

Quality Factors in Cider Making

from

THE NEW CIDER MAKER'S HANDBOOK

CLAUDE JOLICOEUR

INTRODUCTION

- Why this search for quality in cider?
- The main themes of this talk:
 - 1- The quality of the fruit
 - The varieties of apples
 - The way of growing them
 - 2- Blending for a well balanced cider
 - 3- Controlling the fermentation process

Why bother making high quality ciders?

- The image problem of cider (compared to wine).
- Time, \$ and energy investment.
- Pleasure, pride and satisfaction.

**If you are to make cider,
then please make it good!**

1

GOOD CIDER NEEDS GREAT APPLES

*Whoever thinks that
“any apple is good enough for cider”
had better not engage in the business.*

J.M. Trowbridge

The Cider Maker's Handbook, 1917

Great apples for an excellent cider

Even the best cider maker in the world
can't make a great cider if he just has
“any apples”...

We could say that an apple tree is an apples
tree, and it produces apples, whether for
eating or for cider.

BUT.....

Growing apples for cider is different

- Not the same varieties.
 - Need for special varieties in cider to obtain balanced blends.
- Visual appearance: the cider drinker will not see the fruit!
 - Blemishes / insect damage / scab are OK.
 - Flavor optimization.
- Harvest, handling and storage.
 - Apples harvested at full maturity?

Quality of the cider starts in the orchard

What's the problem with our apples?

(mainly commercial)

- McIntosh, Spartan, Empire...
 - We need to introduce special cider varieties in our orchards to improve our blends.
- Grown primarily for market.
 - Cultural practices and orchard management optimized for appearance, size, handling: not always most appropriate for high quality cider.

Imagine a wine maker who would make his wine with *Flame Seedless* grapes grown for table grape market...

What is a great apple for cider?

- High in sugar.
- High in flavor.
- Perfectly ripe.
- Appropriate variety mix:
 - late varieties (or some mid-season),
 - same number of low vs high acidity,
 - some with high tannin content.

Varieties: cider-apple classification

The cider-apple classification in England doesn't take into account the sugar content; only acids and tannins are considered.

TABLE 5.1:
Cider-apple classification used in England

CLASS	ACIDITY (g/L as malic acid)	TANNINS (g/L as tannic acid)
Sharp	over 4.5	less than 2
Bittersharp	over 4.5	over 2
Bittersweet	less than 4.5	over 2
Sweet	less than 4.5	less than 2

High acid / low tannin

High acid / high tannin

Low acid / high tannin

Low acid / low tannin

The varietal selection

The ideal cider orchard in terms of apple varieties in North-East America would be a mixed orchard:

- Half of trees of traditional varieties, with some russets and crabs: Golden Russet, RubINETTE, Honeygold, Northern Spy, Liberty, Cortland, Virginia crab, Wickson, and even some Mac...
- Half of trees as low acidity cider apples with tannins (bittersweet): Yarlinton Mill, Dabinett, Muscadet de Dieppe, Major, Chisel Jersey, Douce de Charlevoix...

Wild seedlings

- Best cider-appropriate apples for our climate and soil still undiscovered.
- Huge number of seedling trees in the wild.
- Assume 1 out of 10 is good for cider, 1 out of 100 is great... this leaves an incredible number of cider-appropriate apples out there waiting to be discovered by adventurous cider makers.
- Build a genuine North American cider-apple pomona and tradition.

Cultural practices

Cortland apples, commercial vs unmaintained



Cider-bush orchard

Steve Wood's Poverty Lane in NH

A photograph of a man standing in a lush green orchard. The man is wearing a light blue short-sleeved shirt, khaki pants, and a dark cap. He is looking towards the right. A large, light-colored dog is sitting in the grass in the foreground, looking towards the man. The orchard is filled with large, leafy trees that have small, reddish-brown apples hanging from their branches. The ground is covered in tall green grass. The background shows more trees and a clear blue sky.

Cider apples of best quality
obtained from relatively
larger trees in medium or low
density orchards.

2

BLENDING

A well-done cider is a subtle blend of different varieties, adapted to their terroir, each bringing a touch of acidity or bitterness, its richness in sugar and its perfume.

François Moinet

Le Cidre ; Produire et vendre, 2009

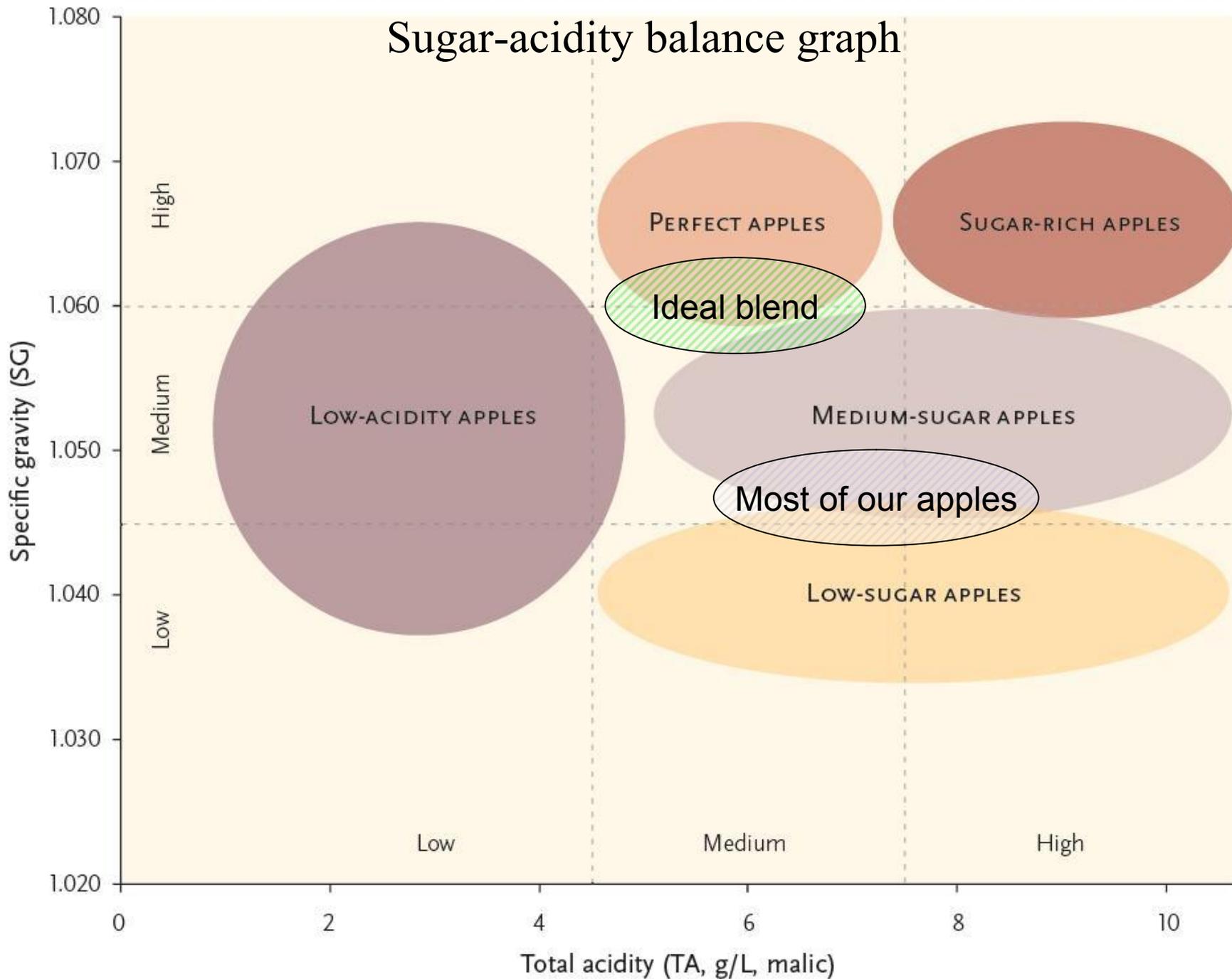
Moment for blending

- Apples before pressing, or juices before fermentation.
 - Important to insure safe pH (< 3,8)
- As it goes.
 - When making one large batch with apples of different ripening season.
- After fermentation.
 - Fermentation of varieties separately.
 - Fine adjustments of batch to insure consistency

The ideal blend

- **Sugar** - as high as possible (natural sugar).
Min SG 1.045 (11 Brix).
May be as high as SG 1.065 (16 Brix).
- **Acidity** - normal range of TA
between 4.5 and 7.5 g/L as malic acid.
- **Tannins** - according to style of cider.
Many (most?) North-american cider blends
are too low in tannins and would profit from
use of more tannin-rich apples in blend.

Sugar-acidity balance graph



3

FERMENTATION PROCESS

There are 2 fundamentally different strategies for the control of the fermentation.

We'll have an overview of their influence on the quality of the cider.

Two schools of thought...

- The « *Keep the yeast happy* » approach:
 - Modern, scientific way to control fermentation,
 - Consistent, nice clean flavor, less complexity,
 - Standard for « *New World* » type cider.
- The « *Make the yeast struggle* » approach:
 - Traditional methods to slow down fermentation,
 - Less reliable, but more complex, richer flavors,
 - Used in most European small craft cideries.
 - Easier for hobbyist than for commercial.

Yeast/nutrients strategies

- *Happy yeast:*
 - Cultured yeast inoculation in sterilized must,
 - Nutrient additions for strong complete fermentation,
 - Sweetening of cider often required.
- *Struggling yeast:*
 - Wild or cultured yeast, must generally not sterilized,
 - Keeving and/or racking for reduction of nutrients,
 - Fermentation may be incomplete, leaving natural residual sugars.

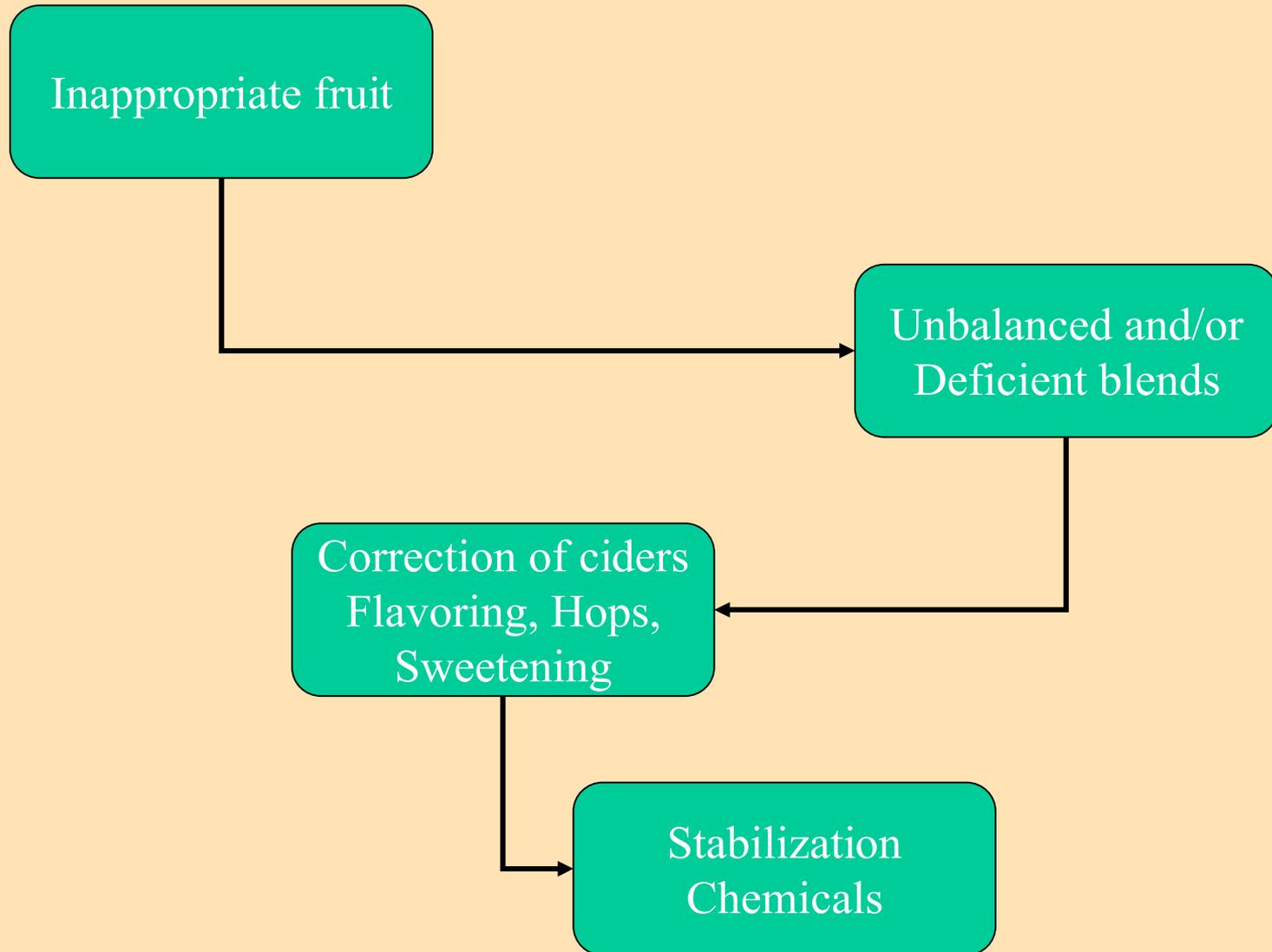
Sulfite

- Sulfite use has been a very important factor in the improvement of cider quality:
 - Sulfite for **must sterilization** is to insure the selected cultured yeast will develop without competition, keeps unwanted microorganisms away.
 - Sulfite for **cider protection** is for insuring keeping quality between moment of bottling until in the drinker's glass.
- Some cider makers (organic/hobbyists) choose not to add sulfite to the must or cider. If taking that route, be aware there are more risks of a spoiled batch.

Sulfite - quality problem

- Excessive dosage of sulfite **at bottling** is an important quality issue. **Always measure free SO₂**.
- **Free** sulfite remaining at moment of drinking can be tasted by many people, and this is extremely unpleasant.
- ~~« **A little extra sulfite won't do any harm** »~~
is plainly wrong, because taste of sulfite in the cider is a much worse problem than slight « *funkiness* ».

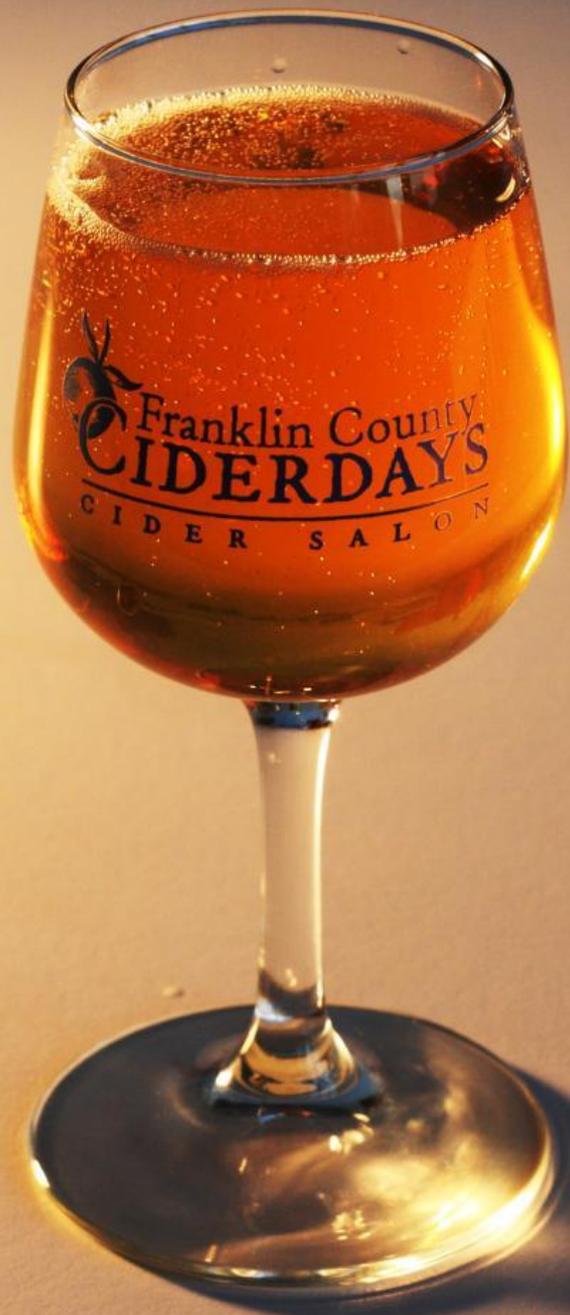
What's the problem with our ciders?



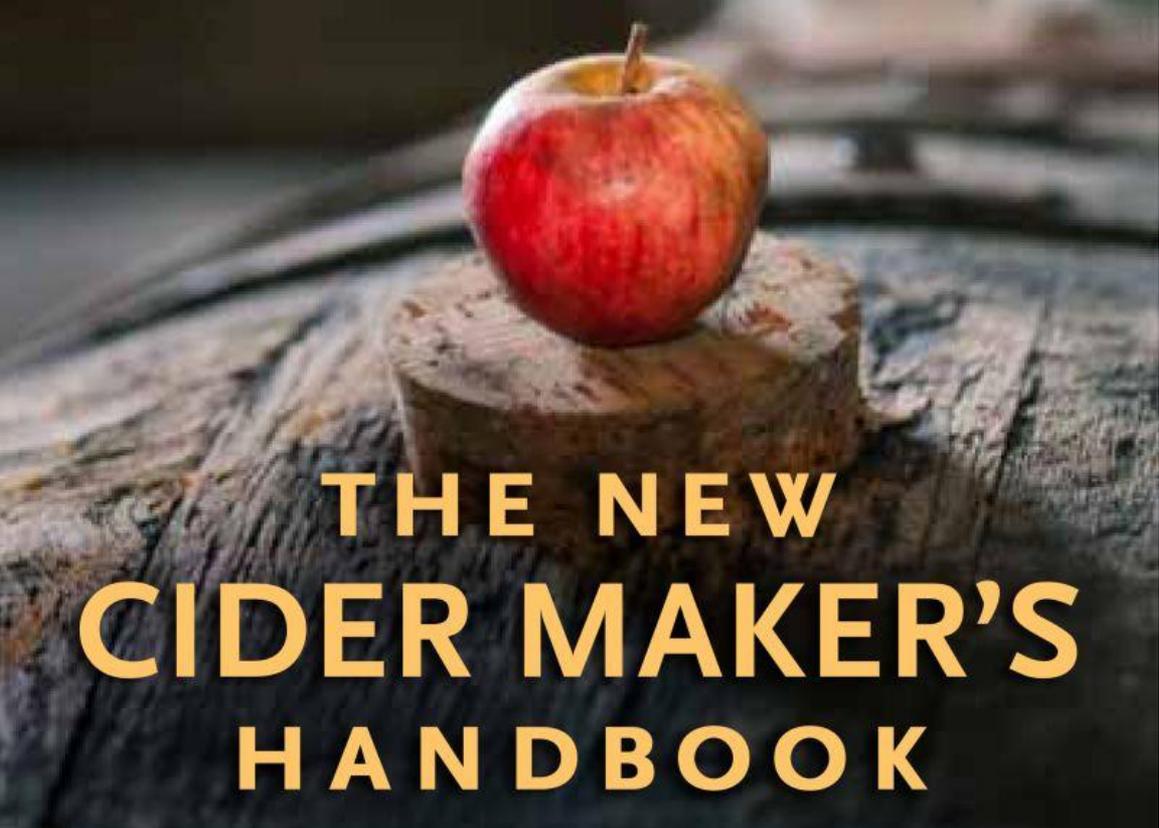
How can we improve the quality of our ciders?

By:

- Going out and tasting ciders in France, England, Spain, also CiderDays in Mass,
- Planting trees of true cider apple varieties,
- Managing cider apple orchards for flavor optimization,
- Experimenting with different fermentation control strategies,
- Avoiding overdosing of sulfite,
- Keeping a critical look at our cider.



Franklin County
CIDER DAYS
CIDER SALON



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||| *A Comprehensive Guide for Craft Producers* |||



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