



**United States Department of Agriculture**

**Natural Resources Conservation Service**

## Five questions non-operator landowners should ask farmers about Soil Health

By Elisa O'Halloran

More farmers, ranchers and others who rely on the land are taking action to improve the health of their soil. Many farmers are actually building the soil. How? By using **soil health management** systems that include cover crops, diverse rotations and no-till.

And when they're building the soil they're doing something else – they're also building the land's production potential over the long-term.

But how do non-operator landowners (people who rent their land to farmers) know if their tenants are doing everything they need to do to make and keep their soil healthy? Barry Fisher, an Indiana farmer and nationally recognized soil health specialist with the USDA's Natural Resources Conservation Service, recommends that they ask their farming partner these five questions.

### **1. Do you build organic matter in the soil?**

Organic matter (carbon) may be the most important indicator of a farm's productivity. The amount of soil organic matter often determines the price farmers will pay to rent or buy land. Finding a farmer who is interested in building organic matter by using practices like no-till and cover crops is like finding a bank with a better rate on a Certificate of Deposit, Fisher says.



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## **2. Do you test the soil at least once every 4 years?**

Fisher says maintaining fertility and pH levels are important to your farm's productivity. Regular soil testing can give an indication of trends in soil fertility, pH and organic matter levels in each field. These tests will determine the amount of fertilizer each field needs. If a field has a history of manure application and very high fertility, a farmer could save money by planting cover crops to keep those nutrients in place rather than applying more nutrients that may not be needed.

## **3. Do you use no-till practices?**

Some landowners like the look of a clean-tilled field in the springtime. That "nice look" is short lived, though. "The reality is a field that has bare soil is subject to erosion and loss of organic matter, since it no longer has the protective cover from the crop residue on the surface," Fisher says. "No-till farming utilizes the crop residue to blanket the soil surface to protect it from the forces of intense rainfall and summer heat. This protective blanket will conserve moisture for the crop and prevent loss of soil from wind erosion, water erosion and CO<sub>2</sub> (carbon) that could be burned off by summer heat."

## **4. Do you use cover crops?**

"Like no-till, cover crops provide a green, protective blanket through the winter months or fallow times. The green-growing cover is collecting solar energy, putting down roots and providing habitat when the soil would otherwise be lifeless and barren," says Fisher. This habitat provides food and shelter for a broad population of wildlife above ground and beneficial organisms below ground. As the new life emerges, cover crops hold onto the nutrients left from the previous crop and in turn releases them to the next crop. The solar rays these plants collect are powering photosynthesis, taking in CO<sub>2</sub> from the atmosphere to produce food for the plant and the organisms living in the root zone. This same process also releases clean oxygen to the air and builds nutrient rich organic matter in the soil.

## **5. What can we do together to improve soil health on my land?**

To improve soil health, landowners and tenants have to think in terms of the long-term. According to Fisher, the duration of the lease agreement is perhaps the most critical matter in encouraging the adoption of these soil health management systems. "Farmers can actually build the production capacity and resiliency of their landowner's soil, but it may take several years to realize the full benefits of doing so," Fisher says. He suggests that landowners consider multiple-year leases that provide tenure security for the tenant. Longer tenures give both landowners and tenants more opportunities to improve soil health and realize the resulting longer-term production and profitability gains through sustainable conservation practices.