

'Franklin' cider apples hang on the original tree in Franklin, Vermont.

## CHANCE SEEDLING NEW BITTERSARP APPLE PATENTED

Vermont apple grower finds a tree in his orchard; discovers it has a unique profile which makes it a good addition to sweet and hard cider blends.

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**T**HE STORY OF the 'Franklin' cider apple is one of happy accidents.

Bill Mayo and wife Susan run the Franklin General store in Franklin, VT. His family has a small orchard of 400 trees, most of which are 'Honeycrisp.'

However, there is another tree in his orchard — a chance seedling, which Mayo discovered in 2008. He began incorporating the apple into the Franklin General Store's sweet cider.

"You get this mystery dryness that makes you want to drink more and more," he says.

After the apple's influence on Mayo's sweet cider made it quite popular, Mayo set his sights on the burgeoning hard cider industry. He sent samples of the apple out for testing to distributors, hard cider makers, and researchers.

This is where Terence Bradshaw, tree fruit and viticulture specialist with the University of Vermont, comes into the fold. Bradshaw, also a hobby hard cider maker, says hard cider apples often find their way to him.

Such was the case with Mayo's seedling apple, which Mayo calls the 'Franklin' cider apple.

### EVALUATING THE VARIETY

Bradshaw ran juice samples in his lab, and then compared it to 44 other dessert and traditional hard cider apple cultivars picked at multiple orchards in multiple harvests across several counties, to get a com-

mercially grown hard cider apples. Tannins are polyphenolic compounds that provide mouthfeel, dryness, and a slight bitterness desired in craft hard ciders.

"Out of 44 different varieties or samples, it ranked fifth for highest total polyphenols. That's behind the traditional cider apples, 'Dabinett,' 'Foxwhelp,' and 'Nehou,'" Bradshaw says. "It's ahead of another sample of 'Dabinett' — the next 10 below it are traditional hard cider apples from Europe."

Bradshaw also says he compared the 'Franklin' apple's acidity to traditional European hard cider varieties and dessert apples used in hard ciders. He says it is a high acid apple, along the lines of 'Northern Spy' and 'Liberty' and more acidic than a 'Macoun.' He says the apple also ranks third highest for sugars among his 44 varieties tested, and Mayo says the juice measures anywhere from a 17.5 to 19 Brix.

Within the hard cider circle, the variety 'Kingston Black' is known as a premiere bittersarp — having the right mix of acids, tannins, and sugars — but difficult to grow.

When the 'Franklin' cider apple was compared to the 'Kingston Black' in Bradshaw's lab, the 'Franklin' apple was slightly lower



The original 'Franklin' cider apple tree in bloom.

prehensive look at how the 'Franklin' apple compared with other hard cider cultivars.

He sorted the apples by the three parameters by which hard cider varieties are evaluated — tannins, sugars, and acids. Bradshaw says tannins are the most difficult characteristic to get out of com-

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than the 'Kingston Black' in acidity, four spots higher than the 'Kingston Black' in sugars, and five spots higher in tannins.

"If you consider 'Kingston Black' somewhat in the rare category of bittersharp then it falls in that category and there really aren't a lot of apples that fall in that category," Bradshaw says.

### GROWTH HABITS

"The grafts growing at the nursery from this chance seedling are very vigorous," Mayo says. "Unlike the 'Kingston Black,' it's an annual producer. We picked 30 bushels off that tree."

Mayo says the tree was harvested in a few hours by shaking, and the apples hang well on the tree, as opposed to dropping early as some hard cider varieties are prone to do. This holding quality, he says, will make it a good candidate for mechanical harvesting. As well as being a good producer, Mayo says this past year's harvest yielded 2.74 gallons of juice per bushel.

Since the 'Franklin' tree is a chance



This year's harvest netted 30 bushels of apples off one tree.

Photo credits: Bill Mayo

seedling tree that has been around for approximately 60 years, it's safe to say the tree has been exposed to disease and cold winters. But both Mayo and Bradshaw say they've seen no traces of apple scab or cedar apple rust.

Bradshaw does acknowledge that fire blight is not something the area has to deal with. But, growers there are familiar with cold winters.

"We live on the Canadian border," Mayo says. "This tree is 60-plus years old and has shown no winter damage. It was put to the test in several winters of -32°F to -35°F."

Tito Navarra of Cummins Nursery in Ithaca, NY, says what intrigued him was how the tree came through with a regular crop in 2012, when most other growers in that region were hurting.

"Bill's tree is interesting because it is

in USDA Zone 3 and that winter was just warm, and then we had that cold snap in the spring, and everything was wiped out," he says. "Bill's tree came through."

The tree produces apples approximately 1.75 inches across, says Elmer Kidd, chief production officer for Stark Bro's Nurseries & Orchard Co. in Louisiana, MO.

"It makes a nice apple, a pretty russet, it's a small crab apple size," says Steve Stata of Hall Home Place Ice Cider in Isle La Mott, VT.

Bradshaw says there were some differences in apples that were shaded because of the heavy crop.

"We did notice just from tasting the fruit and visually, fruit size and color, there were differences," he says. "Growing this in a system that allows better light penetration such in a tall spindle, we could get some different numbers out there."

### THE FUTURE

"I told Bill 'You've got to get this propagated because one lightning strike and you could be out,'" Bradshaw said in the early testing.

And that's exactly what Mayo did. After sending samples to Stark Bro's to be tested, they worked out an agreement to patent and release the tree.

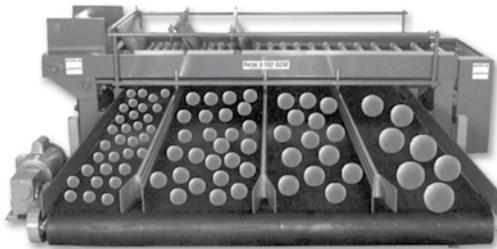
Stark Bro's Nurseries & Orchards Co. is currently propagating trees for a 2017 release. Kidd says he's budded 2,000 trees on B.118.

"There's such a small amount of the bittersweets and bittersharp in production in this country," Stata says. "Having this bittersharp come on the market is going to be a huge difference for the future of the cider making community."

Mayo, Bradshaw, and Stata say this apple is a good fit for sweet and hard cider blends. Mayo is excited about what the future will hold for his tree.

"I keep trying to find reasons not to like this apple and it continues to surprise me," he says. "This is an all-American apple discovered on U.S. soil, and a distinctive bittersharp to be called our own." ●

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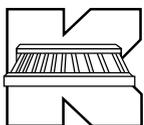
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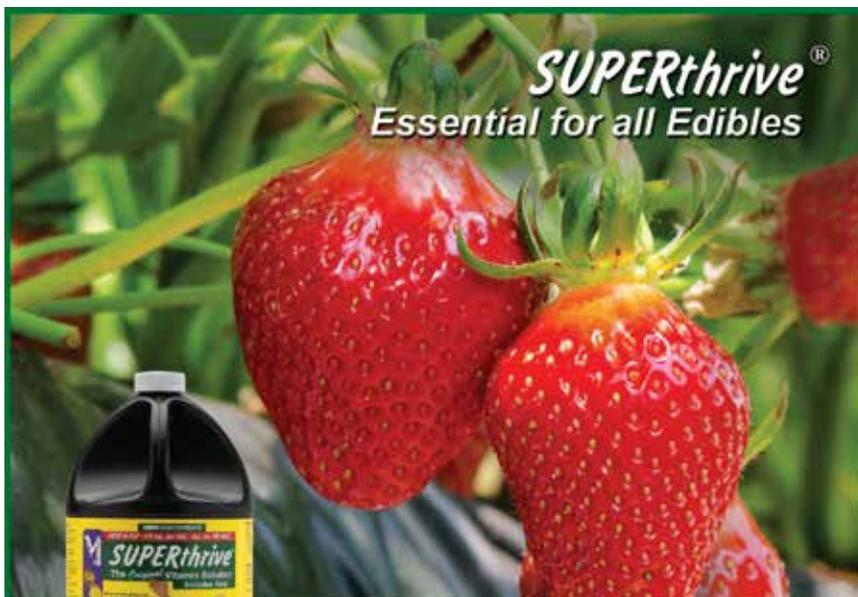
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