



PROFILES IN soil health

Michael Crowell
Turlock, California
270 acres
Crops: Corn, forage mixes, dairy operation
Tillage: No-till



Shunning the plow, California farmer seeks to build, not mine the soil

For any California farmer who doubts the soil-health benefits of no-till, Michael Crowell offers this challenge: "Just come look at my soil."

Crowell, 72, and his son and business partner, Adam, 46, own and operate a 270-acre dairy in Turlock Calif., growing silage corn and forage mixes in support of their 700-head cow herd.

For those who take up his soil challenge, Crowell offers this prediction: "You are going to see soil that is in beautiful condition. There has not been a piece of iron in that soil since 2008," he said. "We will dig into that soil and you will feel that soil – you will look at it and say, 'That is unbelievable.'"

But despite the visual and tactile proof he said his demonstration will offer, Crowell knows no-till can



Silage from the Crowell's 270-acre farm is used to feed their 700-head milking herd.

be a hard-sell to other farmers in his part of the country. Farming in a near-ideal growing climate with historically available irrigation water, Central California farmers have been slow to adopt what has become a common conservation practice across large swaths of the U.S.

Dennis Chessman, state conservation agronomist for USDA's Natural Resources Conservation Service,



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said California farmers face a number of unique production challenges that have contributed to their no-till reluctance.

"Slower no-till adoption rates here are generally attributable to a lack of California-specific tillage research on California crops, high property values and high value crops, as well as reliance on gravity-fed furrow irrigation systems," Chessman said. "What I did not adequately appreciate until I came to California is that it really is different than agriculture anywhere else in the country."

But Crowell believes that tradition also plays a part in his peers' reluctance to change. "Farmers are creatures of habit and until they get their backs to the wall financially, it is hard to change them. In some ways they say, 'If it ain't broke, I'm not going to fix it.' But with California's shortage of water, I'd say it's broke," he said.

Crowell seems very comfortable being the only one in his area to try something new when he believes

Healthy soil has amazing water retention...

Every 1% increase in organic matter results in as much as 25,000 gallons of available soil water per acre.

in it. He has realized several competitive advantages to being a no-till innovator. Recently, increased moisture retention has joined fertility and lower input costs as one of those advantages. With California's recurring droughts, and with irrigation water supplies dwindling, optimizing every drop of water has become critical for all growers.

"With no-till, your pre-planting irrigation might be half of that of a tilled situation," Crowell said. "So right there you're probably saving two to two-and-a-half inches of water."

Crowell began his personal foray into no-till through a sustainable agriculture group nearly 10 years ago. Crowell convinced his brother, who was his business

Michael Crowell, California



Through practices like no-till, Michael Crowell (right) and his son and business partner, Adam, are noticing greater water infiltration and moisture retention in their soil.

partner at the time, to plant just 30 acres using the no-till method.

"I wanted to try the no-till thing because with no-tilling you harvest one crop, irrigate your land and plant right into the stubble of the old crop," he said. "You get rid of all those input costs as far as tillage goes."

The Crowell's no-till road hasn't been without its bumps. However, NRCS' Chessman said they have what it takes to be successful: A commitment to stick with their soil health management system until they worked out the bugs. "I think they will both tell you that it is a never-ending process of adjustment."

Crowell will also tell you that improving the health and function of his soil has been good for his business. Now that his son, Adam has returned to the farm as a business partner, he also sees improving soil health as a way to ensure the long-term productivity and sustainability of the farm for future generations.

"I don't want to be a miner of the soil," Crowell said. "I want to be a soil builder."

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