

Considerations in Designing & Establishing a Cider Orchard

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The U.S. Alcohol and Tobacco Tax and Trade Bureau reported that in 2014 over 54 million gallons of hard cider were sold in the U.S. A substantial, but unknown amount of this cider was produced using apples grown in the U.S. This volume of cider would require approximately 6.1 million bushels (256 million pounds) of apples, equivalent to 2.7% of the U.S. apple crop. If the recent 75% per annum growth in cider production continues, the cider industry could be using an equivalent of nearly 10% of all apples currently produced in the U.S by 2018. The potential value of these apples is \$332 million. Currently, there are 55 cider producers in New England (by state: ME=9, NH=6, VT=16, RI=1, and MA=23) (www.cydermarket.com). Increased cider production could create new opportunities for New England's apple growers, allowing for orchard expansion and diversification, as well as increased profitability. A 2012 survey conducted in Virginia found that one-third of the Virginia cider makers were willing to pay 20% more and two-thirds were willing to pay 50% more for European cider apples than the average price they were paying for culinary apples. Anecdotally, apple growers in the Finger Lakes region of New York are reportedly selling European cider apples for upwards of \$40 per bushel.

However, many of the specialized European cider cultivars that are desired by cider producers have been selected for their fruit and juice quality more so than their horticultural performance, and thus present production challenges to commercial apple growers. Some of the known issues with European cider varieties include biennial bearing, susceptibility to fireblight, susceptibility to powdery mildew, pre-mature fruit drop, overly vigorous growth, and production of extensive blind wood (shoots with few or no flower buds).

So, what kind of planting system is best for growing cider apples? In many apple production regions of the U.S., there has been a dramatic shift towards growing fresh market varieties in high-density orchards using dwarfing rootstock with trellis systems. The benefits of these intensive apple production systems are clear: greater precocity, better fruit quality, less biennial bearing, better spray coverage, and greater labor efficiency. These factors all lead to greater profitability. Will the benefits that have been found for growing culinary apples in high-density orchards convey to cider apples? I suggest that the answer is most likely yes. In fact, many cider apple growers in Europe now use high-density systems. However, installation costs of \$15,000 to \$25,000 per acre mean that cider apple growers need to carefully consider the pros and cons of using high-density orchard systems.

While the consumption of hard cider has grown astronomically in recent years, and major marketing firms predict a continued growth for the next decade, there is no guarantee that these consumer trends will continue. An orchard is a 20-25 year investment and growers will have to weigh the risk of planting varieties that have not been widely grown or objectively evaluated in New England. Additionally, apple growers will have to weight the potential lost opportunity costs if cider consumption trends falter.

Some general recommendations:

- Plant orchards in horticulturally desirable sites
 - Meaning sites with excellent sun exposure, air drainage, well-drained soils, etc.
 - At \$15K+ per acre for installation, all but the best sites are going to give less than desirable results
- Use precocious rootstocks that are disease resistant
 - There are several Geneva stocks that will have a mature tree size between M.9 and M.26, but have greater resistance to soil-borne diseases, replant disease, and fireblight
- Use varieties that are going to produce annually and have some level of disease resistance
 - European? American? Traditional New England?
 - Talk to your customers to understand their needs
 - See some suggestions in the below resources
- Use plant growth regulators for:
 - Thinning, increasing return bloom, minimizing pre-harvest drop, and, if harvesting from the ground, fruit loosening
- What's most important to you (if you're producing your own cider) and/or your buyer (if you're selling fruit to a cidery)?
 - Fruit with high tannin content? High yields? Labor efficiency? Organic?
- Do your homework, an orchard is a 25-year-long investment

Resources

General Information

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Cost of Producing Cider Apples

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Cider Apple Variety Information

Miles, C., King, J., & Peck, G. (2015). Commonly Grown Cider Apples In the U.S. Washington State University CIDER Report #2. Retrieved from: www.wsu.edu/maritimefruit/hard-cider/.

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National Hard Cider Conference: www.ciderconference.com

U.S. Association of Cider Makers (USACM): www.ciderassociation.org