



Prairie Gardens' Comprehensive Cider Apple

Compendium of Hardy Apples for the Prairies

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Great cider consists of a balance between acidity, tannins, sugar, alcohol, and aroma. Since very few single varieties of apple contain all of these elements in a nice balance, cider is usually made by blending multiple varieties of apples. Some of the most difficult apples to find are those that lend themselves to the production of hard cider, according to Chris Collins, proprietor of North Shore Cider Company, "When you combine cider apples – some are very bitter, some are very sharp – they make a great juice that you can ferment and give it a lot of complexity. They just aren't apples that you sit and eat, or put in a dessert." Planting of apple trees appropriate for hard cider production dwindled during Prohibition, and never regained its footing. Until now.

Bittersweet - Bittersweet apples are high in tannins and low in malic acid. Tannins add bitterness and/or astringency to a cider blend. Tannins are also thought of as giving "structure" and complexity to the flavour and mouthfeel of cider.

Sharp - Sharp apples are high in malic acid, low in tannins. They add acidity to a cider blend.

Bittersharp - Bittersharp apples have significant amounts of both tannins and malic acid. Some bittersharp apples, such as the famous Kingston Black, are known to make an excellent single varietal, or "vintage" cider.

Sweet/Aromatic - Apples with high sugar are used in cider blends to increase the alcohol content. Apples with interesting flavour/aroma are used to add complexity and appeal to cider blends. Ideally apples in this category have both high sugar and excellent flavour/aroma.

ENGLISH CIDER APPLE CLASSIFICATION

| Flavour | Acidity (g/L malic acid) | Tannins (g/L 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 |

Prairie hardy apples have potential as hard cider apples based on field evaluations. The chart below is data available from the U of Saskatchewan Juice Evaluation Report, based on fruit grown at the U of SK orchards in Saskatoon Saskatchewan during 2011, 2012 and 2013. The juice yield was calculated as weights of the juice from the ground apples (as a press cake) were recorded and the mass of juice per mass of fruit (w/w) calculated.

| Cultivar | Classification | Juice Yield % w/w | %Tannins L-P test | MCP Tannins | PH | Titrateable Acidity | Soluable Solids | Sugar Acid Ratio |
|--|-------------------------|----------------------|----------------------|----------------|------|------------------------|--------------------|------------------------|
| Autumn Delight | Sweet Aromatic | 78.9 | 1.15 | 28.0 | 3.31 | 0.47 | 12.8 | 27.2 |
| Minn447 | Sweet Aromatic | 78.4 | 0.65 | 12.1 | 3.27 | 0.63 | 13.5 | 21.4 |
| Kerr | Bittersharp | 75.4 | 1.39 | 9.5 | 3.21 | 0.95 | 16.5 | 17.4 |
| Norkent | Sweet Aromatic | 66.0 | 1.13 | 37.2 | 3.77 | 0.45 | 14.1 | 31.3 |
| Prairie Sensation | Sweet Aromatic | 65.5 | 0.81 | 26.1 | 3.46 | 0.66 | 13.2 | 20.0 |
| Red Sparkle | Sweet Aromatic | 65.0 | 1.31 | 45.6 | 3.50 | 0.37 | 12.8 | 34.6 |
| Misty Rose | Sweet Aromatic | 62.0 | 0.84 | 37.1 | 3.38 | 0.63 | 14.6 | 23.2 |
| Goodland | Sweet Aromatic | 53.8 | 0.95 | 28.7 | 3.40 | 0.62 | 14.1 | 22.7 |
| BC Cider Apple averages (extrapolated for comparison) | Average apple for cider | 55.6 | 1.3 | 52.5 | 3.4 | 0.4 | 14.1 | 37.3 |

JUICE QUALITY

The Table above shows the results of the tannin, acid, sugar and juice yield measurements. These results are useful for processors making and blending hard cider or juice. Juice yield was highly variable ranging from 54 to 80% extraction rates. As a general observation, crisp firm apples tend to yield more juice than softer ones.

‘Kerr’ crab apple is often used for cider blend to add character to a cider. Crab apples require more labour to harvest. Of the higher juice yielding varieties Minn447 may be the best for juice.

Of the traditional cultivars grown, very likely ‘Norkent’, ‘Red Sparkle’, and Goodland’ are the most widely grown. Unfortunately these popular varieties were on the low side for juice yield.

‘Autumn Delight’ is relatively low in tannins and acidity and would be a good candidate for blending. Although tannins can be artificially added to ciders, higher quality hard ciders and wine are usually made if tannins come from the fruit being fermented.

CULTIVARS AND SEEDLINGS SUITABLE FOR FRESH CIDER

The characteristics of cultivars suitable for fresh cider are different than for hard cider. In fermented beverages, sugar is lost during the process of fermentation, while in fresh cider the sugar remains. The ratio of sugar to acid in fresh cider will determine how sweet or sour a particular juice is perceived. The

ideal sugar / acid ratio is generally considered to be between 15 to 20 in Europe but in the USA the acceptable range goes up to 30.

This ratio can be achieved by blending the juices of sour and sweet apples or by adding acids to artificially modify the acidity. Data generated in this project has identified promising varieties suitable for fresh cider as well as varieties with higher tannin content (and other traits) that would be best for hard cider. This information is immediately useful for growers and processors wishing to establish orchards in the near future. Also identified are breeding selections that have high sugar content and low acidity that would be best for blending with other fruits.

A large, russet apple with excellent flavour, Hudson's Golden Gem is especially great for cider, though can also be used for fresh-eating and baking. This super-crisp apple will blow you away with notes of pear and vanilla in its flavour. Dates back to 1931, Oregon.

Morden Russet, as its name suggests, is another excellent russet apple. Almost forgotten, this apple originates from Manitoba (1935) and is extremely flavourful. Absolutely fantastic for cider, this apple also makes for good fresh eating.

Growing Notes: All apples appreciate the sun (8-10 hours of direct sunlight), and well drained soil. Soil Preference: Sandy loam, loam, clay loam. Prefers average to moist conditions, avoid planting anywhere that floods for more than two weeks in the spring. Generally, they are quite adaptable to different soil conditions.

Complete List of Cider Apple Varieties available from Prairie Gardens.

Antonovka

Canadian Hardiness Zone: 1 | Cider Classification: Sharp

Why It's Special: Antonovka is a legendary Russian apple variety that can do many interesting things. Starting with being a tasty apple, incredibly hardy, and will be useful in contributing some acid to blends

History: Discovered near Kursk, Russia; first recorded in 1826. This is the classic Russian apple, a couple of centuries old, yet still revered as much as ever by Russians at home and all over the world. The Antonovka apple tree is to Eastern Europe what Cox Orange Pippin is to England the most sought after apple in the region. When fully ripe it is great for fresh eating. Baking with Antonovka apples are superior since it retains high acidity. This high acidity (tart) compliments the intense sweetness. When not fully ripe it can be sour, it has to be yellow, not green for fresh eating. Antonovka is a tart fresh eating apple when it's first ripe, a more complex eating apple given a bit of time in storage

Growing Notes: Most exciting for some of us, the root stock of this variety - when grown from seed - is a go-to for winter-hardy rootstock to use as grafting material for full-sized apple trees with an amazingly deep taproot. It is, therefore, both remarkably stable and drought-tolerant. Huge bonus for growers in a region like ours, where growing season irrigation water is precious.

The Antonovka apple is also a very attractive fruit as it hangs delicately from the tree reminiscent of luminescent yellow lanterns. This also happens to grow true from seed, which means a planted seed from an Antonovka apple will produce a tree of that same variety. The Antonovka apple tree is also disease resistant.

- Years to Bear: 2-4 years
- Recommended Spacing: 12-16 ft.
- Mature Size: 12-16 ft.

Fruit:

- Refreshing, juicy, perfumed, tart, crisp, pure white flesh, which mellows over time in storage.
- A fairly large, bright greenish-yellow apple, often with some russet.
- Harvest time: Early season (usually in early September).
- Quality for fresh eating: Good. Tart.
- Storage: Yes – improves with age for up to 2 months.
- Quality for cooking: Good. Breaks down when cooked.
- Quality for cider: While is not particularly known for use in cider, but could be useful in contributing some acid to blends.

Cider Notes:

- | | |
|------------------------|--------|
| • Classification | Sharp |
| • Juice Yield (mL/lbs) | 163.16 |
| • Brix | 8.2 |
| • pH | 2.9 |
| • TA (g/L) | 4.8 |
| • Tannic Acid (g/L) | 0.17 |

Autumn Delight

Canadian Hardiness Zone: 2 | Cider Classification: Sweet Aromatic

Why It's Special: The flavour is sweet and good and the fruit is excellent for fresh eating and cut into salads. The cut fruit has good browning resistance and the core is of medium size and open. The texture is slightly spongy and exceptionally crisp and juicy. The flesh colour is creamy white often with red vascular tissue. The cooked flesh has medium firmness and the colour is yellow with pinkish flesh near the skin. The apple is very late, ripening around September 26th and the fruit hangs well on the tree. The fruit has excellent storability.

History: Recent release from the U of Saskatchewan Prairie Apple breeding program.

Growing Notes:

- The tree has excellent winter hardiness and is semi-dwarf in vigour.
- The tree is mildew resistant but is susceptible to fire blight.
- The fruit size is small to medium, 6 to 7 cms in diameter and the shape is slightly conical. The fruit stem is long. The fruit skin develops a waxy coating in storage. The colour is 80% washed with dark wine red over light greenish yellow.

Cider Notes:

- | | |
|---------------------|---------|
| • Juice Yield % w/w | 78.9 |
| • Brix (Sugar): | 11-14.5 |

- pH: 3.2-3.45
- Titratable Acidity: 0.53-0.57% Malic acid

Belle de Boskoop Apple

Canadian Hardiness Zone 3b | Cider Classification: Sharp

Why It's Special: Here's one for those of us who love some sharpness in an apple. With its sharp sour taste and large, greenish-yellow fruit, this apple is still popular at farmer's markets throughout Europe for both fresh eating and cooking (keeps its shape). The most impressive thing about 'Belle de Boskoop' apples is their sheer size: each fruit can weigh up to 200g. They are round in shape but can sometimes be irregularly angular. The basic colour of the apples is yellow, only the sunlit side turns reddish. 'Boskoop' apples are ready to harvest from mid-October until November. It is important not to pick the apples too early, as this significantly shortens their shelf life.

This is how to identify ripe 'Boskoop' apples:

- Skin changes colour
- Easy to pick
- Stem comes off easily when turned
- The apple cores are brown

Use and storage notes: Those who like particularly sour apples can enjoy 'Boskoop' apples straight after harvesting. Similar to Honeycrisp - as a typical winter apple, the fruit must first be stored for some time before it develops its full flavour. Ripening takes from December to April. It is best to store the apples boxed in single layers in a dark place at 3 to 4°C with high humidity. In these conditions, the apples can be stored until April. Due to their high acidity, 'Boskoop' apples are excellent for baking and preserving. It has value as a sharp in hard cider blends as well.

History: This apple was discovered as a chance seedling in 1856 in Boskoop, Netherlands where it has remained popular ever since.

Growing notes:

- Soil Preference: The tree is happiest in chalky and heavy soils, and does not like drought – make sure you water it regularly.
- Spur-bearing, vigorous and a good cropper but slow to start bearing fruit.
- Resistant to canker, cedar rust, and brown rot, very resistant to scab.
- Plant in a protected location, out of the wind.
- Pollination: Triploid, requires two pollinators of different non-triploid apple varieties that bloom around the same time. Flowering group 3 best pollinating partners: Antonovka, Chestnut, Dolgo, Duchess of Oldenberg, Hewes Virginia, Sweet Sixteen.
- Flowering Time: Early
- Ripens: Mid October
- Storage: Keeps until April when stored at 2C
- Recommended Use: Fresh eating, cooking, cider

Cider Properties:*

- Class: Sharp
- Sugar: Very high, SG 1.070
- Acidity: Very high, TA 12.8 g/L
- Tannins: Low
- Juice Yield: High
- Recommendations: Mix with low-acidity varieties

*Information based on Claude Jolicouer's The New Cidermaker's Handbook

Bulmer's Norman

Canadian Hardiness Zone: 3 | Cider Classification: Bittersweet

Why It's Special: Bulmer's Norman is specifically a cider variety. Bulmer's Norman is a hard-to-find yellow bittersweet cider apple that was considered important about a century ago. Fruit is medium to large with greenish-yellow skin and produces an astringent sweet juice which ferments rapidly into fine bittersweet cider. If you're into serious cider, you'll want to include Bulmer's Norman in your orchard as well as in your cider blend. Especially since the trees are proving in our orchard to be reasonably vigorous and trouble-free.

History: When this apple was first brought to England — more than 100 years ago — it was so little known that the variety literally had no name. That changed rather quickly as its popularity rose. It soon caught on as a bittersweet cider variety and before long was being planted pretty much everywhere cider was made. Those heady days are long gone and today Bulmer's Norman is used mainly for the sturdiness of its trunk — more highly-prized varieties are grafted onto it. First discovered in Normandy, France in the early 1900's.

Growing Notes:

- This medium bittersweet cider apple produces a cider with hard, bitter tannins.
- The Fruit: a large, conical, greenish-yellow apple.
- Produces good crops, but tends to crop every other year. The branches are brittle and frequently break under load. Make sure you select the "L" branches with right angle connections to the trunk, and prune out the "V" branches which will split out.
- Harvest time: mid-season (usually in mid-September).
- Fresh eating — No! You'd need peculiar taste buds to eat this one fresh.
- Quality for cooking — Nope.
- Storage: Nope. 2 weeks max. Don't leave it sitting around — it will ferment in the pails you picked it in. There's little reason to store a cider apple. Just ferment it, baby!

Cider Notes:

- Brix: 11.3
- Tannins: 2.7
- Acidity: 2.4

Recommendations: Its rich tannin content produces a full-bodied cider with balanced mouthfeel. Medium astringency and bitterness work together to produce a classic English flavor profile. With very low acidity, it works well when blended with higher-acid, aromatic varieties.

Chestnut Crabapple

Canadian Hardiness Zone: 3 | Cider Classification: Sharp

Why It's Special: Chestnut crab apple makes wonderful cider and brandy. The apples are small, but sweet! Delicious! These small ribbed apples have an orange red blush over yellow, with light green lenticels. "Striking" I would say. They are the perfect bite-size dessert apple for kid's lunches in October. Not just an ordinary crab apple, the Chestnut stands out as one of the best tasting of the crab apples. It's a crisp, crunchy and sweet apple that averages around 5cm in size and keeps up to a 3 months in cold storage. Excellent to eat fresh off the tree and also good for juicing for cider or for baking.

Fruit: Chestnut's crisp coarse-grained yellow flesh is juicy and appealingly sweet. There's just a little offsetting tartness. The rich flavor, with a little pear, honey and orange is even throughout. These flavors harmonize very well. These firm little apples are not ready to pick until late September or the first week of October in Alberta. They are better with a light frost, but won't hold up past the third week of October. The Chestnut crabapple is an excellent natural source of pectin, so it is no surprise that it makes a tasty apple jelly.

Growing Notes: The Chestnut crab puts on quite the show every May with huge clouds of white blooms. These pollen-rich flowers are useful to cross-pollinate other apple varieties.

History: A favourite to use in cider making. It bears fair crops every year, and is hardy, developed at the University of Minnesota in 1946. DNA fingerprinting indicates that one of its parents is Wealthy.

Interesting to Know: Dead branches and even small limbs you prune from Chestnut crabapple are valuable firewood. Apple wood is an aromatic firewood that burns hot and slow. It lends a sweet flavor to smoked meats. Because it hardens as it ages, it is easiest to cut apple wood when it is still green.

Growing Notes:

- Height at Maturity: 6 meters (20 feet)
- Spread: 4 meters (16 feet)
- Soil Preference: Well drained
- Light Exposure: Full sun
- Pollination: Self-sterile (Plant with another apple tree for best pollination)

Cider Notes:

- Classification Sharp
- Juice Yield (mL/lbs) 148
- Brix 14.0 13.9
- pH 3.4 3.3
- TA (g/L) 6.2 4.7

- Tannic Acid (g/L) 0.06 0.05

Cortland Nova Red

Canadian Hardiness Zone: 3 | Cider Classification: Bittersharp

Why It's Special: Cortland Nova Red one of the very few self-fruitful apples, which will not require a pollinator. Bittersharp apples - sharps (high in acid) and bitters (high in tannin) are more difficult to come by. Cortland is a bittersharp apple with crisp, juicy flesh. It is great for applesauce or drying as the flesh is slow to brown. The fruit keeps until Christmas in the cooler, although the crispness and flavour does fade over time. Cortland fruit work well in fruit salads because the snow white apples are resistant to browning. Gardeners appreciate Cortland apple trees for their beautiful pink blooms and pure white blossoms. Cortland Nova Red apple trees are listed as self-fruitful – meaning that they will set fruit without a pollinator, but another tree in close proximity improves production. This variety crops well annually and makes a good pollinator for others. Thin fruit in the spring to prevent breakage – this is a heavy cropper.

History: Cortland apples were first bred in 1898 by Cornell University in New York and introduced in 1915. Since then, they have become one of the top fifteen apples in the US and Canada, although the majority are still grown relatively close to the university where they originated.

Growing Notes:

- Tip-bearing, moderately vigorous and precocious with an upright growth pattern, it is very hardy and has heavy crops.
- Very susceptible to canker and susceptible to mildew and fireblight but resistant to cedar rust.
- Plant in a protected location, out of the wind.
- Pollination: Partially self-pollinating, it will produce some fruit on its own but does better planted with a pollinator of a different apple variety that blooms around the same time.
- Flowering Time: Midspring – Flowering group 3 – Antonovka, Chestnut, Dolgo
- Ripens: Early October
- Storage: Keeps until May when stored in cold storage
- Recommended Use: Fresh eating, cooking, cider

Cider Properties:*

- Class: Bittersharp
- Sugar: Medium, SG 1.059
- Acidity: Medium, TA 7.3 g/L
- Tannins: Low
- Juice Yield: Medium

Recommendations: Blends well with varieties high in sugar, low in acid, and low in tannins.

*Information based on Claude Jolicouer's The New Cidermaker's Handbook

Dolgo Crab Apple Trees

Canadian Hardiness Zone: 2 | Cider Classification: Sharp

Why It's Special: Dolgo is one of the very few self-fruitful crabapples. A heavy cropper, easy to grow, and is an excellent pollinator. Dolgo Crab is a Siberian crab apple imported to South Dakota in the late 1800's. One of the best all-purpose crab apples. Produces elongate, oval shaped 1 1/2 inch crimson fruit. It is a very tart little apple, but it can be eaten fresh if you like pucker power. It is ideal for jelly and makes a rich, ruby red jelly. Bullet proof hardy in the Edmonton region.

Produces a sharp aromatic juice.

The fruit ripens in early September, and self fruitful.

Growing Notes:

- Resistant to cedar apple rust, mildew, and fireblight.
- In fall the shiny, deep-green foliage turns a stunning, bright yellow that is certain to brighten your landscape.
- The fruit is so bright in color and abundant that the tree looks like a decorated Christmas tree when viewed from a distance. Often mistaken as a plum due to the small fruit size. It will not tolerate a hard frost, so pick them when ripe in September. Once frozen, the fruit drops from the trees with big soft splats, making it messy in the landscape. The Cedar Wax Wings love it, so a good tree for naturalizing for wild birds.

Cider Notes:

- Malic Acid – 25 G/L
- Brix – 16-19
- PH – 2.8

Dwarf Tolman Sweet Apple

Canadian Hardiness Zone:3 | Cider Classification: Sweet Aromatic

Why It's Special: Dwarf Tolman Sweet is a compact tree and excellent all-purpose apple. The fruit are medium-sized with yellow skin, and have a distinctly sweet, dry flesh. They are nice for fresh eating but can also be used in baking, drying, and pickling. Their unusually low acid content helps to reduce acidity in both sweet and hard cider.

History: Little is known about the origin of this heritage apple, but Tolman Sweet has been highly valued since its discovery. It is uncertain whether it came from Massachusetts or New York in the 18th or 19th century but it was first recorded in 1822. This hardy tree was used as a source of rootstock at one time.

Growing Notes:

- Moderately vigorous and very hardy, precocious, spreading growth pattern, tends to bear fruit every other year, spur bearing. Susceptible to fireblight.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time

- Flowering Time: Middle
- Ripens: Late October
- Storage: Keeps a few months when stored in cold storage.
- Recommended Use: Fresh eating, cooking, cider

Cider Notes:*

- Class: Sweet
- Sugar: High, SG 1.061
- Acidity: Low, TA 1.4 g/L
- Tannins: Low, 0.1 g/L
- Juice Yield: Low, 90 mL/lb
- Taste: Sweet

Recommendations: Good in blends where it adds sweetness and balances out more acidic varieties

*Information based on Michigan State University's "Great Lakes Cider Apple Collection"

Hansen's Red Flesh (crab-apple)

Canadian Hardiness Zone: 3 | Cider Classification: Bittersharp

Why It's Special: I am excited that this all-red apple is used for "coloring cider". Hansen's Red Flesh is a quality crab-apple -- and one with appealingly red flesh, and pink juice.

Super Cool History : Neils Hansen was a plant breeder from South Dakota at the turn of the century. He travelled to Russia through Siberia, eventually arriving in Vierney, present day Almaty, the capital city Kazakhstan at the time. There he saw something remarkable. A civil servant and amateur botanist called Vladislav E. Niedzwiecki showed him an apple with striking red-flesh, with red flowers, leaves, and red inner bark. This was *Malus niedzwetzkyana*, which grows wild in the Tien Shan mountains, and is now on the IUCN Red List as endangered.

Hansen seems to have become obsessed with this fruit. At considerable risk to life and limb, he followed it through bazaars and markets, even crossing the Chinese border in an attempt to trace it to its source. He brought back this pretty crab-apple, which comes with deep colouring straight through and provides good quality in jellies and cider. He also came back with 'Dolgo', a red crab-apple still widely grown today, and a plant he would use extensively in his own breeding. Bred at Brookings, South Dakota, USA; 1928 introduction.

Fruit: Fairly dry with firm, coarse flesh. Astringent and acidic. The crab apples are tall little apples, which are deep, dark red-skinned. The flesh is also red.

- Harvest time: Mid-late season (usually in early October).
- Quality for fresh eating: Too sour and astringent for most people.
- Quality for cooking: Excellent in jelly.
- Quality for cider: Very good, especially when you value that pink tinge of colour.
- Storage: Nope! Use right after harvest.

Growing Notes:

- A beautiful tree with copper-colored leaves and vivid red flowers. The elongated, deep red, flavorful crab apples are up to 2 inches long, and ripen in October. The pink flesh makes a clear, delicious red jelly. A great landscape tree, beautiful in all seasons!
- Grow Height: 9' (Semi Dwarf) G41 Semi Dwarf Rootstock; G890 Semi-Dwarf Rootstock
- Ripening Time: October
- Pollination: Needs a Pollinizer

Hewe's (Virginia) Crab Apple Trees

Canadian Hardiness Zone: 3 or possibly even zone 2. | Cider Classification: Bittersharp

Why It's Special: Hewe's Crab is one of the earliest American cider apples circa 1700 - 100 year old trees were discovered in Virginia in 1817. Also commonly known as Virginia Crab. It is absolutely one of the best cider crab apples available today. It produces a clear, dry, full-bodied and biscuity cider reminiscent of champagne, which is excellent by itself or used in a blend. Hewes Crab is at the center of Virginia's cider revival, and is used by several producers, including Albemarle CiderWorks, Foggy Ridge Cider, and Castle Hill Cider. It produces a delicious cinnamon-flavored cider that is both sugary and pungent. Jefferson planted his entire north orchard exclusively with this variety and once wrote that crushing the juicy Hewe's Crab for cider was like "squeezing a wet sponge."

Growing Notes:

- This is also a good pollinator of other apple trees, since it produces lots of blossom over quite a long period.
- Fruit is very small (1 ½ inches diameter) with dark green skin mostly covered with dull, purplish red and numerous large white dots.
- Flesh is firm, crisp, astringent and quite acid in flavor. Ripens September to October and is a good keeper.
- Quite susceptible to cedar apple rust. Don't plant near cedar.

Cider notes:

- Bittersharp juice. High Acidity; High Sugar; Heavy Cropper;
- Known as a champagne cider apple

Hudson's Golden Gem

Canadian Hardiness Zone: 3 | Cider Classification: Sweet - High Sugar - Aromatic

Why It's Special: Hudson's Golden Gem is one of the best-flavored russet apples. The fruits are quite large, with a pale green skin which is usually extensively covered with a light russet. This is a super-crisp apple with strong pear notes, a faint nutty quality, and a hint of vanilla. It is a great fresh-eating, baking and cider apple. Like many russets, it has an interesting sweet juice quality which is very useful as a base for cider blending.

History: Hudson Golden Gem is an unknown seedling discovered in a fencerow in Tangent, Oregon in 1931. These conical apples are medium to medium-large and obviously ribbed. The russetting, like that of other varieties, is a treat to look at: rusty, toasty brown and not entirely opaque, creating subtly shifting colors wonderfully variegated. Green-brown lenticels, some with light specks in their centers,

provide further visual interest. Some samples have a bit of coppery blush. Frost sensitivity causes cracking around the top which usually heals, but affects the appearance of the fruit.

Growing notes: The tree is vigorous, productive, and an annual bearer. Quite resistant to apple scab, powdery mildew and rather tolerant to fire blight. It will remain small regardless of rootstock. Hudson Golden Gem ripens in late October, with fruit flavour improving in storage in Alberta. The fruit hangs late into the winter, ideal for wild bird feedstock planting. Stores well. Hardy to zone 3.

Cider Notes:

Rating for Cider: Very good. With its classic and distinctive russet sweetness, it's a popular choice for heritage-style cider blends.

Minnesota 447

Canadian Hardiness Zone: 3 | Cider Classification: Sweet Aromatic

Why It's Special: Biting into a Minnesota 447 is almost like biting into a piece of sugarcane. Savoring its juice tastes almost like molasses melting in your mouth. Frostbite, or Minnesota 447 is a perfectly crisp, late-season apple. It is one of our absolute favourites, flavoured with hints of sugar cane and litchi and molasses. One of the most exceptional apples you will ever taste! A very unique apple that deserves a place in cold climate growing

Fruit: Great for fresh eating and it's an excellent keeper which easily stores all winter! . A late season ripener usually pushes into late September. Apples are smaller sized, averaging 5 to 6cm in size. The only downside is a tendency to get russetting (cracks around the top of the apple), which can attract wasps and other pests. The cracks also make the apple susceptible to mold during its relatively short storage life.

History: Grandparent of Honeycrisp. Parent to Sweet 16 Apples

Also, a heavy juice producer, which makes it good for cider making and juicing.

Growing Notes:

- Height at Maturity: 5 meters (18 feet)
- Spread: 4 meters (15 feet)
- Pollination: Self-sterile (Needs another apple tree nearby for best pollination)

Misty Rose Apple

Canadian Hardiness Zone: 2 | Cider Classification: Sweet Aromatic

Why It's Special: Misty Rose apples super hardy, with firm medium size fruit, crisp, somewhat tart, and juicy with a pleasant aromatic component. Apples are best used for fresh eating.

Fruit: Medium in size, with 90 percent red color over light green. It is sweet and good fresh. Texture is described as firm, crisp, and juicy, and flesh color is white, with a pink tinge – hence it's name: Misty Rose. Skin is red wash over green in colour with white flesh. Size of fruit averages 7 to 8 cm in diameter and ripens in early September, storing up to 2 months in cold storage. Released by the University of Saskatchewan.

Harvest time: It ripens about September 4.

Storage; The fruit stores well.

Growing Notes:

- Very hardy apple, grows well in colder regions
- The tree is vigorous, winter hardy, and tends to be open, leggy,- and tip bearing. Fruit thinning can be done quickly and with very little effort.
- This apple is in the top three of the informal taste tests we have done over the past 3 years. Slightly sweeter than most apples we grow.
- Height at Maturity: 5 meters (18 feet)
- Spread: 4 meters (15 feet)
- Pollination: Self-sterile (Needs another apple tree nearby for best pollination)

Cider Notes:

- Juice Yield: 62.0 5w/w
- pH:3.3-3.45
- Titratable Acidity: 0.62-0.63% Malic acid
- Sugar: 13.5-16.0 brix

Morden Russet

Canadian Hardiness Zone: 3 | Cider Classification: Sweet Aromatic

Why It's Special: Morden Russet is a rare almost forgotten apple out of Manitoba. The Morden Russet is a small round –fits into the palm of your hand size. It is a greenish yellow coloured apple that is russeted. Fruit has firm, dry amber yellow flesh that is very flavourful with a unique taste. Good to eat fresh, excellent dessert apple, and superb juice. Good to use for in cider. Apples average 6 to 7 cm in diameter. Ripens later in October and keeps until spring (March) for several months in cold storage.

History: Originally released by Morden Research Station in 1935.

- Height at Maturity: 5 meters (18 feet)
- Spread: 4 meters (15 feet)
- Soil Preference: Well drained
- Light: Full sun
- Pollination: Self-sterile (Needs another apple tree nearby for best pollination)
- Taste: Unique flavour

Recommendations: Makes a good base for blends, adds acidity and astringency

Norkent

Canadian Hardiness Zone 2 | Cider Classification: Sweet Aromatic

Why It's Special: The Norkent apple tree combines extreme hardiness with great taste. It produces a delightfully sweet and crunchy apple with a mild, non-acidic flavour. This apple also performs well in storage. The fruit is a medium-sized yellow apple, striped or streaked with red. In taste, it somewhat

resembles an apple-pear, and its flavour is also sometimes compared to the Golden Delicious variety: sweet, almost caramelized, with little to no acidity. It measures 14.8 Brix. It is also excellent in texture: firm, quite juicy and very crunchy. The skin is moderately thick and the fruit will sometimes russet. Norkent is at its best when eaten fresh, but it will also make good juice. The fruit generally ripens in early to mid-September, though the precise harvest date might vary somewhat from year to year. It should not be picked too early as it must mature on the tree to develop its flavours to their full extent. It stores well, see below. It should be fruit pruned, as will revert to being a biennial bearer, and produce so prolifically on fruit bearing years, that there is nothing the following year. It is an excellent u-pick variety.

Fruit Storage: Norkent keeps well for approximately 5 months in cold storage (held at around 2°C). Our notes on its storage capabilities are as follows: In October and November, the apple is still perfect in terms of flavour, texture and appearance; the flesh is white, firm and crunchy; flavourful and sweet, perfect for eating fresh. The longest the apple can be kept is until February, as stored in good conditions, there is still no sign of rot or mold and the texture and appearance are still excellent. The core of the apple starts to show some signs of browning. However, the flavour at this point has significantly diminished, and starts to take on some flavours from the environment. At this stage it is preferable to use the apple for cooking in pies or apple sauce.

Growing Notes: The Norkent apple tree is one of the hardiest trees we have found for such a high-quality apple. It has proven itself up to zone 2. The tree is very sturdy, with a strong, rounded framework. It will provide greater yields if grown with a pollinator. Norkent also bears at a young age, so you will generally eat fruit one year earlier than with other apple trees! The tree is resistant to fire blight and the literature notes that it is susceptible to cankers (though we have not noted this problem ourselves.)

History: The original Norkent apple tree has quite a unique story. It appears to be a seedling from tens of thousands sent across the Prairies from a program developed by Agriculture Canada in the 1960's. The Norkent apple was born from a cross between the Haralson and Rescue varieties. It was originally known as PF51 before it was re-named Norkent. It was later moved from the University of Alberta as a whip and transferred to a residential backyard in Edmonton as the university lacked adequate space to let it grow to full size. Malus sp. 'Norkent' (Malus sp. Harlason x Malus sp. Rescue)

Characteristics of the tree

- Height at maturity -7 meters (23 feet)
- Spacing - 9 meters (30 feet)
- Flowering time: mid-May
- Harvest time: Mid-September (After September Ruby and before Goodland)
- Average fruit weight - 95g. Average diameter of fruit; 7cm (2.5 inches)
- Years to fruit bear - 4 to 5
- Pollination – Self sterile - better production with a pollinator

Northern Spy

Canadian Hardiness Zone: 3 | Cider Classification: American Heirloom – with moderate tartness.

Why It's Special: Northern Spy is a classic eastern North American variety that's revered as a pie apple by folks in that region, but it is also a varietal cider apple. Apples are juicy with a mildly sweet honeyed flavour, although they do tend to bruise easily due to their thin skin. To make up for that, they are known for being excellent pie apples.

History: From the late 17th through early 19th centuries, eastern North America was likely the greatest producer of new apple varieties the world has ever known. Settlers planted huge orchards using apple seeds, and the best of the resulting trees – including Northern Spy – were North America's gifts to the world. It was a huge – if inefficient – contribution to apple diversity. Raised as a seedling in East Bloomfield, New York, USA, circa 1800.

Fruit:

- Crisp, cream-coloured flesh has a rich, aromatic and powerful apple flavour with plenty of fruitiness and lots of sweetness and acidity.
- Appearance: There's a dark red flush and bright red stripes over the pale yellow background of this medium to large-sized apple.
- Fruit will bruise easily. During rainy weather, the fruit may crack, and because of the delicate skin, it is easily damaged during harvest.
- Harvest time: Very late season (usually in late October).
- Quality for fresh eating: Good.
- Quality for cooking: Excellent.
- Storage: Good (3 months or more when kept refrigerated).

Growing Notes:

- Partially tip-bearing, moderately vigorous with an upright growth pattern, slow to start bearing fruit and tends to have good crops every other year.
- Slightly susceptible to cedar rust, susceptible to scab and bitter pit, and very susceptible to mildew, fireblight, and quince rust, but resistant to woolly aphid.
- The hardy tree has an upright free-growing habit with long curved branches and dense foliage.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time
- Flowering Time: Northern Spy blooms late and escapes frost, but it is notorious for being slow to begin bearing. Northern Spy ripens in late September and early October and is a Late bloomer (Group 5) Honeycrisp is a pollination partner.
- As a rule, the Northern Spy is late to bear fruit, taking up to a decade to produce its first harvest, and even then is late to bloom, often flowering two weeks later than most of other apple trees in the orchard.
- Ripens: Late October
- Storage: Keeps until May when stored in cold storage
- Recommended Use: Fresh eating, cooking, baking

Cider Notes: High acidity. Low to moderate bitterness. Low to moderate tannins. Moderate funk. No sourness.

Northern Spy was used extensively in cider back in the 19th century and is being used again today, especially in ice cider - including in some single variety ciders. Calhoun* describes the flesh of the Northern Spy as being “tender, juicy, crisp, aromatic, spicy subacid,”

* Northern Spy Guinevere’s Pearls, a Eden Ciders Cellar Series release featured in their December ciderbox. Tasting notes: Medium bodied with a frothy mouthfeel. Moderate tartness. High acidity. Low to moderate bitterness. Low to moderate tannins. Moderate funk. No sourness. Notes of apple pomace, yeast, must, stone fruit, honey, and brown sugar. Long warming finish. Moderate to high apple flavor. Low sessionability. Moderate to high complexity. Moderate flavor intensity.

Prairie Sensation

Canadian Hardiness Zone 2a | Cider Classification: Sweet Aromatic

Why It’s Special: The trees are crazy hardy with a large fruit size. It’s an excellent tasting apple with a fine balance of sweet and tart. There is also a pleasant aromatic flavour with this apple. Colour: Red over green in colour with a white crisp, firm and juicy texture. Great to eat fresh and also good for pies. The apples average up to 7 to 9cm in size and ripen in middle of September. Stores well up to 4 months. There are reports in Alaska that Prairie Sensation was one of only 3 apples that showed true hardiness. The other two by the way were Prairie Sun and September Ruby. Prairie Sensation was released by the University of Saskatchewan.

Prairie Sensation fruit is large, between 7.3 and 8.6 cms in diameter (average of 10 fruit is 7.63 cms or 3 inches) and roundish to slightly oblate in shape. The cross section is round and the longitudinal section is unequal. The base colour of the skin is two shades of light green, which is 50% covered by two shades of red in wash and stripes. The skin is smooth and medium thick. The flesh colour is white and the texture is fine, firm, tender (breaking), crisp and juicy. The core size is medium to small and closed and has a median position in the fruit. The flavour is a mild subacid with an intense aromatic component

Growing Notes:

- There is scant bloom, and the fruit set as singles or pairs and requires little thinning.
- The tree is slightly leggy with an open crown but sets up a moderate number of short spurs. It is not a tip-barer. It is hardy and continued to yield crops after the hard winters between 1996 and 1998.

Storage Notes:

Prairie Sensation has continued to score well in informal taste tests since 1993. Groups of growers, students, Horticulture Societies, faculty and staff consistently rated it as one of the best of U of Saskatchewan selections. In 2001 and 2002 it was submitted to sensory evaluation panels (10 to 14 people) made up of faculty, staff and students at the University of Saskatchewan. The panellists scored the fruit using a 1 to 8 Hedonic scale (1=worst, ‘disgusting’ to 8=best, ‘just right for me’) on appearance, texture (including firmness, crispness and juiciness) and flavour (including sweet/sour balance, astringency and aromatic flavours).

The fruit was evaluated after 53 days in air storage at 0° Celsius. Prairie Sensation scored well compared to standard cultivars. (See figures 1 through 4) The same sensory data for each year is presented in two charts, the second showing more details than the first.

The data clearly shows that Prairie Sensation is not inferior to the best standard cultivars that can be grown here with some reliability. This is important because these standards have shown various amounts of winter injury in past years and Prairie Sensation has been fully hardy. The fruit also stores well, consistently receiving good sensory evaluation scores in January and February.

Cider Notes:

- Juice: 65.5 % w/w
- pH: 3.3-3.5
- Titratable Acidity: 0.56-0.75% Malic Acid
- Sugar: 12.7-13.7 Brix

Red Sparkle

Canadian Hardiness Zone 2b | Cider Classification: Sweet Aromatic

Why It's Special: Red Sparkle is a high quality multi-purpose apple that can handle the worst of prairie winters. McIntosh has been widely used as a classic old Canadian variety in breeding programs. Presumably, breeders have been looking to build on the Mac's pure white flesh, sweetness and hardiness. Red Sparkle is an offspring of this famous apple – and it is a candidate for the distinction of being better than its parents. Perhaps best known for the fact that it is hardy enough to withstand a -35C prairie winter, folks who grow it tend to argue that this is much more than a cold-resistant apple tree; it's also a large high-quality apple with nice texture as well as good flavour.

History: Its origins - Bred in Morden, Manitoba, Canada; a 1990 release.

Growing notes:

- Fruit Quality: Crisp and juicy, with a fruity/nutty flavour.
- Appearance: A medium-sized green-skinned apple blushed with red.
- Harvest time: Early-mid season (usually in early September).
- Quality for fresh eating: Good.
- Quality for cooking: Good.
- Storage: Just a few weeks when kept refrigerated.
- Tree tends to sprawl, so shortening branches each year is recommended.

Cider Notes:

Not particularly known for use in hard cider. Best in fresh cider.

Redfield Apple Trees

Canadian Hardiness Zone: 3 | Cider Classification: Bittersharp

Good for single varietal cider / Red fleshed fruit

Why It's Special: Redfield is a red fleshed apple, that makes an amazing red juice. It's one of the few apples that can make a credible, complex single varietal cider with a wonderful balance of acids and tannins. It's key feature is its distinctive deep red flesh, a color that communicates itself to the final

cider. The Redfield has especially high amount of pectin, which is excellent for jelly making. Makes a unique pie as well, but it is most commonly used in production of a beautiful, bittersweet, dry, blush cider.

History: Redfield is a unusual cross of Wolf River x *Malus pumila* “Niedzwetzkyana”, produced by the New York State Agricultural Experiment Station in Geneva, NY, 1938. dates to 1939 and is a cross between a Wisconsin heirloom called Wolf River and a tree from Kyrgyzstan—the most likely ancestor of the domestic apple—called Niedzwetzkyana.

The tree is uniquely red as well – wood is red, leaves are bronze, blossoms are large and pink. Resistant to most diseases, easier and more reliable to grow than many red-fleshed apples.

Growing notes:

- Heirloom: Yes
- Harvest time: Late Mid October
- Bloom Period: Early
- Pollination Requirement: Requires different variety with same bloom period
- Storage: A few weeks
- Disease Resistance: Good
- Years to Bear: 2-4 years
- Recommended Spacing: 12-16 ft.
- Mature Size: 12-16 ft.
- Water Requirements: 12-15 gallons per week May through Sept.

Cider notes: Distinctive deep red flesh, a color that communicates itself to the final cider. Very tart, aromatic and astringent, not recommended for fresh eating. It produces a haunting red juice when pressed producing bitter sweet cider.

Rouville Apple

Canadian Hardiness Zone: 3 | Cider Classification: Bittersweet

Why It's Special: It's hard to find hardy bittersweet apple varieties that are ripe in August! Rouville is a large, tasty all-purpose apple. It is high in sugar and tannin, making it popular with cider makers. This apple tree also stands out in terms of its disease-resistance, being resistant to both scab and fire blight. This lovely Quebec cider apple has a wonderful bitter-sweetness that is great for fresh eating and juicing. It is one of the earliest to ripen in late August, and it keeps remarkably well.

History: Rouville apples were created by R.L. Granger and G.L. Rouselle in 1962 at the Agriculture and Agri-food Canada research centre located in St.-Jean-sur-Richelieu, Quebec. The variety was introduced in 1983.

Fruit: Large apples have pale, greenish-yellow skin mostly covered by red blushes. Inside, the coarse flesh is juicy and a pale cream-colour. The apple is ribbed, making it not completely round. It ranges in size from 2 3/4 to 3 1/4 inches wide (7 to 8 cm.)

Growing Notes:

- Vigorous and precocious, produces reliable crops. Very resistant to scab.
- Requires a pollinator of a different apple variety that blooms around the same time
- Flowering Time: Bloom middle
- Ripens: Late August
- Storage: Keeps until October when stored in cool, humid conditions
- Recommended Use: Fresh eating, cooking, cider

Cider Properties:

- Class: Bittersweet
- Sugar: High, SG >1.060
- Acidity: Low, TA <4.5 g/L
- Tannins: High, >2.5 g/L
- Juice Yield: High

Smokehouse Apple

Canadian Hardiness Zone: 3 | Cider Classification: Sweet Aromatic;

Why It's Special: Smokehouse fruit is exceedingly juicy. Flesh is yellowish, crisp and firm with a pleasing spicy flavor. It is an excellent keeper. Besides its excellent eating qualities, Smokehouse is a fine cooking and baking apple. Lively flavor makes for excellent cider and juice. The apple has greenish-yellow skin covered with shades and stripes of red. Reliable, productive cropper.

History: Smokehouse is a seedling of the ancient American variety, Vandevere. Smokehouse originated in Lampeter Township, PA about 1800's adjacent to William Gibbons' smokehouse.

Growing Notes:

- Reliable and productive.
- Precocious tree produces a regular abundance of apples.
- Late apple - ripens in early October or late September depending on the locale.

Snow Apple

Canadian Hardiness Zone: 3 | Cider Classification: Sweet Aromatic

Why It's Special: Snow, aka Fameuse, apples originated near Lake Champlain in Quebec some time before the 1730s. These apples have a lovely deep red skin with pure white flesh that is said to have a strawberry flavour. These trees are also quite cold hardy and produce heavy crops.

History: The exact origin is unclear but this variety is thought to have originated from a seedling or cutting brought from France. From about 1750-1850, this was one of the most commonly grown apples in Quebec until the orchards were almost wiped out in the latter half of the 19th century by disease and failed to regain their popularity. However, these lovely apples may still be with us in their own way as they are one of the potential parents of McIntosh.

Fruit: Variable sized apple also known as Fameuse. fiery-red solid or striped -tender skin and brilliant, arctic-white flesh, is so juicy and aromatic that, even today, enthusiasts praise its flavor as being superior to other cultivars—then launch into reasons why the apple is, and should be, relegated to antique apple status. Flavour: Subacid, strawberry-perfumed, consistency sweet and aromatic. Originated from plantings by French settlers in Quebec.

Growing Notes:

- Moderately vigorous and very hardy, spur bearing, tends to have heavy crops every other year. Very susceptible to scab but very resistant to mildew and fireblight.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time
- Flowering Time: Early bloomer
- Harvest time: Early October
- Storage: Keeps until December when stored in cool, humid conditions
- Recommended Use: Fresh eating, cooking

Cider Notes:

- Class: Sweet
- Juice Yield (mL/lbs) 154.3
- Brix 9.7
- pH 3.6
- TA (g/L) 1.9
- Tannic Acid (g/L) 0.012844

Cider Description

- Appearance - Light yellow, mostly clear. Attractive.
- Nose - Mead-like aroma. Light and a little fruity.
- Flavor - Soft mouthfeel and a bit thin. Mildly tart with some lingering acidity. Little to no noticeable tannins.
- Overall Impression - A light, refreshing cider. A good cider base with balanced acidity that would blend well with a bittersweet.

Sweet Sixteen

Canadian Hardiness Zone 3 | Cider Classification: Sweet Aromatic

Why It's Special: Sweet Sixteen is a versatile apple that's delicious to eat fresh and distinctively flavoured when baked.

History: Sweet Sixteen was a relatively early entry into the 'modern' disease resistant apple category, although it's this apple's fine eating qualities that have allowed it to stand the test of time since its 1973 introduction. Sure, it was marketed as a hardy, vigorous, early-bearing apple growing on disease resistant trees. But the accolades Sweet Sixteen has received over four decades have less to do with all of that and more to do with its unique flavour, firm, crisp texture and aromatic qualities. Not to mention the fact that it's almost as good a cooking apple as it is a fresh eater. Bred in Minnesota, USA; 1973 introduction.

Fruit:

- Firm, crisp, aromatic, moderately acidic, sweet.
- Excellent fresh eating with a flavor profile of spice, sweet, vanilla and cherry flavours, it is really a must-taste!
- Appearance - Very good. Large-sized, with red skin colouring striped over a green background.
- Harvest time: mid-season (usually in late September).
- Quality for cooking - Very good, with a unique vanilla-like flavour when cooked.
- Storage notes: Not brilliant. (1 to 2 months when kept refrigerated).

Cider Notes: Moderately acidic, Sweet Sixteen lends itself to making a nicely balanced varietal cider

Tolman Sweet Apple

Canadian Hardiness Zone: 3 | Cider Classification: Sweet

Why It's Special: Tolman Sweet is a great sweet yellow apple. The fruit are medium-sized with yellow skin, and have a distinctly sweet, dry flesh. There can be mild blushing and russetting, with a firm juicy flesh. The apples are nice for fresh eating but can also be used in baking, drying, and pickling. Their unusually low acid content helps to reduce acidity in both sweet and hard cider.

History: Little is known about the origin of this heritage apple, but Tolman Sweet has been highly valued since its discovery. It is uncertain whether it came from Massachusetts or New York in the 18th or 19th century but it was first recorded in 1822. This hardy tree was used as a source of rootstock at one time.

- Growth Habits and Disease Resistance: Moderately vigorous and very hardy, precocious, spreading growth pattern, tends to bear fruit every other year, spur bearing. Susceptible to fireblight.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time
- Flowering Time: Middle
- Ripens: Late October
- Storage: Keeps a few months when stored in cold storage.
- Recommended Use: Fresh eating, cooking, cider

Cider Notes:*

- Class: Sweet
- Sugar: High, SG 1.061; Brix:8.9
- pH 4.5 Acidity: Low
- Tannins: Low, 0.14 g/L
- Juice Yield: Low, 90 mL/lb
- TA (g/L) 1.4
- Tannic Acid (g/L) 0.009584

Recommendations: Good in blends where it adds sweetness and balances out more acidic varieties*Information based on Michigan State University's "Great Lakes Cider Apple Collection"

Trailman Crabapple

Canadian Hardiness Zone 1 | Cider Classification:

Why It's Special: Trailman is known as one of the best and hardiest of the Crabapples. We call it orchard candy! These egg shaped, golden yellow fleshed apples are crunchy, juicy with a spicy tart flavour. Skin, which is thin, and does not need to be peeled. is golden overlaid with a reddish brown wash. Excellent for fresh eating and juicing. Local cider makers love to use this apple! Stores for up to 2 months in cold storage and ripens in early September. Bears fruit at an early age.

History: Released from Beaverlodge, Alberta in 1973.

Growing Notes:

- Very hardy apple, known to grow well in growing zone 1 climates
- Height at Maturity: 5 meters (18 feet)
- Spread: 4 meters (15 feet)
- Pollination: Self-sterile (Needs another apple tree nearby for best pollination)

Fruit: First bite is super coarse-grained and juicy, yellow with a great crunch and strong flavors. On wet years, it may hyper saturate and discolor (watercore) around the core. Little nibbles bring a lot of sweetness balanced by some very sharp tart accents that also make for a bit of spiciness in the back of the throat. It is nice to find an apple this bold in this day and age! It's a cliché these days, but the texture of this one might be comparable to Honeycrisp's. It's hard to say due to the size difference. (You just can't chomp these mini apples in the same way.) Trailman finishes with some lingering sweetness that would be cloying in many varieties but that works very well thanks to the balancing tartness. There is a whisper of berries in the finish as well. The flavors come together with integrity.

- Super crisp mini-apple - crab sized, most just a bit over an inch wide.
- The blush is peachy orange over peachy yellow. Look closely for those tiny lenticel dots.
- Shapes vary but are mostly cylindrical with a little ribbing.
- The peel is glossy and waxy. Unbroken, there is no aroma.
- This is one of the best of the super earlies (mid August).

Cider Notes: - The apple is rated fair to good for volume. The juice is golden amber, sub acid, with a pleasant and slightly nutty flavour. There is also a distinct malt note, which cider makers will enjoy.

Wealthy Apple

Canadian Hardiness Zone: 3 | Cider Classification: Sweet

Why It's Special: An excellent early apple! Wealthy makes splendid applesauce, but is also good for fresh eating and pressing for cider. The tree is scab resistant and cold hardy, makes an excellent pollinator for other apples, and is well-suited for organic orchards.

History: Wealthy apples were created by horticulturalist Peter Gideon after spending years trying to breed an apple variety that could survive Minnesota's harsh winters. With the very last of his money, he purchased seeds and scions in one last attempt and was able to produce the Wealthy apple which he

named after his wife, Wealthy Gideon. He gave scions away freely and Wealthy became one of the top five apples grown in the U.S.A.

Fruit: At peak ripeness the flavor of Wealthy is sweeter than tart - you'll get notes of pear and lemon, pleasant but not overly complex. The texture is soft and easy to eat without being mushy. It almost foams in your mouth. A bite of this apple feels crisp but not snappy; you won't wake a sleeping baby when you take a bite. Rowan Jacobson in his book Apples of Uncommon Character does not recommend Wealthy for pies, but we have used them with success. The slices get soft but not saucy. At room temperature the slices retain their shape and bite. Wealthy makes a tart, creamy sauce. Eat a dried Wealthy Apple slice and you might think you were biting into a peach ring.

Growing Notes:

- Precocious, but has weak vigour, very hardy, spreading growth pattern, tends to bear fruit every other year but has good crops when it does, semi-spur bearing. Susceptible to mildew and fireblight but resistant to scab and cedar rust.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time
- Flowering Time: Middle
- Ripens: Early September
- Storage: Keeps until December when stored in cool, humid conditions
- Recommended Use: Fresh eating, cooking, applesauce, cider

Cider Notes:

- | | |
|------------------------|----------|
| • Classification | Sweet |
| • Juice Yield (mL/lbs) | 164.7 |
| • Brix | 7.4 |
| • pH | 2.9 |
| • TA (g/L) | 3.9 |
| • Tannic Acid (g/L) | 0.094345 |

Recommendations: Wealthy is a good acid source for fermented hard cider.

Whitney (crab-apple)

Canadian Hardiness Zone 3 | Cider Classification: Bittersweet

Why It's Special: Whitney is a heritage crab-apple, originating from the USA, that works very well in cider, preserves and even as a fresh-eating crab. The humble crab-apple is enjoying something of a resurgence in popularity these days, in part because of how well many crabs perform in cider. Whitney is one of those, although this one has qualities that qualify it for especially high status, right up there with Wickson.

Growing Notes: It's a great pollinator, easy to grow and highly productive with a few additional bonuses: the fruit is larger than most crabs (so easier to pick and work with), it's sweet enough to eat fresh as well as use in jellies and other preserves.

History: Discovered in Franklin Grove, Illinois, USA, 1869

Fruit:

- Sweet and juicy, firm-fleshed crab-apples.
- Golf ball-sized crab-apples with red over a yellow background.
- Harvest time: Early-season (usually in August).
- Quality for fresh eating: Good.
- Quality for cooking: Good.
- Storage: Good (1 to 2 months when kept refrigerated).

Cider Notes: This is a quality crab apple for cider makers. It produces a particularly good juice for cider with a good level of sugar plus a pleasantly mild astringency, which adds to the mouthfeel and body of the cider. Good.

Wolf River Apple

Canadian Hardiness Zone: 3 | Cider Classification: Sweet

Why It's Special: First and foremost, Wolf River is legendary for the huge size of its fruit. The apples can weigh a pound or more and there are stories of pies being made from a single apple. The fruit, green with red blush and stripes, has a sweet and tart flavour that is good for cooking and it holds its shape well when cooked. The tree itself is hardy and relatively disease resistant as well.

History: Wolf River was raised from seed by Quebec lumberman William Springer in the latter half of the 19th century. When Springer and his family were moving by wagon to Wisconsin, they bought a bushel of Alexander apples along the way. Upon arriving at their new home, he planted the seeds from said apples along the bank of the Wolf River and the Wolf River apple grew from there. This variety has since garnered a reputation as a good cooking apple and for the incredible size of its fruit.

Growing Notes:

- Vigorous and very hardy with a spreading growth pattern, slow to start bearing fruit (low precocity), spur bearing. Susceptible to fireblight but resistant to scab, canker, mildew and cedar rust.
- Pollination: Requires a pollinator of a different apple variety that blooms around the same time.
- Flowering Time: Middle
- Ripens: Early October
- Storage: So-so. Keeps about a month when stored in cool, humid conditions
- Recommended Use: Cooking, cider

Fruit: Huge apple. Bulbous, green and red. Mild sweet tart flavor, often used for pies. Originated on the banks of the Wolf River in Wisconsin.

Cider Notes:

- Brix = 12.1
- Specific Gravity = 1.049
- pH = 3.17
- Total Acidity (Malic) = 7.8
- Total Tannins = 0.11%

Cider Description

- Color - Pale yellow, moderately cloudy.
- Nose - Mild, tart apple aroma.
- Flavor - Low to medium body. Classic tart apple flavor. Little to no noticeable tannins.

Overall Impression - Good base apple with a straight-forward tart apple flavor. Would be enjoyable on a hot day when floating down the North Saskatchewan River.

General Cider Apple Growing Tips

Hardiness Factors:

Trees that are zone 1 and zone 2 grow in Alaska. In Edmonton, we are zone 3. But we can have occasional very harsh winters.

Micro-environment can play an important role in avoiding winter damage to zone 3 fruit trees. Sometimes the choice of a planting site is limited, but if there is a choice the following should be considered:

(1) Trees on a north or east-facing slope will escape sunscald damage compared to a south or west-facing slope;

(2) A shelterbelt from the north-west and north-east will help prevent wind damage, improve pollination and help build up heat units to mature fruit in the fall;

(3) Apples grow best in a loam or clay loam subsoil with at least one meter of soil which has no salinity or evidence of a high water table. Grey layers in the subsoil within one meter of the soil surface are not suitable for fruit trees; Areas where spring or heavy rainfall run-offs pools is not a good place to plant fruit trees of any sort.

(4) A planting site on an upland ridge or plateau adjacent to a low area is preferable to a flat low area. A low spot is often a frost pocket, also, often with poor subsoil drainage, and should be avoided. Frost is like a river, and flows downhill, where it pools and freezes blossoms in the spring and apples in the fall. Some apples like Kerr and Honeycrisp are quite tolerant of frosts and improve in flavour with a few frosty nights before picking.

Pollination Tips

The basics: Apples are self-incompatible and will not set a crop of fruit unless two different cultivars which overlap in bloom time are planted close together or grafted into the same tree. Two trees of the same cultivar will not suffice. In general terms each species can only pollinate others of its own kind - apples will only pollinate other apples, pears will only pollinate pears, and so on.

Amongst apples there is generally no distinction between crab apples, cider apples, and mainstream apples - they can all potentially cross-pollinate each other. Sterile flowering crabs like Summer snow produce no pollen and will not pollinate other trees.

For most fruit varieties, pollination is carried out by insects, often bees. Since pollination happens in early spring, good weather which will encourage bees can be a factor.

Pollination also depends on having blossom to be pollinated - which is why the risk of late frosts which can damage blossom is sometimes a concern. Frosts just after pollination can also damage the first stages of fruit formation.

Temperatures at blossom time are also very significant for effective pollination. Pollen germination in apples works best at temperatures in the range 60F-70F (15C-20C). If you are in an area where spring temperatures are less than this (say around 50F) then you will need lots of pollinators and/or varieties that can germinate pollen at lower temperatures. While bad spring weather can prevent effective pollination, it is useful to know that you only need 1-2 fine warm days during the bloom period for pollinating insects to come out and for blossom to be successfully pollinated.

Flowering groups / Pollination groups

One of the easiest and simplest ways to see if two varieties could pollinate each other is to check their pollination or flowering groups. These groups are somewhat arbitrary (there is no official definition) but the concept is simple - each group contains varieties that flower at around the same time. Groups may be given letters or numbers, but they typically run from the earliest-flowering to the latest-flowering varieties in each species. This works for apples, pears, and most plums. Pollination is most likely to be successful with two varieties that are in the same group.

In cool temperate climates, where spring is short - such as in northern Alberta, you can assume that varieties in neighboring flowering groups will also be compatible because the flowering will overlap. The exception is the late flowering varieties.

Late bloomers with overlapping bloom times are Honeycrisp, Kerr and Northern Spy.

Cool fact: Dolgo and Cortland Nova Red are the only apples listed as self fertile, or self-fruitful, meaning that they will fruit without another tree in the close vicinity.

Useful Notes on Fruit Thinning

This advice from a cider orchardist we met on Salt Spring Island. "Don't even hesitate if you want a reliable yearly fruit set! You can go from boom to bust from one year to the next if you do not manage the fruit load on your trees."

Fruit thinning will be necessary. If your apple tree seems to be producing a super abundance of apples one year and then none the next, or if you get lots of very small fruit, then fruit thinning may be required. In order to fruit thinly you can knock flowers off in the spring to reduce the amount of fruit that way or you can remove the fruit once it has started to develop. (I don't like flower thinning. Don't try this way unless you have an abundance of bees.)

The general rule of thumb is one apple always a hands width away from the next apple. This is only necessary for apple apples, not crab apples.

If you want the largest apples, thin to 1 per fruit spur. If you want to maximize the amount of applesauce or juice, thin to 2 per spur. If spurs are really close together, stay with 1 per spur.

Don't bother to thin until the tiny apples are about pea sized. The tree will drop a bunch on it's own, somewhere between BB and large peppercorn size.