

## BIOAg PROJECT PROGRESS REPORT

**TITLE:** Production Cost Estimation of Establishing a Cider Apple Orchard in Washington State

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**KEY WORDS:** Cider apple, orchard establishment costs, production costs

### ABSTRACT

This project addresses the BIOAg priority of economic analysis by investigating the cost and returns for establishing and producing a cider apple orchard in western Washington. Cider is fermented apple juice and is often referred to as 'hard cider' in the U.S., but the term 'cider' will be used throughout this report. The enterprise budget is for specialty cider apple varieties used to make high quality ciders. The project goal is to support the development of an economically sustainable cider industry in western Washington. Cider apple production is not limited by environment-induced diseases (e.g., scab) which otherwise limit apple production and marketable yields in western Washington. In addition, fewer pesticides are used for cider apple production since minor surface blemishes are tolerated if yield and internal fruit quality are not affected. Cider production also promotes greater social sustainability in rural communities by providing employment opportunities beyond the apple harvest season (e.g., cider pressing and bottling). Cider production is well suited to small-scale artisanal producers in western Washington who primarily rely on local markets. Washington is poised to become a leader in cider research and production in the U.S. and WSU Mount Vernon NWREC has one of the most active cider research and education programs in the country. This project will strengthen the knowledge base for the expanding Washington cider industry.

### PROJECT DESCRIPTION

The volume of cider produced in the U.S. increased by 54% per year on average from 2007 to 2012 (T. Baston, TTB, personal communication, 2013). In response to increases in demand, a

cider industry is expanding in Washington, and cider production has increased on average 37% each year over this same time period. This project has: (1) created an enterprise budget for establishing and maintaining a cider apple orchard in western Washington; and (2) disseminated results of the study to growers and other stakeholders in the cider apple industry.

The outputs of the project will help strengthen the knowledge base for the expanding Washington cider industry. Future studies will provide cost estimates for establishing a cider apple orchard in central Washington, and will expand testing the suitability of different mechanical harvesters for cider apples.

## OUTPUTS

- Work Completed: An enterprise budget on establishment and production of a cider apple orchard in western Washington has been developed. First, in spring 2013 a production scenario in western Washington was outlined based on cider apple production practices at WSU Mount Vernon NWREC. Then in June 2013, a focus group meeting with 2 cider apple growers in western Washington was organized and current horticultural and management practices were recorded (baseline data). Next, variable and fixed cost production data were collected. All data were then assembled into Excel spreadsheets and sent to five cider apple growers for review and validation. The finalized enterprise budget is in press as a new WSU Extension bulletin.
- Publications, Handouts, Other Text & Web Products: We created a new web page 'WSU Cider Information', <http://extension.wsu.edu/maritimefruit/Pages/CiderInfo.aspx>. A link to our new cider orchard budget will be posted on this site. We created a poster for grower meetings to highlight the project's key results, and this poster is posted on our webpage. We have also posted links to our new on-line trainings for cider apples. We are presenting a poster that summarizes the cider enterprise budget at the 2014 ASHS annual conference. We propose to publish a new HortTechnology journal article that compares and contrasts cider orchard enterprise budgets for western and eastern Washington.
- Outreach & Education Activities: Results were presented at:
  - Washington State Horticultural Association (WSHA) 109<sup>th</sup> Annual Meeting, Wenatchee, WA, December 3, 2013
  - Great Lakes Expo, Grand Rapids, MI, December 12, 2013
  - Great Plains Expo, St. Joseph, MO, January 9, 2014
  - Empire State Producers Expo, Syracuse, NY, January 22, 2014
  - EcoFarm Conference, Pacific Grove, CA, January 24, 2014
  - CiderCON, Chicago, IL, February 6, 2014
  - Cider business workshop, Northwest Agriculture Business Center, Mount Vernon, WA, May 3, 2014
  - Mother Earth News Sustainable Living Fair, Puyallup, WA, May 31, 2014

## IMPACTS

- Short-Term: This project provides Washington growers with new information and results regarding the costs for establishing and producing a cider apple orchard in western Washington. Information regarding break even prices and profitability will

assist growers in determining which options to select for orchard planting systems and what prices to set for fruit. Information generated by this project has been shared with colleagues and producers through state and national meetings, and through a new Extension publication. We anticipate 20 growers will adopt information from this study within the first 5 years, impacting a total of 100 acres in western Washington.

- Intermediate-Term: Ten new cider apple orchards will be established in western Washington by 2020 as a result of this project. New producers will consider including specialty cider apple varieties in their orchard planning. Additionally, cider apple growers will consider the use of production contracts to offset risks of new orchard establishment.
- Long-Term: Improvements in the economic status of cider orchards, including planting varieties most in demand, will increase the economic viability of orchardists throughout the region. Cider production can provide a high-value use for cull dessert apples as well, when combined with selected specialty cider varieties. By 2025 there will be at least 30 cideries and 40 cider apple growers in western Washington.

**ADDITIONAL FUNDING SECURED:** A related study to develop a cost-of-production budget for cider apples in central Washington and a partial budget for mechanical harvest (using a small fruit harvester) has been funded by the WSDA Specialty Crop Block Grant for 2014. We have submitted a NIFA SCRI planning grant for cider research and extension, with the intent of submitting a full NIFA SCRI CAPs proposal in 2015.

**GRADUATE STUDENTS FUNDED:** None

**RECOMMENDATIONS FOR FUTURE RESEARCH:** The price of cider apples used in this study (i.e., median price of \$315/bin or \$0.35/lb) is an approximation of what cider makers in western Washington currently pay or are willing to pay for specialty cider apple varieties. Currently, there are no published statistics or reports on the prices, production and utilization of cider apples in Washington or the U.S. Further research work is warranted to examine the supply of and demand for cider apples. There is also a need to compare cider apple production costs between western and central Washington to account for any regional variations.