

BIOAg Project Report

Title: Cider Sensory Evaluation Guide: A Peer-reviewed Extension Publication for Cider makers, Cider distributors, and Researchers

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Abstract: Knowledge of the underlying factors of cider's sensory characteristics and the techniques for assessment is critical to the consistent production of high-quality end product. Our research-based peer-reviewed guide provides an understanding both the theory and practice of cider evaluation, information that provides a much needed foundation for teaching or studying the principles of cider making. Our project, led by a multidisciplinary team of horticulturalists and food scientists, provided for the drafting and publishing of the first ever peer-reviewed cider tasting guide. In collaboration with the international non-profit organization Centre for Agriculture and Biosciences International (CABI), The Professional Handbook of Cider Tasting was released to the public on December 19, 2019 (ISBN 9781789245493). This project was well suited for a BIOAg Extension Mini-Grant as it extended research-based information in support of an industry that is dedicated to sustainable and organic production practices.

Project Description: In the last decade, with the rise of the craft beverage movement, cider has experienced a re-birth. From 2012 to 2016, the industry experienced an annualized growth rate of 27.3 % reaching \$300.4 million in revenue. For the next five years, cider sales were projected to continue growing at a more sustainable rate of 1.2% (Petrillo, 2016). As of 2016, there were 608 reported cider makers across 44 states and the District of Columbia, with New York , Michigan, and California home to more than 60 cider makers each (Statista, 2017). Washington State, the top dessert apple producing state in the U.S., experienced a 22-fold increase in volume of cider produced in the last ten years, from under 50,000 gallons in 2007 to nearly 1 million gallons in 2016 (Alcohol and Tobacco Tax and Trade Bureau, 2017).

In the midst of the industry's rapid growth in the U.S., and prior to our project, there were insufficient publications for understanding both the theory and practice of effectively evaluating the sensory properties of cider. Publications for evaluating cider exist, but they were either not research-based (e.g., Erin James's

Tasting Cider: The CIDERCRAFT® Guide to the Distinctive Flavors of North American Hard Cider, 2017) or were Euro-centric (e.g., Andrew Lea's Craft Cider Making, 2015). Production of a manual that is developed from replicated observations taken in the U.S. is important to provide a standardized guide in which U.S. cider makers can have confidence and from which the U.S. cider industry will directly benefit. The market currently contains many high-quality cider products as a result of apprenticeships and university-based educational workshops. However, access to these opportunities for information acquisition is not equally available to all individuals due to financial and/or logistical constraints. Publishing this guide is important in providing for equal and effective distribution of information that would benefit the entire cider industry.

Outputs

- Overview of Work Completed and in Progress:
 - 1) Cider sensory guide was drafted.
 - 2) Cider sensory guide was submitted for review and published via CABI.
- Methods, Results, and Discussion (discussion for final reports only):

September 2018: Established a stakeholder review panel consisting of one cider researcher, one cider author, and two cider makers. Drafted Introduction, Table of Contents, Glossary, and Literature Cited sections, then had writings reviewed by stakeholder panel, and in response to panel feedback writings were revised.

October-December 2018: Drafted Chapters 2-3, had them reviewed by stakeholder panel, and in response to panel feedback writings were revised.

January-June 2019: Drafted Chapters 4-6, had them reviewed by stakeholder panel, and in response to panel feedback writings were revised.

July-November 2019: Submitted whole manuscript draft to CABI for publishing consideration, was accepted for publication, and initiated editing and designing of handbook.

December 2019: Completed design of handbook, produced marketing materials including fliers and poster, and officially released publication.

Continual industry feedback during the development of this manual was valuable to ensure that the material included was relevant and correct in terms of broad cider production operations. It was important to select a panel that was representative of cider production, cider science, and cider

marketing, and each panel member provided insight to improve the content. Finally, partnership with the Cider Institute of North America (CINA) at the publication stage further demonstrates collaboration and broader reach, as this partnership allows for greater use of the manual in CINA classes.

- Publications, Handouts, Other Text & Web Products:

The Professional Handbook of Cider Tasting

By: Travis Robert Alexander, Washington State University, US, Brianna Ewing Valliere, Washington State University, US

December 2019 | Paperback | 96 Pages | 9781789245493

<https://www.cabi.org/bookshop/book/9781789245493/>

The Professional Handbook of
Cider Tasting

Travis Robert Alexander and Brianna L. Ewing Valliere



- Outreach & Education Activities:

Advertisement of handbook and opportunities for direct sales will be made via the WSU Ciders & Fermented Foods Quarterly Newsletter (January 2020), the WSU cider website (<https://cider.wsu.edu/>), the annual meeting

of the Northwest Cider Association (Tacoma, WA, March 10, 2020), the Northwest Michigan Orchard and Vineyard show (Traverse City, MI, January 14 & 15, 2020), and two national conferences (CiderCON in Oakland, CA, January 30, 2020 and ASHS in Orlando, FL, August 11, 2020).

Impacts

Short-term: Cider makers across this country now have literature designed for them to benefit the success of their operations. Academic instructors have an additional resource to utilize in course delivery, WSU courses FS 405 and FS 422 are example beneficiaries. Researchers have a solid reference for development of grant proposals. Copies of the publication will be donated to the WSU Owen Science and Engineering Library in Pullman, WA and the WSU Northwestern Washington Research and Extension Center Library in Mount Vernon, WA.

Intermediate-term: An increase in both cider maker and professional educator awareness and knowledge of quality cider products. This will lead to an increase in the production of quality cider, which should support increased cider sales. In 2-3 years, it should be expected that cider makers will discuss cider production with more refined, targeted, and uniform terminology. The publication of this handbook will reveal knowledge gaps of cider production that will lead to opportunities for future research.

Long-term: The handbook will provide for standardization of cider quality, which will enable the industry to continue sustained growth. It will protect against poor quality cider products that can negatively impact the whole industry.

Additional funding applied for/secured: No additional funding has been applied for as the project's goal was met, and the guide has been published.

Graduate students funded: No graduate students were funded, but salary for a postdoctoral researcher was provided.

Recommendations for future research: It is recommended that a second edition of the handbook be released in 2029 to summarize new research and reflect on any significant changes in the industry since publication of the first edition.