



PROFILES IN soil health

Ralph Upton, Jr.
Hamilton County, Illinois

Acres: 1,800

Crops: No-Till Corn, Soybeans, & Wheat

Covers: Hairy vetch, Annual Ryegrass,
Cereal Ryegrass



Cover Crops Work

Ralph Upton, Jr. began farming full time in 1964 at age 18. Known locally as “Junior,” Upton currently has 1,800 acres of no-till corn, soybeans, and wheat located in Hamilton County, Illinois.

He has used soil conservation solutions for decades and is known locally for his commitment to stewardship of soil and water resources. Upton is a veteran no-tiller and long-time advocate of soil-building ag techniques. Ralph is usually ahead of the curve. His interest and use of cover crops is no exception.

The main soil type on Upton’s farm is Bluford, a poorly drained soil that commonly contains a root restrictive “silt pan” within the top foot. After years of observing large differences in corn productivity directly related to root restriction by this layer, Upton decided to do some investigating. He

wondered whether cover crops could help improve crop root extension and offer his crops better access to sub-soil moisture. He found the answer to his question and if you have similar issues, you need to know what he learned.

The first talk about cover crops came up on a conservation farm tour back in 1998. Since then, Junior has worked closely with the Hamilton County Soil and Water Conservation District (SWCD) and the University of Illinois’ Extension Service, and USDA’s Natural Resources Conservation Service (NRCS).

Upton used old Agriculture Conservation Program (ACP), Long-Term Agreements, SWCD local programs, and federal programs—the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program, or EQIP. Upton has opened his farm for SWCD conservation tours seven times since 1989.



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Over the years, Upton installed various conservation practices on his own farms and rental ground. These include grassed waterways, grade stabilization structures, terraces, water and sediment control basins, filter strips and oil brine remediation.

Upton just entered into a contract with the Conservation Stewardship Program in 2012. For this, he will pursue more cover crop enhancements and new practices he always wanted to try.

Extension educator Mike Plumer, now considered a local expert on the subject, helped organize Upton's early cover crop trials and gathered up all the data. Together, they've learned a great deal about how cover crops work.

While Upton's primary goal was improving crop access to sub-soil moisture and building fertility, he also wanted to protect his soil from erosion, provide nitrogen for subsequent crops, and manage weeds.

For nearly ten years, Plumer compiled Ralph's data on soil improvements, yield increases, and other accomplishments, changes, and lessons learned.

"I'm always looking for ways to solve problems and this really works."

-Ralph Upton Jr., landowner

So what process did they use? After harvesting wheat, Upton plants hairy vetch. This resupplies the soil with nitrogen. After soybeans, he plants annual ryegrass to break up the soil. He found the main advantage to using cereal rye, as compared to annual ryegrass, is simply the ease of killing it off with a spring herbicide before planting corn.

Since 2004, Upton has seen dramatic changes in his corn yields. He predicts no-till saves him around \$15 an acre. Using cover crops costs \$8-\$20 dollars an acre but it is well worth it, as use of hairy vetch significantly reduced input costs.

Ralph Upton



Ralph Upton, "Junior," knows first-hand how much soil and crop yields can improve with proper use of cover crops.

All Upton's conservation solutions work together harmoniously as an integrated system. They build and protect soil resources, improve water quality, and create a more sustainable farm operation.

The amount of organic matter in Upton's soils started at less than 1 percent (.81). That level is now up to 3 or 4 percent. "And that's exactly what I needed for my soils on those fields," Upton said.

Cover crops also improve the soil structure and aggregate make-up of restrictive soils. Water now flows through his soil better, which saves money on tiling or drainage systems.

Local District Conservationist for USDA's Natural Resources Conservation Service (NRCS) in Hamilton County, Rhonda Cox agrees. "Mr. Upton has seen firsthand what a cover crop system did on his poor soils. I am confident cover crops can have a huge impact on your soils. I can help make that happen," Cox added. Visit www.il.nrcs.usda.gov to learn more.