

# Paul Vossen Specialty Crops Advisor – UCCE (Sonoma-Marin)



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## Division of Agriculture & Natural Resources



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Specialty Crops and OLIVES

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Specialty Crops



**Paul Vossen, Farm Advisor**

Paul Vossen has been a Farm Advisor in Sonoma County for over 25 years. He works with the county's 800 small-scale commercial farmers who grow olives, tree fruits, nuts, berries, vegetables, herbs, cut flowers, and other specialty crops on about 8,000 acres. His goal is to help farmers, processors, and marketers make a profit in local agriculture while promoting sustainable practices. His research and educational program emphasizes crop diversity. He also manages the 200 volunteers in the Master Gardener Program who help educate home gardeners about pest management and good cultural practices.

Specialty Crops Advisor



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# Cider Goes Trendy



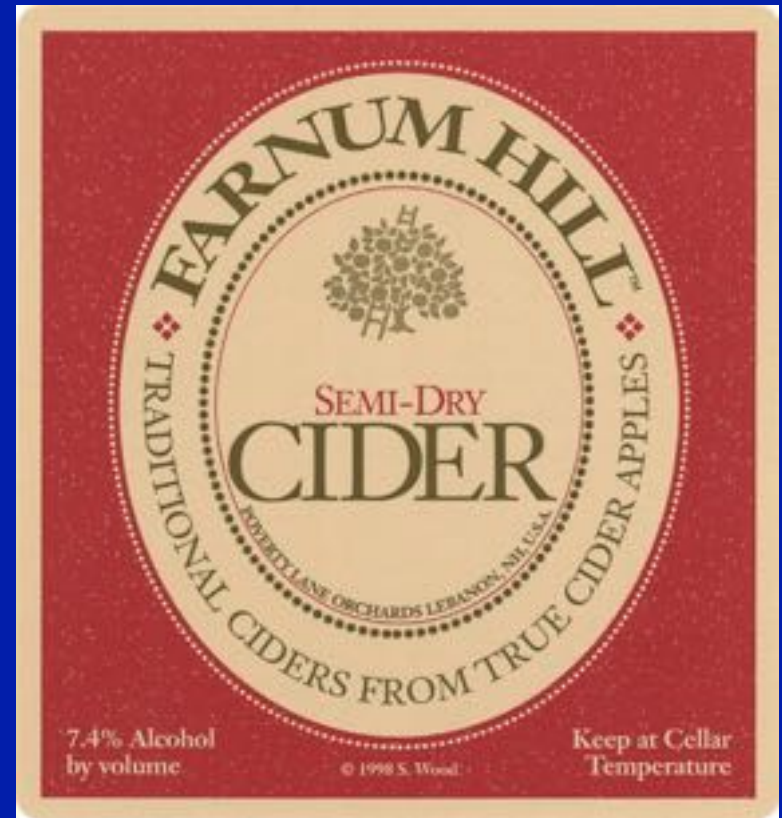


# Lets start a “Name Trend”

## Apple Juice



## Apple Cider



**NOT Cidre**

# \$ 500 million in USA

**ALSO:**

**Huge industry  
in England,  
France, &  
Spain**

Craft Beer

“categories” (Chicago Cider  
Summit)

**#1 – IPA**

**#2 – Cider**

**#3 - ????**





# Emerging Industry

351 Cider Makers in USA

40 in Oregon

10 in Washington

12 in Sonoma County

**NOVEMBER 2014**

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**SEDUCTION**  
Opening Party Thurs, Feb 27-11 PM | Asian Art Museum

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November 23, 2014

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## Hard apple cider seeing welcome revival

By Kimberley Lovato

If an apple a day keeps the doctor away, then some might just become healthier than ever. Hard apple cider is having a moment right now here in the U.S., or really, a revival. Once the most popular drink during colonial times (settlers imported apple trees from England), and still pervasive throughout the United Kingdom, hard cider fell on hard times when beer became the tipple of choice during the 19th century. But hard apple cider is back — hardcore.

Maybe it's the recent attention to gluten, or maybe it's our love affair with nostalgia, but hard cider sales have reportedly tripled over the last three years, raking in approximately \$1.3 billion in 2013. A U.S. Association of Cider Makers was formed in February 2013 to advance cider in the market. Big brewer MillerCoors released its Smith & Forge Hard Cider in March. In May, Anheuser-Busch InBev presented its first new product in eight years when it introduced Johnny Appleseed Hard Cider, whose namesake (Johnny Chapman) grew apples for making hard cider during the late 1700s to early 1800s.

Not to be confused with non-alcoholic juice sometimes sold as cider, hard apple cider is a fermented beverage usually made with an assorted variety of apples that can alter the taste of the finished product, from bitter to sweet and even bitter-sharp.

In San Francisco, the trend is in full bloom with companies like Golden State Cider ([www.drinkgoldenstate.com](http://www.drinkgoldenstate.com)) leading the charge. The brand is part of the portfolio of family-run Devoto Orchards



COURTESY PHOTO

Golden State Cider, produced by the Sonoma County-based Devoto Orchards, is made from fresh-pressed West Coast apples and has no added sugar, water, gluten or concentrates.

TOOLS



# Information on making Cider



**Artisanal Ciders From Around the World**  
**April 23rd, 2016**  
**Civil War Parade Ground, The Presidio**

**CIDER SUMMIT S.F.**

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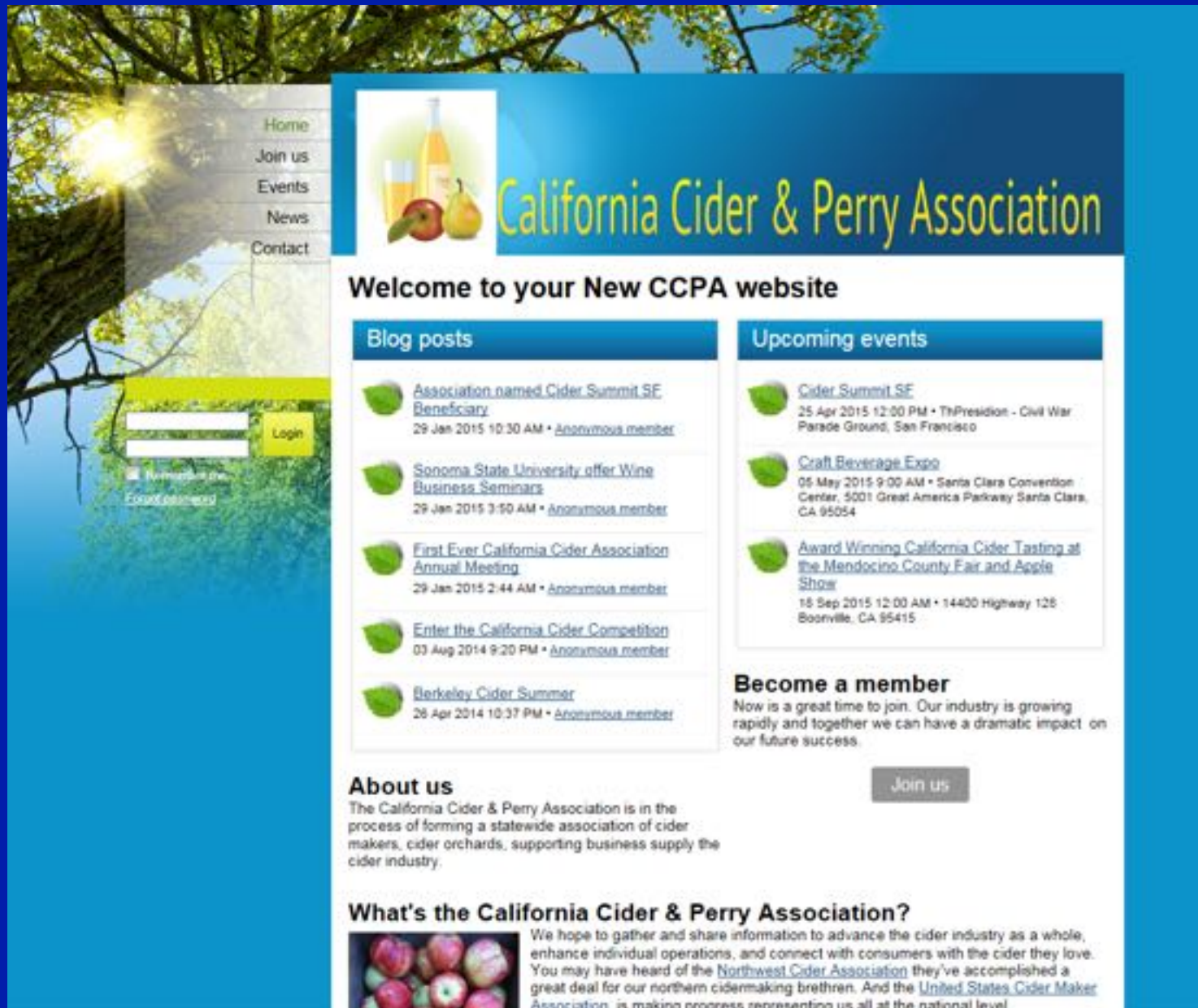
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# CA Association








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## California Cider & Perry Association

### Welcome to your New CCPA website

#### Blog posts

-  [Association named Cider Summit SE Beneficiary](#)  
29 Jan 2015 10:30 AM • [Anonymous member](#)
-  [Sonoma State University offer Wine Business Seminars](#)  
29 Jan 2015 3:50 AM • [Anonymous member](#)
-  [First Ever California Cider Association Annual Meeting](#)  
29 Jan 2015 2:44 AM • [Anonymous member](#)
-  [Enter the California Cider Competition](#)  
03 Aug 2014 9:20 PM • [Anonymous member](#)
-  [Berkeley Cider Summer](#)  
26 Apr 2014 10:37 PM • [Anonymous member](#)

#### Upcoming events

-  [Cider Summit SE](#)  
25 Apr 2015 12:00 PM • Th/Presidion - Civil War Parade Ground, San Francisco
-  [Craft Beverage Expo](#)  
05 May 2015 9:00 AM • Santa Clara Convention Center, 5001 Great America Parkway Santa Clara, CA 95054
-  [Award Winning California Cider Tasting at the Mendocino County Fair and Apple Show](#)  
18 Sep 2015 12:00 AM • 14400 Highway 128 Boonville, CA 95415

#### Become a member


Now is a great time to join. Our industry is growing rapidly and together we can have a dramatic impact on our future success.

[Join us](#)

#### About us

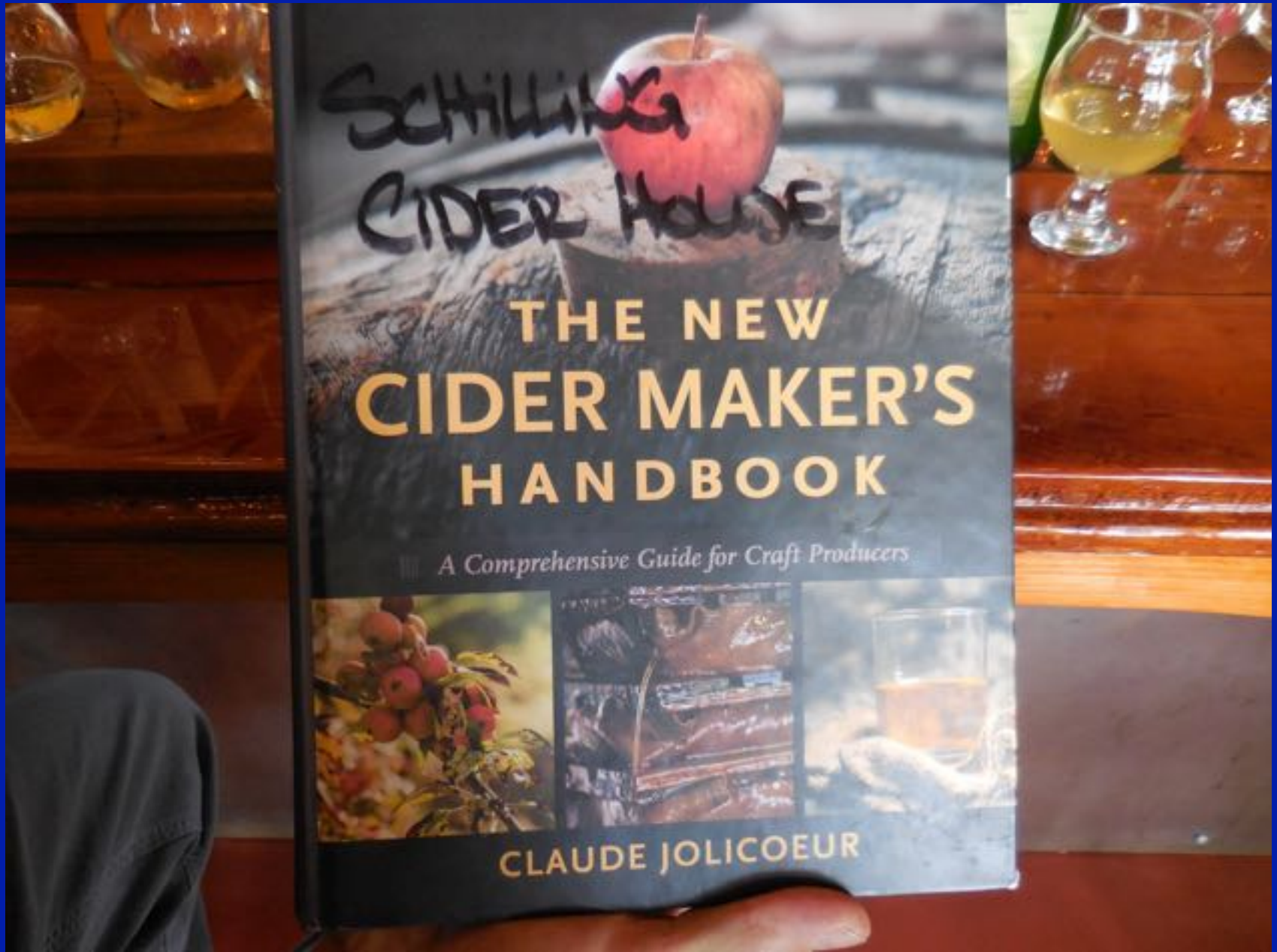
The California Cider & Perry Association is in the process of forming a statewide association of cider makers, cider orchards, supporting business supply the cider industry.

#### What's the California Cider & Perry Association?



We hope to gather and share information to advance the cider industry as a whole, enhance individual operations, and connect with consumers with the cider they love. You may have heard of the [Northwest Cider Association](#) they've accomplished a great deal for our northern cidenmaking brethren. And the [United States Cider Maker Association](#) is making progress representing us all at the national level.

# Various Ciders



CLAUDE JOLICOEUR



# Two 1° Cider Categories

## Beer-like

- \$ 6-10 - six pack
- \$ 10 -14.00 - 22 oz. bottle



## Wine-like

- \$ 15 - \$30 – 22 oz. bottle
- \$15 – 375 ml bottle



# Top 14 US Cider Brands (\$)

1. Angry Orchard – Boston Beer Co: \$208.1 million
2. Woodchuck – C&C Group: \$38.3 million
3. Johnny Cider – Anheuser-Busch: \$20.7 million
4. Smith and Forge – Miller-Coors \$19.6 million
5. Strongbow – Heineken USA: \$15.2 million
6. Stella Artois Cidre – Anheuser-Busch: \$11.9 million
7. Crispin – Miller Coors: \$8.4 million
8. Michelob Cider - Anheuser-Busch: \$7.5 million
9. Hornsby's – C&C Group: \$6.3 million
10. Bold Rock – Bold Rock: \$2.5 million
11. Magners – C&C Group: \$2.4 million
12. Wyders – C&C Group: \$2.2 million
13. Ciderboys – Ciderboys: \$2.2 million
14. Ace – California Cider Co: \$2.2 million





# THE CIDER JOURNAL

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## Top Rated Hard Ciders at The Cider Journal

Posted February 9, 2015.

**Top Rated!**

Below are the highest rated hard ciders reviewed here at The Cider Journal over the past few months. Each are outstanding examples of today's renaissance in craft cider from across the globe. We urge you to not simply look at the ratings, but to click through and read the reviews.

[Carlton Cyderworks Citizen Cider](#) - **4.5 STARS**

[2013 Tilted Shed Ciderworks Lost Orchard Cider](#) - **4.5 STARS**

[2013 Tilted Shed Ciderworks Barred Rock Barrel Aged Cider](#) - **4.5 STARS**

[South Hill Cider Company Soundpost Cider](#) - **4.5 STARS**

[Eden Sparkling Dry Cider](#) - **4 STARS**

[Bereziartua Sagardoak Basque Cider](#) - **4 STARS**

[2012 Wandering Aengus "Wanderlust" Cider](#) - **4 STARS**

[Blue Mountain Cider Company Oregonian](#) - **4 STARS**



**Cider Summit Chicago**

**February 7th**  
Navy Pier Grand Ballroom

**Artisanal Ciders**  
From Around The World

11am - 3pm & 4pm - 8pm  
**21 & Over Only**



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# Top Rated Hard Ciders

Posted February 9, 2015 - - <http://ciderjournal.com>

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[Blue Mountain Cider Company Oregonian](#) - **4 STARS**

[Westcott Bay Traditional Dry Cider](#) - **4 STARS**

[Westcott Bay Semi Dry Cider](#) – **4 STARS**

[Albemarle Ciderworks Red Hill](#) – **4 STARS**

[Albemarle Ciderworks Jupiter’s Legacy](#) – **4 STARS**

[Sea Cider Kings and Spies Hard Cider](#) – **4 STARS**

# Cider Reviews

## *Wine-like (made from cider apples)*

- Color: light amber/orange, clear
- Bubbles: short burst of short-lived bubbles
- Aroma: pure and direct and fresh - ripe, bright apple - great intensity + orange peel, cinnamon and a hint of yeastiness
- Body: medium - great deal of texture from tannin and acidity + little or no weight is derived from sugar and the sparkle is apparent, but minimal
- Flavor: intense and deep - fresh apple – slightly cooked + a hint of bitter like shaven apple peels + citrus + woody note with the tannin
- Finish: long, lingering.
- Alcohol: 8.6%



# Not-So-Top Rated Hard Ciders

*July 7 – 2014 [ciderjournal.com](http://ciderjournal.com)*

- Angry Orchard Crisp Apple Hard Cider 1.5 STARS
- Appeltreow Winery Sparkling Perry 2.5 STARS
- Argus Cidery 2012 Idalou Brut Sparkling Cider 3 STARS
- Crispin “The Saint” Artisanal Reserve Cider 3 STARS
- Foggy Ridge First Fruit Hard Cider 3.5 STARS
- Foggy Ridge Sweet Stayman Hard Cider 4 STARS
- J K’s Scrumpy Cider — Orchard Gate Gold 2.5 STARS
- Newton’s Folly Authentic Cider 1.5 STARS
- Woodchuck Farmhouse Select Original 91 Hard Cider 1.5 STARS

# Cider Reviews

## *Beer-like Product (Angry Orchard)*

- Color: Golden colored
- Bubbles: noticeable carbonation that hits like a brick.
- Aroma: ripe apple, Mott's apple juice one-dimensional
- Body: somewhat light bodied
- Flavor: dominated by heavy amounts of residual sugar, citrus and a prominent stewy/apple sauce component + nothing bitter or sharp + spitting image of Jolly Rancher Green Apple candy liquified
- Alcohol: 5.0%

**Angry Orchard will be responsible for introducing many people to cider in the United States**

# Yields – Fruit & Juice

- 1 dwarf cider apple tree will produce about 45 lbs. fruit.
- 13 - 16 lbs. fruit produce 1 gal. cider, depending on variety and pressing method
- 125 - 150 gallons per ton
- 15 - 40 tons/acre





# Price for apples & juice

*125-150 gallons of juice/ton fruit*

## Beer-like – dessert apples

- \$ 150-450/ton
- \$ 1-3/gallon for juice



## Wine-like – cider apples

- \$ 700 – 1,200/ton
- \$6 to 8/gallon for juice



# Apple Production Information

- IPM for Apples and Pears # 3340
- Commercial Apple Production # 2456
- Organic Apple Prod Manual # 3403
- Diseases of Temperate Zone Tree Crops # 3345
- Biological Control of Pests by Mites # 3304
- Bio Control and Insect Pest Mgmt # 1911
- Apple Maggot in the West # 3341
- Apple Scab Management # 21412
- UC IPM Guidelines <http://www.ipm.ucdavis.edu>
- Sonoma County <http://cesonoma.ucdavis.edu>
- <http://fruitsandnuts.ucdavis.edu/>



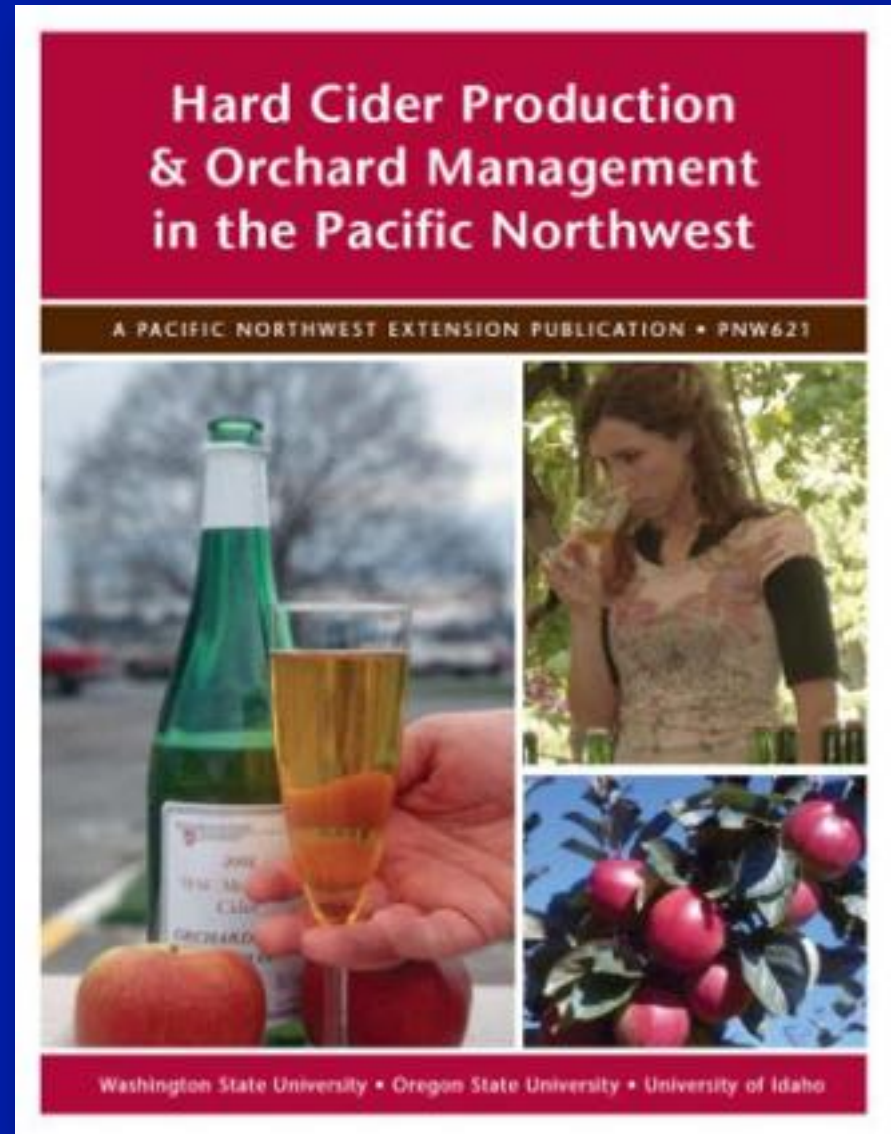
# Keys to Successful Apple Trees

1. **Good location: Climate, soil, water, sunlight**
2. **Right Variety – Right Rootstock**
3. **Plant high (mound or berm)**
4. **Correct Spacing – match rootstock & soil**
5. **Train trees to central leader or open vase**
6. **Irrigation if water is available**
7. **Adequate fertility**
8. **Thin fruit efficiently**
9. **Control Weeds – Insects - Diseases**
10. **Manage vigor & light with pruning**



**WSU Extension  
Manual PNW0621  
(2010)**

<http://maritimefruit.wsu.edu>



# Cider Apple Production Costs and Mechanization

**C. Miles, S. Galinato and J. King**



**Northwestern Washington Research  
and Extension Center**

**<http://maritimefruit.wsu.edu>**

- ❖ **Overview of cider apple production in Washington**
  - ❖ **Enterprise budget for Western Washington**
    - Estimate main production costs
    - ‘Cost Estimation of Establishing a Cider Apple Orchard in Western Washington’ (FS141E)
    - <http://cru.cahe.wsu.edu/CEPublications/FS141E/FS141E.pdf>





## Budget Assumptions

Total orchard operation	10 acres
Growing area	9 acres
Architecture	Central leader system
Rootstock	Dwarf – M9 series
Cider apple variety	Several varieties (e.g., Kingston Black, Yarlington Mill, Brown Snout, Dabinett, Porter's Perfection, Vilberie, Foxwelp)
In-row spacing	5 feet
Between-row spacing	12 feet
Density	726 trees/acre
Commercial life of planting	25 years (including 4 years of establishment)

## Per Acre Cost and Returns of Establishing and Producing Cider Apples in Western WA

	Establishment Years				Full Production <sup>[1]</sup>	Year Costs
	Year 1	Year 2	Year 3	Year 4		
Estimated Gross Production (bushels)			5.00	12.00	46.00	
Estimated Price (\$/bu)			315.00	315.00	305.00	
<b>Total Returns (\$/acre)</b>			1,575.00	3,780.00	14,030.00	
<b>Variable Costs (\$/acre):</b>						
<b>Establishment</b>						
Soil Preparation	500.00					
Trees (including labor)	5,263.50					
<b>Orchard Activities</b>						
Pruning & Training <sup>[2]</sup>	288.00	720.00	1,080.00	1,440.00	1,280.00	
Green Fruit Thinning <sup>[3]</sup>		144.00	288.00	576.00	576.00	
Irrigation Labor <sup>[4]</sup>	480.00	480.00	480.00	480.00	480.00	
Chemicals <sup>[5,6]</sup>	350.00	350.00	350.00	350.00	300.00	
Fertilizer <sup>[7]</sup>		60.00	60.00	60.00	248.00	
Manual Pest Control <sup>[8]</sup>	120.00	120.00	120.00	120.00	120.00	
Bees/bs			50.00	50.00	50.00	
General Farm Labor <sup>[9]</sup>	180.00	180.00	180.00	180.00	180.00	
Irrigation/Facility Charge	144.00	144.00	144.00	144.00	144.00	
<b>Harvest Activities<sup>[10]</sup></b>					3,726.00	
Picking Labor			405.00	972.00		
<b>Maintenance and Repairs</b>						
Machinery Repair	50.00	75.00	100.00	120.00	140.00	
Fuel & Lube	70.00	70.00	110.00	130.00	140.00	
Irrigation System Maintenance	50.00	50.00	50.00	50.00	50.00	
<b>Other Variable Costs</b>						
Overhead (5% of VC)	374.79	179.65	179.85	233.80	373.20	
Interest (5% of VC) <sup>[10]</sup>	393.51	125.63	179.39	245.28	295.90	
<b>Total Variable Costs</b>	8,263.79	2,638.28	3,563.24	5,150.88	8,131.10	
<b>Fixed Costs (\$/acre):</b>						
<b>Depreciation</b>						
Irrigation System	100.00	100.00	100.00	100.00	100.00	
Machinery, Equipment & Building	564.16	564.16	564.16	564.16	564.16	
Tools	90.51	90.51	90.51	90.51	90.51	
<b>Interest</b>						
Irrigation System	62.50	62.50	62.50	62.50	62.50	
Land	675.00	675.00	675.00	675.00	675.00	
Machinery, Equipment & Building	452.60	452.60	452.60	452.60	452.60	
Tools	56.57	56.57	56.57	56.57	56.57	
Establishment Cost (5%)		514.30	771.64	1,022.41		
<b>Other Fixed Costs</b>						
Miscellaneous Supplies	200.00	200.00	200.00	200.00	200.00	
Land & Property Taxes	135.00	135.00	135.00	135.00	135.00	
Insurance Cost (all lines)	80.00	80.00	80.00	80.00	80.00	
Management Cost	300.00	300.00	300.00	300.00	300.00	
<b>Amortized Establishment Cost<sup>[10]</sup></b>					1,874.27	
<b>Total Fixed Costs</b>	2,022.79	2,536.49	2,795.22	3,044.60	3,963.46	
<b>TOTAL COSTS</b>	10,286.58	5,174.77	6,358.47	8,195.48	12,094.56	
<b>ESTIMATED NET RETURNS</b>	(10,286.58)	(5,174.77)	(4,807.47)	(4,415.48)	2,007.45	
<b>Accumulated Establishment Costs</b>	10,286.58	15,603.34	20,448.21	24,863.69		

**\$ 3,726 per acre  
Hand harvest =  
46% of variable costs**

**\$ 12,092 per acre =  
Total fixed and  
variable costs**

[1] The full production year is representative of all the remaining years the orchard is in full production (Year 5 to Year 25).

[2] Hand labor rate is \$12/hour in Year 1, and \$15/hour in subsequent years.

[3] For pruning and training, hand labor rate is \$12/hour in Year 1, and \$15/hour in subsequent years. For green fruit thinning, \$12/hour. Labor rate includes all applicable taxes and benefits.

[4] Irrigation labor and chemical application is \$12/hour and includes all applicable taxes and benefits.

[5] Includes materials and labor.

[6] Hand removal of pests, including tent caterpillars.

[7] General farm labor rate is a lump sum per acre and applied to miscellaneous/all other labor. Rate includes applicable taxes and benefits.

[8] Hand labor. Picking rate = \$60/bin.

[9] Interest expense on full year during establishment years and for 3/4 of a year during full production.

[10] Represents the costs incurred during the establishment years (minus revenues during those years) that must be recaptured during the full production years.

# Estimated Costs & Returns (\$/Acre)

Estimates	Production Year				
	1	2	3	4	Full
Yield (bins/A)			5	12	46 (20 T)
Price (\$/bin)			315	315	315 (\$350/T)
Total Returns			\$1,575	\$3,780	\$14,490
<i>Establishment</i>	\$5,764				
<i>Operations</i>	\$1,562	\$2,198	\$2,752	\$3,400	\$3,408
<i>Harvest</i>			\$405	\$972	\$3,726
<i>Maintenance</i>	\$170	\$195	\$260	\$300	\$330
Total Variables	\$8,264	\$2,638	\$3,767	\$5,151	\$8,131
<i>Depreciation</i>	\$730	\$730	\$730	\$730	\$730
<i>Interest</i>	\$1,226	\$1,771	\$2,063	\$2,346	\$1,226
Total Fixed Costs	\$2,642	\$3,187	\$3,478	\$3,762	\$4,789
Total Costs	\$10,905	\$5,828	\$7,425	\$8,913	\$12,920
NET RETURNS	-\$10,905	-\$5,828	-\$5,850	-\$5,133	\$1,570
Accumulated Costs	\$10,905	\$16,731	\$22,401	\$27,534	



Price and yield scenarios during *full production*

Yield (bins/A)	Price (per bin)					
	300	320	360	380	400	540
20	-4,626	-4,226	-3,426	-3,026	-2,626	
25	-3,567	-3,067	-2,067	-1,567	-1,067	
30	-2,508	-1,908	-708	-108	492	
35	-1,450	-750	650	1,350	2,050	
40	-391	409	2,009	2,809	3,609	
45 (20T)	668	1,598	3,368	4,268	5,168	6,976
50	1,727	2,727	4,727	5,727	6,727	

1 bin = 900 lbs

\$320 = \$711/T

\$380 = \$840/T

\$540 = \$1,200/T

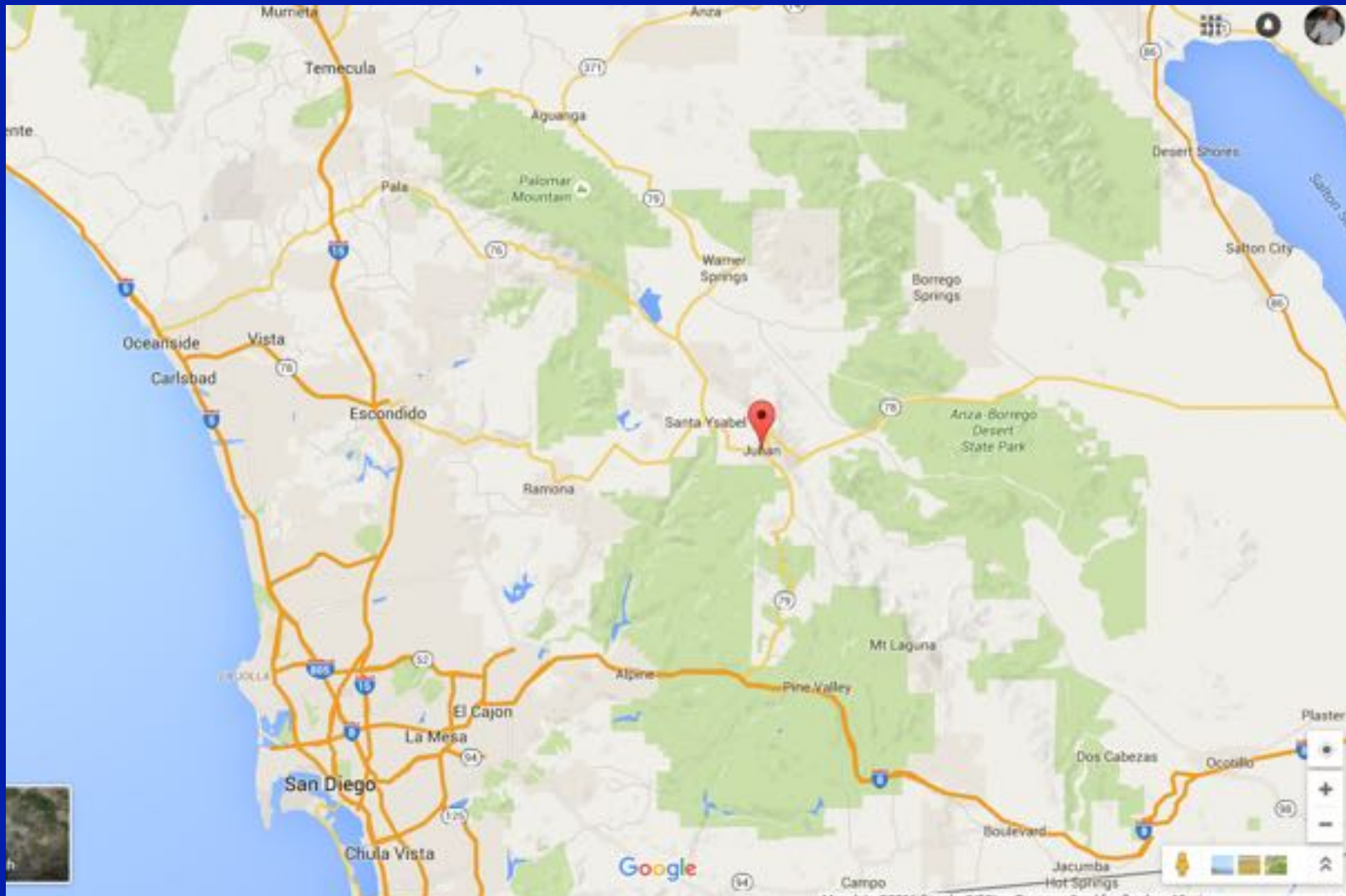
# Seasonal Water Requirement

April - October (30 yr. average in inches) (Sonoma County)

	<u>Marine</u>	<u>Coastal Cool</u>	<u>Coastal Warm</u>
April	2.8	4.0	4.5
May	2.9	5.8	6.9
June	2.8	5.6	7.0
July	3.4	6.1	7.9
August	3.1	5.2	6.8
Sept.	3.1	4.4	5.7
Oct.	<u>3.1</u>	<u>3.3</u>	<u>3.7</u>
<b>TOTAL</b>	<b>21.2</b>	<b>34.4</b>	<b>42.5</b>

# Basic Site Feasibility

- *Chilling - Irrigation Water - Slope*





# Paul Vossen

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