in previous years, the following standing subcommittees continue:

Innovative Methods

Robert Fulweiler Robert@freemontbrewing.com

This is a standing subcommittee whose function is to collect, from various sources including polling members, new and alternate methods of analysis that may be useful for the industries our Society serves. These methods are reviewed to establish their merit and utility prior to evaluation in laboratory trials.

International Methods

Joe Palausky, jpalausky@boulevard.com and Lene Bech Lene.Bech@carlsberg.com

The function of this standing subcommittee is to encourage collaboration between ASBC and international brewing organizations. The primary focus is shared method collaboration with both BCOJ and EBC. Current efforts are focused on harmonizing International Methods between organizations.

Craft Brew

Trent Leslie, trent.leslie@madtreebrewing.com

The mandate of this subcommittee is to engage the craft brewing members of ASBC and explore opportunities to make the Society more relevant to these individuals. Additionally, the subcommittee aims to explore opportunities and pursue strategies to bring craft brewers who are not members of the Society into the ASBC. Future projects include extending the sampling plan into a quality data management system built around the sampling plan for easy implementation. Conversations have considered a centrally run software as a service (SAAS), dispersed software that breweries would run locally, or some combination of both.

Sensory Science

(Diane Bissmeyer dbissmeyer@wolfgrp.com)

This is a standing subcommittee. It was formed on the recommendation of the Technical Committee to bring more focus to sensory science in ASBC and provide a forum for sensory scientists in the brewing industry to share and discuss current methodologies and propose new methodologies for collaborative testing. Ongoing initiatives include establishing methodologies for Characteristics of a Good Sensory System, Shelf Life/Stability, and Panel Proficiency.

International Hop Standards Committee

Bob Foster, drhopsgolden@comcast.net

This subcommittee was formed in 1996 between the ASBC and EBC and is a standing Committee whose goal is to produce, purify, and verify isomerized and un-isomerized hop standards for the

brewing, hops, and related industries.

Packaging Methods

(Scott Brendecke, sbrendecke@hotmail.com and Brooke Gushen bgushen@newbelgium.com)

This is a standing subcommittee. It was formed to evaluate packaging methodology, review packaging methods within the MOA, and act as a liaison between ASBC and other packaging related organizations. Current efforts center on a review of both ASBC and EBC methodologies to evaluate gaps between organizations.

Microbiological Methods in Brewing

Caroline Pachello, caroline.pachello@molsoncoors.com

This subcommittee aims to evaluate novel methods for analysis of microbiological samples in brewing, including yeast and bacteria related assays. Individuals interested in contributing and/or participating in collaborative work are encouraged to contact Caroline Pachello directly.

Soluble Starch

Rebecca Jennings, Rebecca@originmalt.com

This is a standing subcommittee whose goal is to coordinate a testing program for soluble starch that will ensure a consistent supply of quality soluble starch for the Society. To further this goal, the subcommittee monitors process methodology utilized in the production of starch, investigates improved methods for starch quality testing, and evaluates potential new suppliers of starch.

Lab Proficiency Program

Rebecca Jennings, Rebecca@originmalt.com, Aaron MacLeod, macleoda@hartwick.edu, and Carol Ericson, cericson@scisoc.org)

This is a standing subcommittee to ensure value and relevancy of the ASBC Check Sample Service. This service provides subscribing members an opportunity to evaluate method accuracy and precision and instrument performance on a scheduled, regular basis. By comparing internal laboratory data to results from other laboratories around the world, a critical assessment of the analytical data generated by subscriber labs can be made and identification of areas for method improvement can be identified.

Hop Aroma Analysis by GCMS

Nils Rettberg, nrettberg@vlb-berlin.org

This subcommittee aims to develop methods for the analysis of hop aroma compounds using GCMS. Full details of this subcommittee will be confirmed in due course as well as international collaboration with the European Brewing Convention Analytical Committee. This analysis is tabled for the immediate future.

MOA 2.0

Katie Fromuth, katie.fromuth@colostate.edu and Elizabeth Nagle liz.nagle@cbrands.com

The subcommittee was formed to create supplemental content which will be associated with the most utilized Methods of Analysis (MOA) but in a separate format, which is under development. The purpose of the content is to be used to create method-specific training and troubleshooting tools that will enhance the methods currently in the MOA.

Over spring and summer 2020, content was submitted for the following four methods: Yeast-4, Beer-9, Beer-8, Beer-25. The first drafts of how the supplemental information look on the website were completed and links were sent to the TC for review. The edits for all four methods were made and updated and four methods

with completed content and finalized website formatting are available to be added to the website. Five additional methods including; Malt 12 - Malt Modification by Friability, Beer23A - Beer Bitterness, Beer 49 - Gluten by R5 Competitive ELISA, Hops 17 - Hop Essential Oils by GC-FID, and Microbiological Control 2 - Detection of Microorganisms are currently being evaluated.

Closing

The Technical Committee Chair would like to thank the current subcommittee chairs for their hard work and dedication in conducting their respective collaborative studies during the past year. Furthermore we would like to formally acknowledge the many subcommittee members who have participated over the past year.

I would also like to recognize the dedication and hard work put forth by all members of the Technical Committee over the previous year. The continual enthusiasm and commitment demonstrated by the team is sincerely appreciated and I firmly believe is key to ensuring that the ASBC Methods of Analysis remains contemporary, relevant, and of exceptional practical value to the brewing community.

Finally, I would especially like to thank two long-time Technical Committee members that are stepping off the committee this year. Aaron MacLeod and Scott Brendecke have been stalwart committee members for many years. Their contribution to the Science of Brewing with producing multiple methods and their assistance with guiding this committee will be difficult to replace.