



# PROFILES IN soil health

Lawrence Sanchez

Adelino, New Mexico

300 acres

Crops: Grass, alfalfa, corn, winter wheat, oats

Planting: No-till and Strip-till

Covers: Most used mixes:

- Fescue
- Orchardgrass
- Clovers



## Healthy soil—see, smell, feel the difference

The way Lawrence Sanchez sees it, everything in his farm operation begins with healthy soils. "You've got to start from a healthy soil if you want superior crops," says the Adelino, New Mexico farmer. "You're going to get a mediocre crop if it's from what I call a dead soil, one that doesn't have the minerals and live organisms for the root system to pick up."

"But a soil that's alive and well, you can tell it's healthy by smelling that deep earthy smell and seeing that it's full of earthworms," he explains. "Dig it up and you see the pores and channels through it. Several years ago, a farmer walked across my land with me and said he noticed how soft my ground was. He said it was like my land was cushioned," Sanchez says.

### Returns from Healthy Soils

Lawrence Sanchez is continually testing, comparing, and exploring what works on his farm. In the 12 years he's been using soil health practices, he's learned to expect that healthy soil farming methods will give him:

- Superior crops
- Higher yields
- Fewer weeds with reduced use of herbicides
- Fewer insects without use of insecticides
- A stronger soil structure
- Super water infiltration
- Less irrigation water needed
- Protection from wind and water erosion



**Lawrence Sanchez (left) and NRCS State Agronomist Rudy Garcia (right)** discuss soil health management practices at the Sanchez farm in Adelino, New Mexico.

"And you can tell your soil is healthy by looking at your crops. They're dark green, not pale green," he adds. "If you can't tell healthy soils by all that, just look at your production."

### Organic matter is key

Sanchez and his nephew, Clarence Sanchez, farm 300 acres together and Clarence leases another 400 acres in the Rio Grande Valley. The two grow grass, alfalfa and corn with winter wheat and spring oats in the rotation. Both use no-till and strip till. Lawrence has used the two practices for more than 15 years. Those practices, combined with cover crops and crop rotations that keep the soil covered year-round, are keys to building and keeping soil healthy, Lawrence says.

High organic matter is his best indication of healthy soil. "Without organic matter, you have nothing. You have nothing for the microbes to eat," Sanchez says.

"We try to keep at least 3 percent organic matter in all our soils," Sanchez says. "That's very high for soils around here. The average on most soils in the area is 0.5 percent to 1.2 percent organic matter. As a matter of fact," he laughs, "the NRCS thought the lab made a mistake on my soil analysis the first time they looked at it. They asked me to re-test it, and I did, and it was still 3 percent. They were impressed."

### Building healthy soils

When he begins to farm new land for a landlord, Sanchez says his first step is to do a soil analysis. "You need a benchmark," he says, "and then you need to set goals for what you want to do with that land. Early on, I usually bring a lot of manure in, spread it uniformly across the field, and incorporate it into the soil.

"We do a soil analysis every year on our land. I watch organic matter content very carefully and do what's needed to make sure it's high."

### There's a learning curve

"There's a learning curve from conventional farming to healthy soil management," Sanchez says. "But it doesn't have to be an expensive one. If you start with minimum till and then go to no-till, you'll save money by reducing trips across the field and you'll begin to gradually build microbes up in the soil. Then you can add cover crops and grow crops to keep the soil covered all the time."

Sanchez has been using soil health measures for more than 12 years. "You have to be patient in building soil," he says. "It's long-term. It took three years for us to see some effects in soil analysis and in our production. We didn't see the bigger differences until five years."

Soil health methods, including cover crops, are used on all the land, unless Sanchez just can't get cover crops

planted. Fescue, orchard grass, and clovers are the primary cover crops. "I'm really tempted to try hairy vetch in our cocktail mixes but just haven't done it yet," he says. Sanchez uses a grain drill or other seeders to establish his cover crops.

### Healthy soils lead to healthy crops

"For years, the soil analysis reports I'd get back from the labs have bothered me," Sanchez says. "They would say you need so much nitrogen, so much phosphorus, for the plant. Everything was geared to the plant. That didn't sound right to me. I always thought we needed to be treating the soil."

"Our food comes from the soil, and if nutrition isn't in the soil, how can it be in the plant?" Sanchez wonders. "The most important thing about healthier soil is that we get a nutrient-rich, healthier, higher-producing crop," he says. "I want a nutritious product, whether it be alfalfa, grass, or vegetables. I'm on the way towards that. In the long run, I think you'll get a better price for your product if you've got healthy soils."

### Optimizing inputs

"I was surprised early on at both the quantity and the quality of the grain and hay that I began to produce," Sanchez says. And he's been surprised at how he's been able to optimize his inputs. "I've used less water. One year I saved three irrigations on just the first cutting of hay alone. Every year is different, but I know I'm saving water," he says.

"We've noticed we don't have as many weeds as everyone else has," Sanchez says. "And if you have a healthy production system built on natural principles, you're going to keep the insects away and help your weed problems."

### Try something new

"I was never reluctant to try something new," Sanchez says. "Last year, I believe we had 33 plots where we were testing new things dealing with

*"There's a learning curve from conventional farming to healthy soil management."*

*- Lawrence Sanchez, landowner*

natural soil amendments. Most of what I've learned about improving soil health I've learned on my own, but I do get very good advice from people like Rudy Garcia, the agronomist with the NRCS in New Mexico, and NRCS soil scientist Clarence Chavez. They're a big help. My farm is used as a showcase by NRCS. I learn from them and they learn from me.

"We hold workshops on our land for people who want to see how soil health practices can improve their whole operation. Over time, I've seen a shift in how people are looking at this. There's more interest now."

"I think what we need most to get more farmers using soil health practices is to get them to see the results first-hand," Sanchez says. "If they get out on the land and see for themselves what's happening, if they dig holes, look at the roots, and look at the crops, they can become convinced. It really requires a hands-on look."

"I've always been a conservationist, and I think building soil health just adds onto stewardship," Sanchez says. "The bottom line is, if I take care of the soil, the soil is going to take care of the plant, and the plant is going to take care of the livestock and me."

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