

Natural Resources Conservation Service

# CONSERVATION Showcase

## Pinpoint Soils Data Leads to Successful Tree Planting for Iowa Apple Orchard

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A small Clarke County apple orchard is prospering after soils information provided by USDA and expert advice from *The Apple Grower* helped beginning orchardists start off on the right track.

Darren and Becky Housberg, who both grew up on farms in Hamilton County, moved to Osceola in 1995. Darren works for The Maschoffs, an Illinois-based hog production company. Becky, a former graphic designer, just finished her eighth year managing Apple Trails Family Orchard.

They cash rent most of their 320-acre farm near Weldon that they purchased in 2009. The farm includes corn, soybeans, hay, timber, a few ponds, and now a small apple orchard. Next year, the Housbergs are planning to build a new home on their farm.

They began making plans for their orchard in 2010. Becky researched apple varieties, and the couple set aside 40 acres of expired Conservation Reserve Program (CRP) land for their planned orchard and a pond.

“Because of the clay content in Iowa soil, it can be difficult to grow some varieties of apples,” said Becky. “We had apple trees on our acreage when I was growing up as a kid, so we decided to take a portion of this farm and make it a little apple orchard. After my parents died, this has been part of the grieving process.”



### NRCS Soils Information

To help find the best orchard location within the 40-acre boundary, Becky contacted local soils experts from USDA’s Natural Resources Conservation Service (NRCS). District Conservationist Dennis Schrodtt and Soil Scientist Julie McMichael visited the farm in April 2010 to assess the site. McMichael used a soil probe, tested the soils, viewed soil characteristics, mapped and then marked out the best locations to plant trees.

“NRCS soils information was a huge factor for deciding where we located the orchard,” said Becky. “You can tell now, just by looking at the trees, where the best soil is. Those trees are huge. They’re amazing.”

Becky says you can also see where rows of trees aren’t doing as well. “I planted some trees in areas with poor soils. You can see where the trees begin to taper off,” she said. “Julie was right. The soil has an impact on them.”

Becky and Darren purchased 110 trees at Stark Brothers Nurseries and Orchards in Missouri and planted them in Spring 2011. “Starks Brothers helped us choose the best rootstocks to plant in soils like ours,” she said.

The Housbergs also built a pond (grade stabilization structure) adjacent to the orchard. The pond was constructed with assistance through the Rathbun Lake Special Project. Housberg’s farm is on the western edge of the Rathbun lake Watershed. The pond is helping to reduce sediment delivery downstream and providing irrigation, when needed, to the orchard.



*This pond was built adjacent to the orchard (seen in the distance) to supply irrigation, when needed. However, the primary purpose of the pond is to reduce sediment delivery downstream in the Rathbun Lake Watershed from upland cropland.*

## The Apple Grower

As Becky learned more about the importance of productive soil in developing the orchard, she contacted Michael Phillips, an award-winning author and organic orchardist known as *The Apple Grower*. Phillips promotes a holistic approach to treating fruit trees for pests and diseases. He is also a strong believer in building soil health.

Phillips, who resides in New Hampshire, became a mentor for Becky. “He recommended building the soil from the top down and helped me develop a plan,” she said.

Becky, who is growing the trees using all-natural products, is certified and follows feeding and management recommendations through Certified Naturally Grown (CNG). Using all-natural products has its challenges, but Becky says it’s worth it. “I don’t want to be exposed to the harmful chemicals,” she said. “We’re not in this venture to get rich. We’re not trying to be a big orchard. We just want to provide affordable, chemical-free, healthy foods to this part of southern Iowa.”

“If I’m spraying now, and the wind changes and I get a face-full of something, I don’t have to worry. It’s not going to hurt me,” she said.

## Pest & Disease Resistance

Becky has continued to work with Phillips on ways to compensate for what is missing in her soils, as well as natural treatments for pests and diseases. “Through foliar feeding and constantly building up the soil, we have been able to overcome some of our built-in disadvantages,” she said.

Phillips developed a foliar spray called the “Core Holistic Recipe” that, when applied to a tree’s leaves and branches, helps boost tree health and its ability to fight off pest and disease problems. The mix includes:

- » Liquid fish – a fertilizer packed with nutrients.
- » Cold-Pressed neem oil – a pest repellent that is also high in nutrients.
- » Blackstrap molasses – activates beneficial microorganisms on the leaf surface.
- » Mother culture of effective microbes – a liquid bacterial product that contains microbes that enhance plant health.

Becky says the mixture is working well, but annoying codling moths – the worm commonly seen in apples – are beginning to find their way to her apples. “Our honeymoon is over,” she said.





To fight off codling moths Becky uses traps, other beneficial insects, and *Bacillus thuringiensis* (Bt) to fight them off. Bt, which is allowed for use in organic production and processing, is a bacterium stomach poison for specific pest insects that causes them to stop feeding within hours. It does not harm beneficial insects or humans when used properly.

Becky also uses Kaolin clay, a natural clay used in foods, and products that contain the insecticide Spinosad to keep the codling moths under control.

“We are out there often spraying the trees,” said Becky. “It is harder than I anticipated fighting off all the different diseases that apple trees can succumb to.”

The foliar feedings seem to be helping soil conditions on the orchard. For example, Becky says her soils are naturally low in Boron (B) which is common in sandy, acidic soils that are low in organic matter due to B leaching. “When we took leaf samples, it showed sufficient levels of Boron,” she said. “The trees have to be getting it through the foliar feeding.”

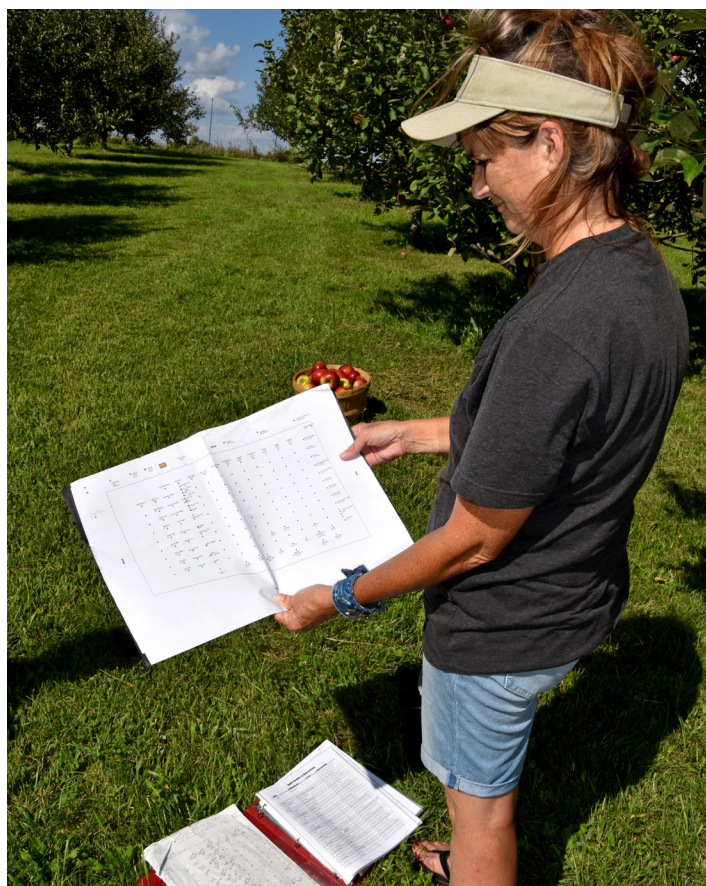
## Orchard Development

The Housberg’s orchard, which is protected from wild animals with a 10-foot tall fence, has grown to 200 trees with 32 apple varieties. Becky sells them at the farmer’s market in Osceola and at a farm stand in Weldon. She says only about 40 percent of the trees are producing now, but once more trees produce she will seek out more markets.

Becky and Darren harvest the apples by simply using a basket and a ladder. “We don’t sell any apples that have fallen on the ground,” she said. “I have noticed the past couple years more people, especially young people, who are seeking out organic and naturally grown fruits and vegetables.”

Becky credits much of her early success to the advice she received early on about soils. “The soil is the most important part of growing, most anything,” she said.

For more information about the soils on your land, visit your local NRCS office or go to the Web Soil Survey at <https://websoilsurvey.nrcs.usda.gov/app/>.



**Top Photo:** A half bushel of apples picked from Apple Trails Family Orchard.

**Above:** Becky Housberg shows layout plans for the orchard, with careful consideration for soil conditions.