

Growing Apples for Craft Ciders

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**Growing Rare and Heirloom Apples
For Cider and Local Fresh Markets
Black Diamond Farm
Trumansburg, NY**



Good Times for Niche Market Growers and Cideries

- **Great interest in local and alternative products**
- **Agrotourism: Increasing farm retail sales**
- **Farm wineries and cideries increasing rapidly**
- **Increase in CSAs and Farmers Markets**
- **Food security concerns and energy costs favor locals**
- **Global supermarket system generates consumer desire for something that's really “different”**
- **Heirloom apples & ciders fit this market nicely!**

Black Diamond Farm Story

- **Small (64 acres, 8 acres of fruit), family owned**
- **Initially we grew only scab-resistant apples...a tough sell!**
- **First antique/heirloom apple plantings in 1995**
- **European Bittersweet cider variety plantings in 1996**
- **Jonagold, Sansa, Gingergold, HoneyCrisp in 1998**
- **Ithaca Farmers Market since 1998, GreenStar Cooperative Market since 2000, CSA since 2002**
- **Market fruit to NY City, Boston, Philadelphia and other cities through a local food-hub distributor: Regional Access**
- **Grow 120 apple, plum, peach, and cherry varieties, no more than 200 trees of any cultivar, high density systems**

Optimizing Fruit Quality

- Everything field packed directly into bushel boxes, so fruit is only handled only once, no piece-rate for pickers...
- Everything is spot-picked...several times per variety
- Only ripe fruit goes to market, the culls for cider come back from market “graded” by our customers
- Short storage and fast turnover times, except fruit for hard cider which is “sweated” (after-ripened)
- No ground-applied N fertilizers after the 2nd leaf
- Irrigate, prune, and thin aggressively for size
- Flavor and texture are more important than appearance

Niche Market Strategy

- Each apple variety is limited in time and quantity
- Sell out most varieties before your customers get bored!
- Three price categories for apples: “Rare & Antique,” “Maincrop,” “Lunchbox” or Utility
- Database of our regular customer’s fruit and variety preferences...let them know when favorites are picked
- Precut slices and tastings of all apple varieties at market
- Customers can pack mixed bags at market, within each price category
- Club varieties—Snapdragon and Rubyfrost, retail only

Our Price Board at the Ithaca Farmers Market

www.incredapple.com



Heirloom Display at Ithaca Farmers Market

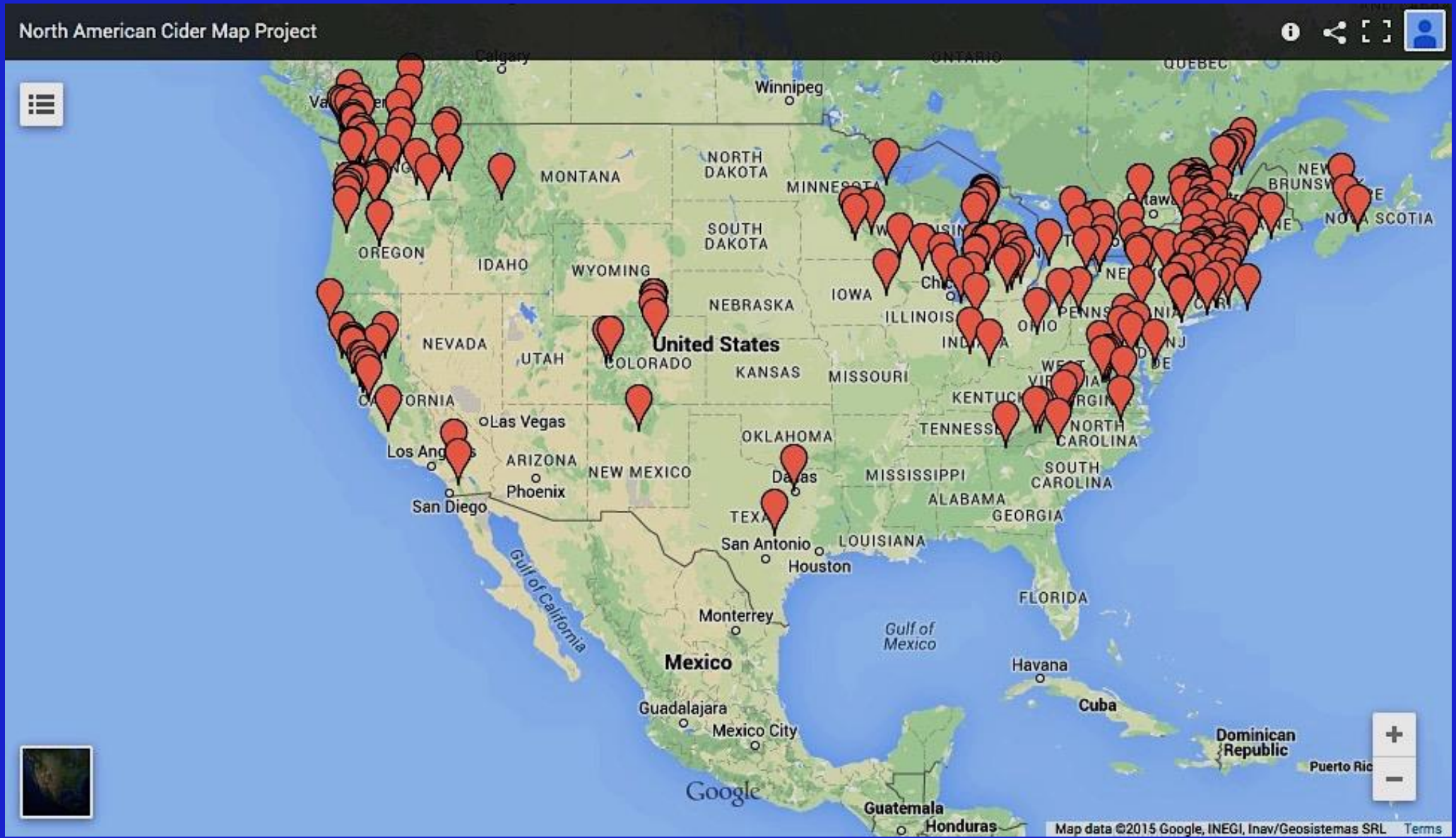


New England Cider Mill ~ 1800



Commercial Cideries in N-America, 2015

(www.OLDTIMECIDER.com/north-american-cider-map)

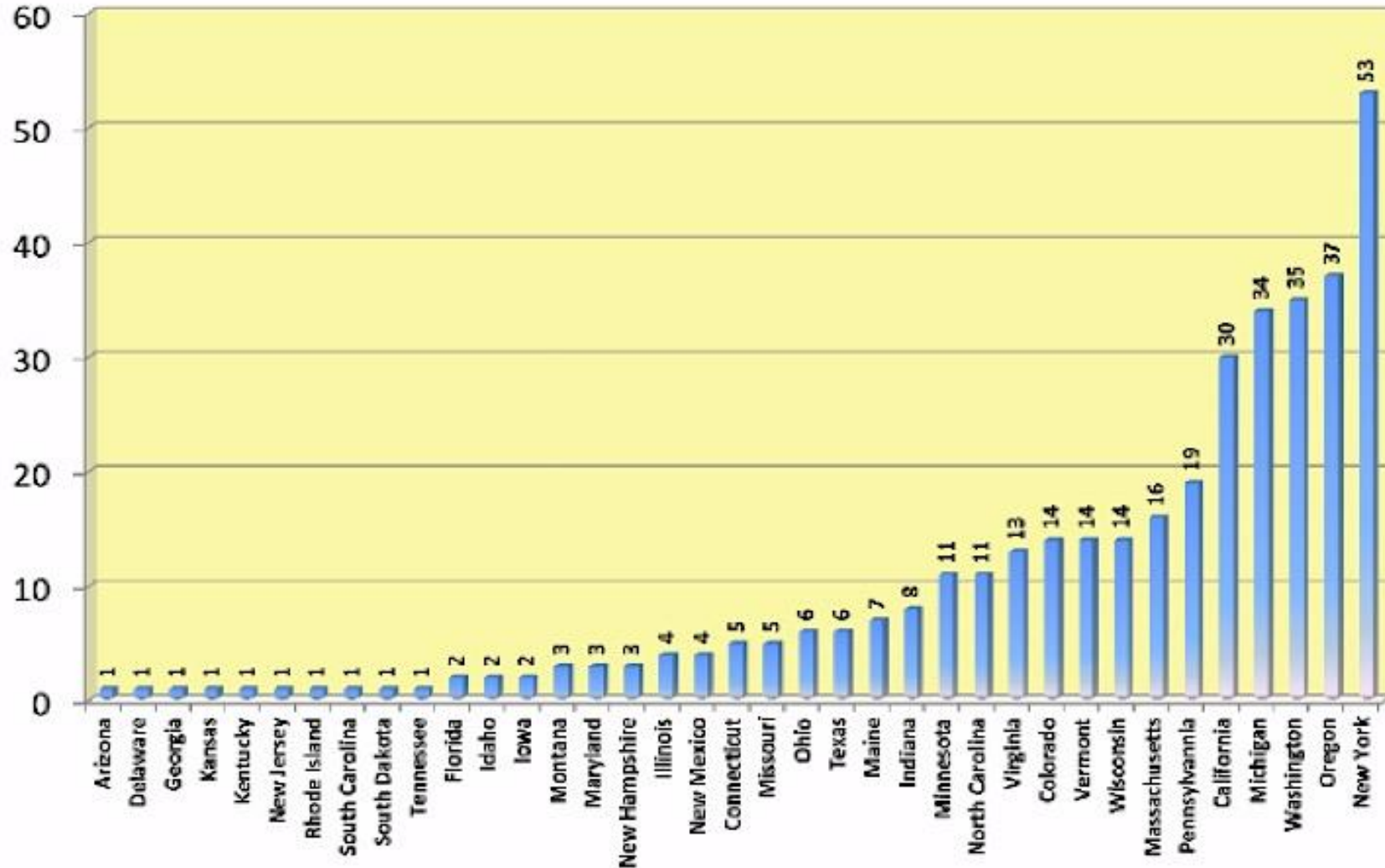


Commercial Cideries by State in US, 2014

Chart 2
December 2014

USA Current Cider Producers by-State

© Cyder Market LLC, 2014



English (Long Ashton) Cider Apple Classification

- **SWEETS:** Tannins < 0.2% Total Acidity < 0.45%
- **SHARPS:** Tannins < 0.2% TA > 0.45%
- **BITTERSWEETS:** Tannins > 0.2% TA < 0.45%
- **BITTERSARPS:** Tannins > 0.2% TA > 0.45%

(Mainstream dessert apples are all Sweets or Sharps...)

Apples for Craft Ciders

- **US Cider consumption doubling every two years**
- **Bittersharps & bittersweets for hard cider at \$20 to 40 per box, including some drops...**
- **Aromatic sharps for sweet and hard cider blends**
- **Dual purpose apples for both dessert & cider**
- **Golden and Roxbury Russets, Newtown Pippin, Gravenstein, Northern Spy, Liberty, GoldRush, etc**
- **Sweet cider blends featuring heirloom apples on the label, sold at premium price (\$5) per half gallon**

Craft vs. Industrial Cider Varieties

- Most ciders are blends of **Sweets, Sharps,** and **Bittersweets**
- Only a few single “varietal” ciders, made from the rare **Bittersharps** such as Kingston Black or Porter’s Perfection
- 800 cider varieties in France, differ in Normandy & Brittany
- 600 in northern Spain, local to each province & region
- 80 in England—many UK varieties originated in France
- Artisanal or “Craft” ciders made from fresh cider (by definition) and usually priced and marketed like wines
- “Industrial” ciders usually priced like beers, made from juice concentrate, added tannins, sugars, flavorants

Growing for Craft vs. Industrial Cideries

- Industrial cider-makers can source juice concentrate on the global markets, from China, Eastern Europe, etc
- Even high-tannin juice concentrate can be obtained from Europe, but at a much higher price than regular AJC
- Apples cost more than barley and wheat, so the profit margin is slim for ciders sold at beer prices, in six-pack units or kegs
- Most consumers' first experience with ciders is an industrial cider, usually sweet and artificially flavored
- Craft (and dry) ciders likely to be an evolved preference as people become more knowledgeable about cider

Dual-purpose apples for fresh markets and cider making

- Scab-resistant sharps like GoldRush, Liberty, Bramley's Seedling, Crimson Crisp provide pH adjustment for cider makers using the high tannin varieties, and can be produced at low cost to provide “base” ciders in blends
- Synergism between dessert and cider apple usage
- Many heirloom apples are good for both purposes
- Apples with extensive water-core or sorbitol provide non-fermentable residual sweetness in ciders—Tompkins King, Pumpkin Sweet, Cox Orange Pippin, Red Delicious, Fuji



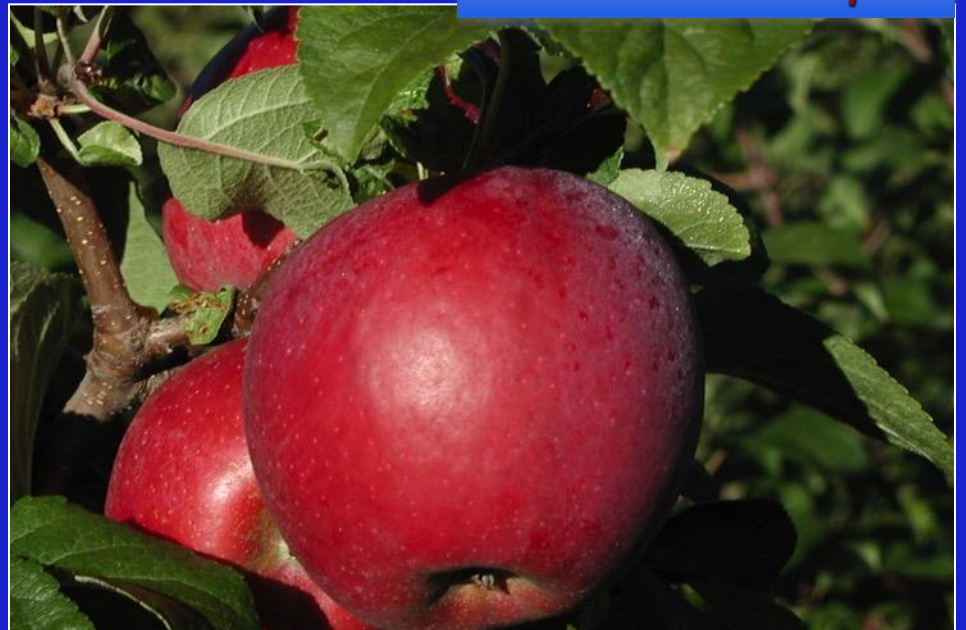
Sansa



Crimson Crisp



GoldRush



Liberty



Northfield Beauty



Chestnut Crab



St. Edmund's Pippin



Holstein Cox



Egremont Russet



Cox Orange Pippin



Karmijn de Sonnaville



Pink Pearl



Bramley's Seedling



Margil (Reinette Musquee)



Esopus Spitzenburg



Zabergau Reinette



Orleans Reinette



Blue Pearmain



Hudson's Golden Gem



Tompkins King



Keepsake



Roxbury Russet



Ashmead's Kernal



Calville Blanc



Golden Russet



Albemarle (Newtown) Pippin



GoldRush



Black Oxford

Single purpose cider varieties: traditional high-tannin apples from Europe

- These are different beasts, but they are still apples!
- Small fruit, set in tight clusters, hard to thin and biennial
- Uneven ripening within pairs or clusters, lots of push-offs
- Heavy premature drop of unripe fruit makes after-ripening essential to obtain good quality juice for fermentation
- Very late bloom on some varieties, makes fire blight and chemical thinning much more difficult to manage
- Heat stress and sun-burn on many (not all) Bittersweets
- Vigorous sprawling growth habits, lots of blind wood
- Viruses in available budwood (avoid sensitive rootstocks)

Some good things about growing High-Tannin Varieties for Hard Cider

- If you know how to grow other apples, you can do this!
- Demand is great, and supply is limited, so cider-makers are usually willing to pay top \$\$ for these varieties
- Few concerns about blemishes or fruit finish for cider apples so:
 - Can spray copper (e.g. Cuevatm) during bloom and after petal fall
 - Can back off somewhat on fungicides and insecticides
 - Few problems with minimum fruit sizes or box counts
 - Can use drops for hard cider if your state regulations permit
- OK to let fruit get over-ripe—it may even be desirable!

Storage handling and after-ripening High-Tannin Varieties for Hard Cider

- Optimal ripeness for hard cider fruit is sweaty & greasy!
- Many high-tannin apples press easily, even when over-ripe
- Early-ripening Bittersweets break down quickly and should be stored cold and pressed within a few weeks of harvest
- Late-ripening Bittersweets usually hold in good condition at 50°F for 1 to 3 months, so they can be fully ripened in storage
- Can use fermentation or HoneyCrisp rooms for after-ripening
- Drops breakdown more quickly and they should be held in different bins in to avoid cross-contamination

When to harvest High-Tannin Varieties

- Few Bittersweets or Bittersharps will ripen completely on tree
- Preharvest drop often begins several weeks before maturity
- Growers in Europe and New England have pasture orchards, grass covers beneath trees so drops can ripen on the grass
- In my experience, leaving dropped apples on the orchard floor results in substantial losses due to wildlife feeding, foot and tractor traffic, decay of cuts, bruises, slug & ant infestations...
- We clean-pick each variety at the onset of heavy drop ~ 20%
- Separate drops from tree-picked fruit, get bins into the 50°F room where they can ripen at leisure without pest deprecations

English Bittersweets



Coat Jersey

← Brown Snout



<—Hereford Redstreak

Early ripening, soft tannins
annual & productive, heavy
preharvest drop, short
storage potential

Kingston Black —>

Late ripening, good
tannins and acids, biennial
and not very productive.
Over-rated!





<—Porter's Perfection

Late ripening, good soft tannins, vigorous, annual & productive, scab tolerant, few preharvest drops, good acidity, cold hardy!

Fox(Faux)whelp—>

Almost no crop, rots on tree and then drops, excessive blind wood. Forget this one!



BITTERSHARPS

**Porter's Perfection
and Kingston Black
can make balanced hard
ciders without blending**



Chisel Jersey cluster ripe on the tree and “sweating”
in mid October (note heat stress...)



Dwarf or Standard Rootstocks? Crop on 5th leaf Tremlett's Bitter/M.9



Dabinet crop on 5-year old M.9 trees (note preharvest drops...)



Fillbarrel yield on MM.111 Rootstock: We waited 12 years for this crop!



18/04/2009

Recommended High-Tannin Varieties:

My shortlist—Somerset and Hereford Redstreak, Tremletts (Geneva) Bitter, Harry Masters Jersey, Dabinett, Brown Snout, Chisel Jersey, Fillbarrel, Yarlington Mill, Porters Perfection, Bedan des Parties, Binet Rouge...



Most of the 35+ apple species, and wild *Malus domestica* seedlings, are tart, tannic and inedible—but they can make good blends for cider:

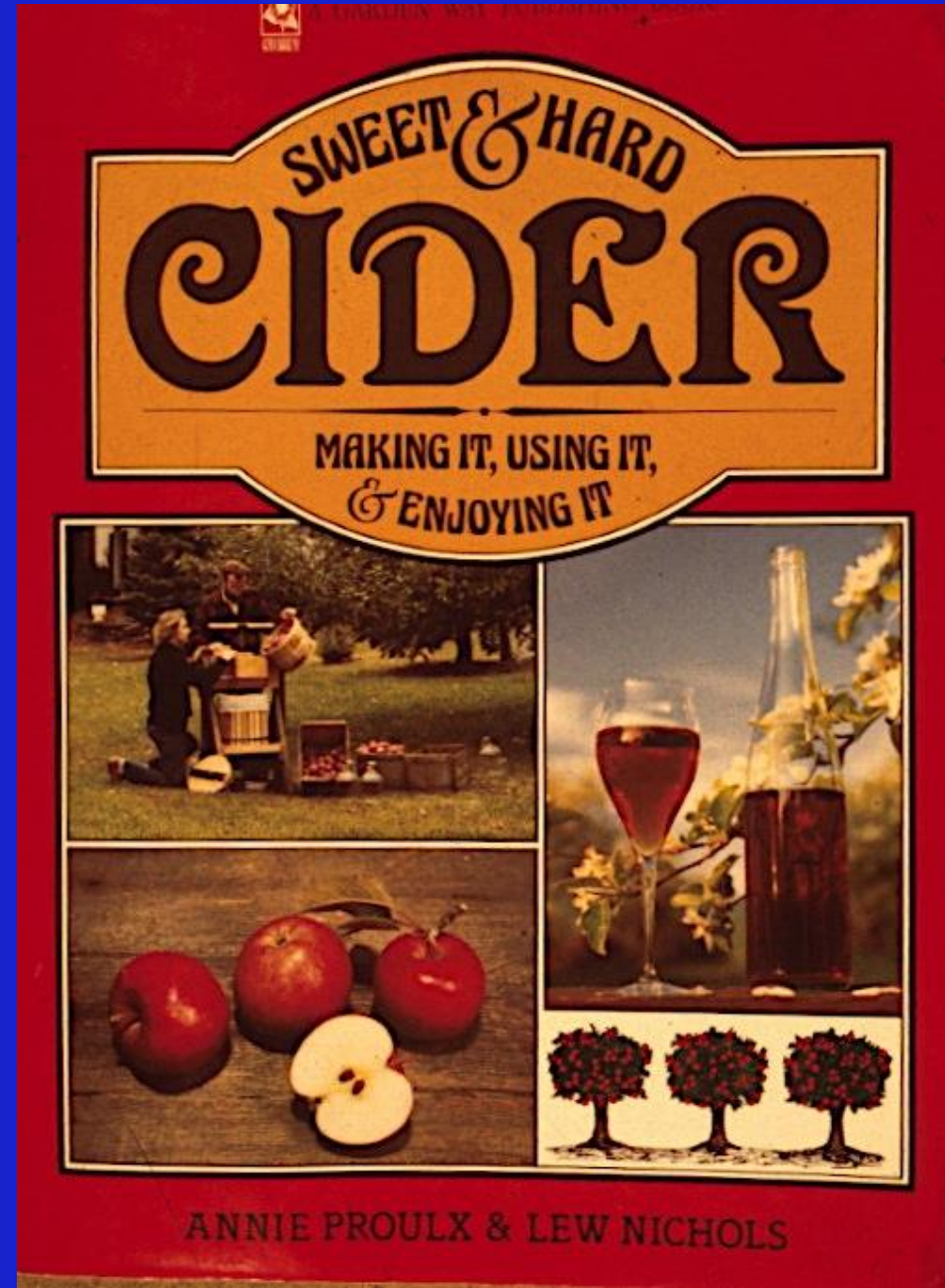
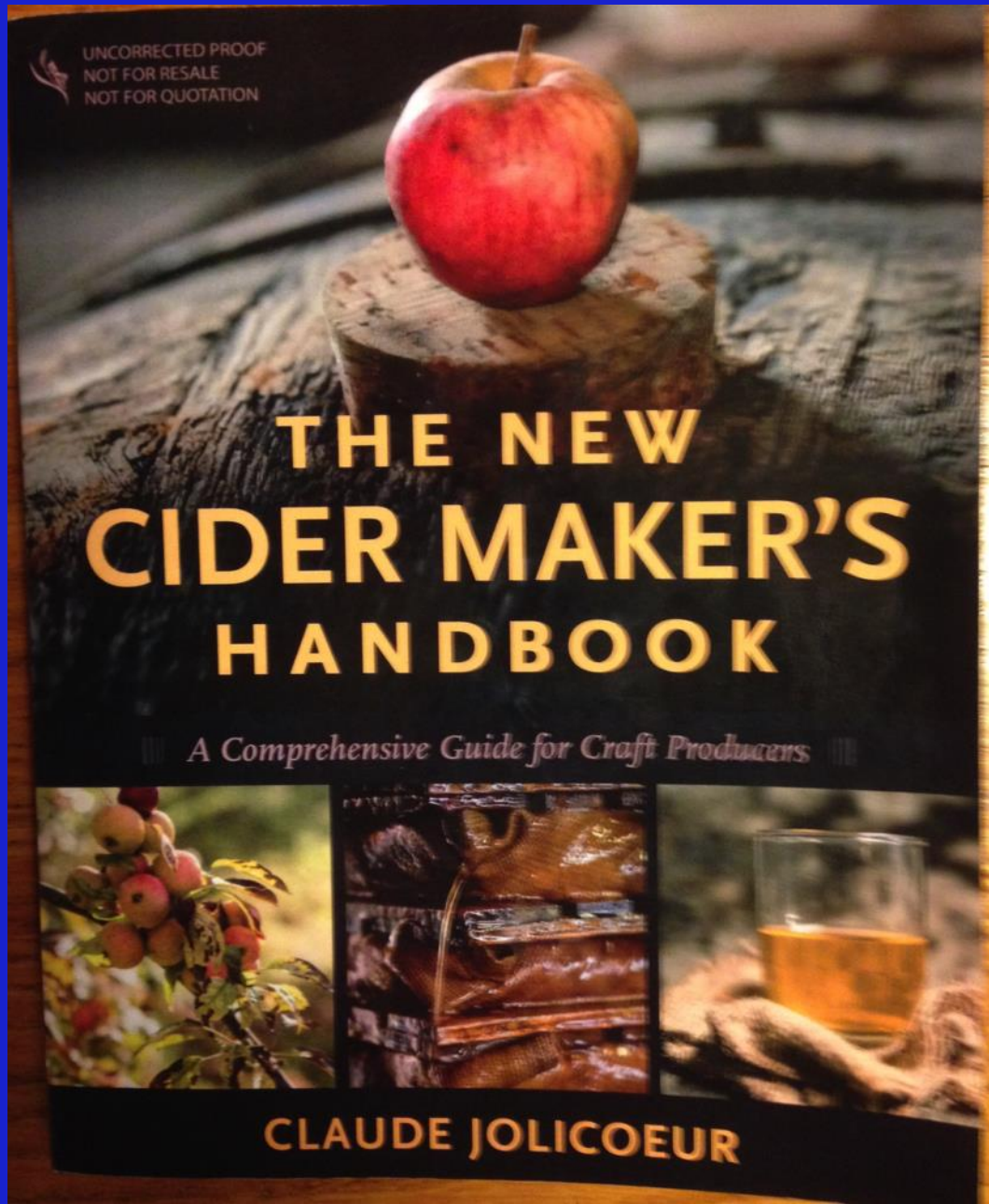
Good use for fruit from feral and pollenizer trees



**Plant some new (or old) varieties every year,
and get rid of whatever does not sell!
Life's too short to grow fruit that people don't want!**



Recommended Reading





More to read online:

**NEW YORK FRUIT QUARTERLY
VOLUME 16 . NUMBER 4 . WINTER 2008**

Another NYFQrtrly article due later this year...