

# RURAL VENTURES

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Photo courtesy of KiwiBerry Organics

Grown on trellises in raised beds, kiwiberries represent a novel fruit crop for Pennsylvania. Holly Laubach and Dave Jackson of Danville have established a unique fruit operation, founding KiwiBerry Organics. To learn more about kiwiberries and the operation turn to E-6.



## INSIDE:



- E2

E4

5

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ing - E8

# Hardy Kiwis Taking Root as Keystone Fruit



Photos courtesy of KiwiBerry Organics

Hardy kiwi trellises laden with fruit.



Grown on trellises in raised beds, kiwiberries represent a novel fruit crop for Pennsylvania.

Alex Wenger

Special to Lancaster Farming

DANVILLE, Pa. — As a farmer, would you risk your livelihood on a crop that requires specialized pollination techniques and hand-harvesting, has a short shelf life, and has to be picked within a single three-week window each year?

Dave Jackson, co-founder of KiwiBerry Organics, does just that. More than 20 years ago he began planting his acreage in hardy kiwis, a smaller cousin of the well-known tropical fruit, and in doing so has become one of the nation's biggest growers of the fruit.

Fighting weather and disease, struggling to develop growing techniques, putting hours of time and thousands of dollars into breeding work, he has worked hard to fulfill his vision of creating the world's sweetest kiwifruit, right here in Pennsylvania.

Mention kiwifruit to most people and what immediately comes to their minds is a brown, egg-size, fuzzy, fruit. But that tropical kiwi is just one of 60 different species of kiwifruit that originated in Asia, and it has a much sweeter relative that is very cold-tolerant.

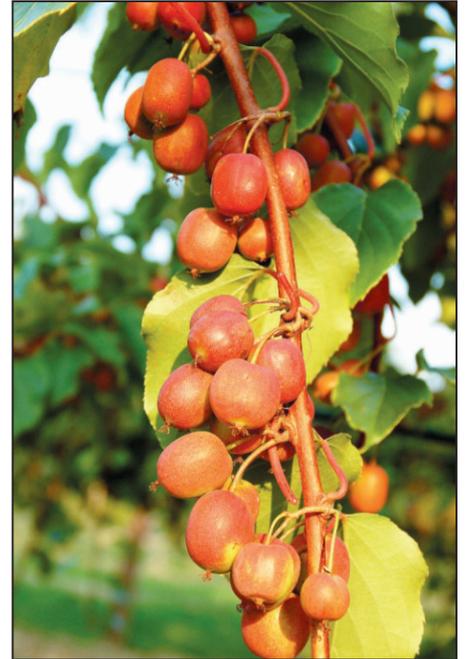
At first glance hardy kiwis, *Actinidia arguta*, bear no resemblance to their fuzzy cousins; the twining, woody, perennial vines produce small, grape-size fruit, which hang in dense clusters and come in a diversity of colors, including reds and purples. They are smooth-skinned, can be eaten whole and do not need to be peeled.

"Kiwiberries is a marketing name we gave to commercial (hardy) kiwis way back when," Jackson said. "The West Coast called them baby kiwis, and we didn't like the route they were following (with their product), and we decided to call them kiwiberries."

Today, Jackson and his business partner, Holly Laubach, are among the nation's largest hardy kiwi growers. In a good year, they say, they account for about 20 percent of U.S. hardy kiwi production.

#### Finding Their Niche

When Jackson returned to the land after a career in music he began looking for a novel, sustainable, crop.



Aloha Annas was the second variety grown commercially by KiwiBerry Organics.

"I was searching for an original niche crop that could be sustainably grown in the state of Pennsylvania," he said.

In the end he decided on hardy kiwis and began pioneering the crop in Pennsylvania with little practical growing information available to him.

"Like I've said, I've used the words, 'that didn't work,' more than I've used the words, 'that worked!'" he said.

Shortly after establishing his kiwi operation, Jackson was joined by Holly Laubach, who co-founded the business with him, helping him develop the varieties and growing techniques that KiwiBerry Organics uses today.

When Jackson and Laubach began, the common commercial growing technique for hardy kiwis, called a pergola system, was designed to

More **KIWIS**, page E7



KiwiBerry Organics' original variety Passion Poppers represents 80 percent of its kiwi acreage.

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Photo courtesy of KiwiBerry Organics

Holly Laubach and Dave Jackson are the founders of KiwiBerry Organics.

## Kiwis

Continued from E6

shade the fruit, which can help to produce a uniform and blemish-free crop.

But, Jackson said, pergolas also keep the natural sugars, measured in Brix — the scientific measure of sugar levels in fruit and vegetables, from reaching their full potential. The more sunlight that hits the fruit, the sweeter the kiwi and the higher the Brix.

“We can take the same variety we have here that will do a 28 (Brix), put it on a pergola (growing system) and it only does 18 (Brix). Pergola only does a 13 to 18 Brix and cuts it off. We’re looking for something that is much higher,” he said.

Over the years, KiwiBerry Organics has developed a modified T-bar trellis system that allows its fruit to get as much exposure to sunlight as possible. This exposure, aided by an unusual “gull-wing” method of pruning, contributes to the increased Brix level.

The hardy kiwi vines are planted 15 to 20

feet apart and, much like grapes, grow on raised beds.

“What will happen in the springtime is you’ll see all weeds growing on the raised beds,” Jackson said. “I’ll come in and when the weeds get about, say, 2 to 3 inches high, I’ll come in and fertilize the weeds. And everybody goes, ‘You’re crazy!’”

“But about a week later, I come by with a grape hoe on the tractor, and I’ll curl those weeds down in the beds themselves. It brings up the organic matter, and the nutrients have already been processed by the weeds, which makes it more of a symbiotic, fungal relationship between the roots of the kiwi and the ground. I’m saving probably two-thirds fertilizer with the bills and such,” he said.

Another challenge that Jackson and Laubach had to overcome was pollinating their crop. Kiwis are dioecious, meaning that some plants produce only male flowers and some only female flowers.

The pollen-producing males presented a challenge. It’s critical that they release their pollen at the same time as the female plants are blooming to ensure adequate pollination, which leads to good fruit set.

Jackson and Laubach were told originally that bees were the primary pollinators of kiwis, but with funding from a Sustainable Agriculture Research and Education (SARE) grant, they soon discovered this was not the case and that wind pollination was much more effective.

The technique they’ve developed consists of planting fast-growing paulownia trees at the ends of the female kiwi rows. Once the trees are established, they plant male kiwi vines at their base.

“What’s going to happen here is these males are going to start growing up as these paulownia grow up too. And then the males are going to go over to the paulownia and go poll,” Jackson said as he made an extensive gesture with his hands imitating pollen falling over his female kiwis.

To protect the tender kiwis from frost early in the spring, Jackson and Laubach installed a “wind machine” at the top of Jackson’s sloping land that pushes the ascending frost to the lowest part of his property, away from his trellises. “I’ve got an 18-foot blade on top and every 4-1/2 minutes the propeller will do a 360 and blow air, at 90 miles per hour,” Jackson said. The goal is to try and keep “the air moving down the valley” and away from the plant’s young, tender foliage.

The harvesting and packing season begins in late September and becomes “an intense several weeks” for Jackson and Laubach. Allowing the fruit to reach its full potential for sweetness by ripening on the vines means that it has to be picked precisely at the right time or the company risks losing an entire year’s labor.

“When a variety comes into maturity, you have maybe 12 to 14 days to work with that and then it goes soft. In a three-week window we’re running (picking) two different varieties,” Jackson said.

All the fruit is hand-picked then hand-sorted for quality control to en-

sure that only the best make it to discerning pallets.

The conventional method, Jackson said, is to pick the fruit while it’s still green, force-ripen it with ethylene gas, and then “send it on its way.” That way, there’s almost no loss on the grower’s part.

Despite being riskier, letting the fruit fully ripen “equals better taste and nutrition,” Jackson said.

“It’s every grower’s nightmare to wake up one morning, come out and start to squeeze them, and they go soft in your hand. I’ve done that a few times,” he said.

### Finding the Right Variety

Since Jackson first began his love affair with kiwis, he’s grown more than 50 distinct varieties of hardy kiwi in trial plots on his farm searching for the ones that were commercially viable for Pennsylvania.

From these, he and Laubach selected 12. They planted almost their entire kiwi acreage in one of these varieties, a red-skinned, red-fleshed cultivar. After 14 years, Jackson said, they decided that they had made a mistake.

“Really nice fruit, but the plant went biennial, triennial, in production, which means two to three years you won’t have any fruit,” he said. “One year, you have way too much fruit. We had about 700 (vines) at one time. Now, I think I have seven of them.”

Jackson and Laubach have replaced this red variety with a variety they developed called “Passion Poppers.” As well as being particularly well-suited to Pennsylvania’s climate, Passion Poppers are unusually sweet.

“The higher the Brix is, the better,” Jackson said. “And I’ve been seeing some 30 to 32 Brix come off here this year.”

Independently confirmed by Penn State University’s food lab, with an average of 28.25 Brix, KiwiBerry Organics’ Passion Poppers hold the record for the world’s sweetest kiwi-fruit, tropical or temperate.

Jackson even tried to register his accomplishment with the Guinness Book of World Records, but “they didn’t want to deal with the world’s sweetest kiwi,” he said. “Guinness Book of World Records was more looking for things like how many diapers you could put on a baby.”

In the end, Jackson said, his and Laubach’s years of labor have paid off. For the past five years, they have sold their entire crop, in most cases before it’s picked. And their crop will only get bigger.

As young vines mature, KiwiBerry Organics expects to increase its annual production from between 20,000 and 40,000 pounds to more than 100,000 pounds of kiwiberries.

Currently, Jackson and Laubach sell their crop to upscale markets in the Northeast and Southwest, but they say they’re looking at international markets and are considering the addition of an on-site winery.

Jackson already travels to collaborate with kiwiberries researchers, growers and marketers around the world. Early next year, he plans to visit Belgium, which is interested in hardy kiwis and is in the midst of commercial planting.

Jackson also continues to improve his own growing techniques and breeding work. Currently, he and Laubach are researching self-fertile Passion Poppers that would eliminate the need for male pollinators.

“All of a sudden the world’s sweetest kiwi is being done in Pennsylvania? That’s absurd,” he said, laughing. “But it’s true.”

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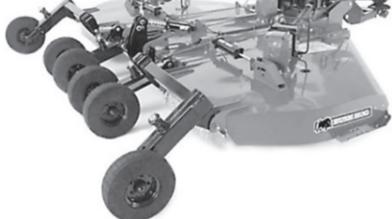
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