



Mission Statement
The Iowa Learning Farm promotes efficient agriculture production systems that result in agronomic, economic, and environmental improvements through increased awareness and adoption of conservation systems and ethics.



ILF 01 Volume 4 Issue 3 Summer 2008

'Not Your Father's Tillage' to be featured at Farm Progress Show

The Iowa Learning Farm will have a significant presence at the 2008 Farm Progress Show. This is the first year that the show will be at its biannual home in Boone County.

The Iowa Learning Farm will be in two locations at the show. The rainfall simulator will be part of Conservation Central, which will be next to the Iowa State University display. The main ILF exhibit will be within the ISU hoop building on Central Avenue.

ILF farmer-cooperators Gary and Dave Nelson will be featured at the exhibit, as they are a testament to what many family farms are experiencing. Dave returned home to help his father Gary farm, bringing new ideas and techniques to try. Naturally Gary was skeptical but agreed to let Dave experiment. The results have convinced Gary and he is now an advocate for the soil conserving practices Dave has suggested—mainly strip-tillage.

The Nelsons are tenants of the Smeltzer Trust Demonstration Farm, near Otho in Webster County, and have adopted no-till and strip-till on the farm. They have seen the short-term impact and anticipate the long-term benefits of leaving more residue and increased organic matter and nutrients on their farmland.

The Iowa Learning Farm demonstration trial results supported Dave's claims about strip-tillage, helping to convince Gary to change. "The research we have been doing with the Iowa Learning Farm is looking under the soil surface and evaluating what's going on when you change tillage practices. So we've taken this farm and changed from a conventional tillage system to 100 percent strip-tillage program for this coming fall," said Gary.

The ILF Farm Progress Show exhibit will focus on strip-tillage, a next-best approach to no-till. While many farmers are hesitant to commit to no-till, strip-tillage is a fine alternative, marrying the best aspects of conventional tillage with the benefits of no-till. In the fall, the strip-tiller creates strips of exposed soil, broken up by a coulter and shank, leaving surface residue undisturbed between the strips. In the spring, the strip of exposed soil warms and dries faster than the rest of the field, making this system ideal for some Iowa soil types.

"When I came home to farm back in the early 1970s, I brought with me the value and return on investment of spreading dry fertilizer for corn," Gary

(Farm Progress Show continued on page 2)

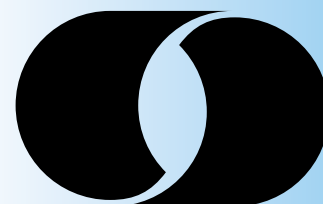


Dave Nelson



Gary Nelson

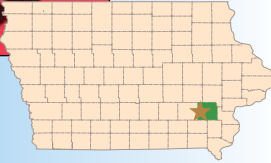
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LEOPOLD CENTER



Rob Stout



Producer Profile

Iowa Learning Farm cooperator Rob Stout farms land that has been in his family since 1926 near West Chester in Washington County. Alongside his father, he farms 1,000 acres and has a hog operation of 6,000 head.

Rob believes that one's mindset is at the heart of conservation. "It's the right thing to do," said Stout. "We have the responsibility to leave the ground in better shape than we came upon it. We have neighbors who farm 4,000 acres and are doing a good job conservation-wise, and some who are farming 80 acres that aren't, and every size in between. It is a mindset."

Rob decided to reconsider his farming practices some time ago. "In the spring of 1982 we had tremendously heavy rains which caused a lot of erosion," recalled Stout. "There was soil covering waterways and even on the roads in places. I could see a difference in those who were practicing conservation and those who weren't. So that motivated me to make some changes on my farm."

Rob has demonstrated soybeans with and without seed-applied insecticide treatment and corn with and without starter fertilizer for the ILF project.

Stout is a member of Farm Bureau, Iowa Corn Growers, Iowa Soybean and Innovative Growers Associations, and is a trustee for his church.

(Farm Progress Show continued from page 1)

recalled. "I now watch my son come back to the farm and see this technological approach he brings with him. It is interesting to see the generations of farmers bringing different things to the table."

"Our dads taught us to drive big tractors, blow black smoke and pull big implements really deep," said Dave. "Going to a more conservation program, we're not doing that big horsepower operation; we're not driving the tractor as much. What we are doing is saving hundreds of dollars on fuel, labor, and machinery, and at the same time creating a healthier soil profile to yield bigger crops. At first I wondered if strip tillage would be a fad, but economics and technology are helping us to perfect this system for a long term program on our farm."

Visit the Iowa Learning Farm display at the Farm Progress Show, August 26-28. For more information, visit their web site: www.farmprogressshow.com.

Summer 2008 Field Days

The Iowa Learning Farm sponsored several field days this summer beginning in June. The field day season will wrap up in August. Highlights include:

June 11: ILF field day at cooperator Doug Nolte's farm near West Liberty in Muscatine County. Attendees toured Nolte's strip-tilled acres and heard about his transition to strip-tillage.

June 16: a morning ILF field day at cooperator Dan Eklund's farm near Gowrie in Webster County. Mahdi Al-Kaisi, ISU Extension Field Agronomist John Holmes, and Eklund discussed no-till planting issues and how to overcome challenges associated with no-till.

June 17: Western Iowa No-Till Field Day near Minden, Pottawattamie County. Al-Kaisi and Mark Hanna were among the keynote speakers. ILF Conservationists Thad Bridges and Bill Hammitt served on the producer panel.

July 1: No-Till Advantage and ILF Field Day near West Union in Fayette County. The annual event was held at ILF at cooperator Collin Jensen's farm and was co-sponsored by Fayette County SWCD and ILF.

July 11: ILF conservationist Tom Wagner hosted a field day on his farm near Primghar, O'Brien County. Tom and his brother Jim spoke about strip-tillage for corn seedbed planting and no-till planting soybean into standing cornstalks.

July 29: CDI President and ILF cooperator Rick Juchems hosted a program on his farm for northeast Iowa SWCD commissioners, NRCS staff and ISU Extension staff. Matt Helmers addressed water management options to minimize soil erosion and presented results of his water quality modeling study.

Upcoming field days:

August 5: ILF field day for Certified Crop Advisors, Smeltzer Trust Demonstration Farm near Otho, Webster County.

August 6: "Operation Strip-Till" at Smeltzer Trust Demonstration Farm, Otho.



Heavy Rain and Soil Erosion

By Mahdi Al-Kaisi, Department of Agronomy; and Matt Helmers, Department of Agricultural and Biosystems Engineering, Iowa State University

Rain causes substantial erosion when the soil is most vulnerable, when there is degraded crop residue cover, tillage, or the absence of a crop canopy. In a normal rainfall, raindrops range from one to seven millimeters in diameter and hit the ground as fast as 20 miles per hour. The impact of millions of raindrops



hitting bare surface dislodges soil particles, splashing them three to five feet away. A heavy rainstorm may splash as much as 90 tons of soil per acre. However, most of the splashed soil particles don't leave the field; they clog surface pores, which decreases water infiltration, and increases water runoff and soil erosion.

Reduced tillage and cropping management systems are critical components for raindrop impact on the soil because of the crop residue protecting the surface. Excessive tillage can lead to increased soil sealing and soil erosion. Conservation systems promote

soil aggregation, infiltration, and soil tilth; and high amounts of crop residue provide abundant cover to protect the soil surface from rain.

In fields where major flooding did not occur, was there enough surface residue to prevent soil erosion after winter decomposition? Farmers should consider the effect of any additional tillage on remaining crop residue. If residue cover falls below 30 percent, field operations should be adjusted to minimize soil erosion from rain.

Cover crops, permanent vegetation, strip cropping, and planting on the contour can reduce the speed of water runoff and slow soil erosion on steep slopes. Conservation structures such as terraces, grassed waterways, and field buffers also slow the water flow, settle out sediments, and direct water away from the field to a suitable outlet.

Heavy intense rains that cause significant soil damage can be viewed as an opportunity to examine what should be done differently in the field to minimize soil erosion. Some suggestions include:

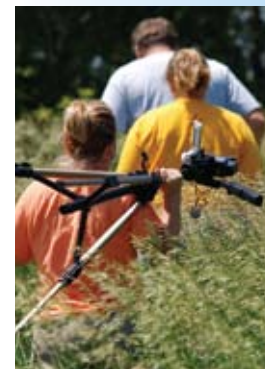
- Look at the pattern of surface runoff and the placement of buffer strips and waterways to direct surface runoff and minimize sediment transport.
- Evaluate your residue cover, the uniformity of residue distribution and its effectiveness in minimizing soil erosion.
- Document your field conditions with photos, if possible, and assess water ponding with each tillage system.
- Evaluate your field fertility conditions, especially if nitrogen was applied in the fall. There can be substantial nitrogen, phosphorous and potassium loss due to leaching and surface water runoff. The amount of N will be highly affected by the tillage system as well. No-till fields tend to have more soil permeability which could lead to a greater potential of N leaching.

ILF Videos

At the annual CDI conference last November the Iowa Learning Farm debuted a short video "Building A Culture of Conservation." The video's message is that conserving our natural resources and protecting our land and water is important for all Iowans. The video was mailed to all Iowa SWCD offices this spring.

That video has met with success as ILF has received many requests for personal copies. Statewide, SWCD staff are showing the video at events such as annual banquets, county supervisor meetings, schools and county fairs.

"I'm in charge of the annual Backyard Conservation Conference," wrote Sheila O'Riley, secretary for Adams County SWCD. "I showed it at the conference to 140 gardeners and conservationists: men and women, rural and urban residents. It was just the type of information I wanted to present to my group."

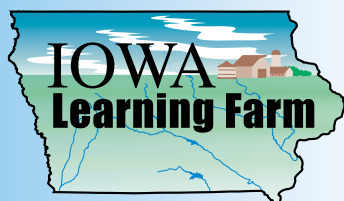


Jackie Comito, with camera, prepares to film on Rick Juchems' farm. Rick and his daughter Liz lead the way.

Recently, ILF received a District Initiative grant to produce five more short videos which will focus in-depth on soil and water quality. The videos will cover topics including:

the water cycle and water conservation, our watersheds and how to keep them clean, soil and land management choices, the relationship of societies and agriculture, and the culture of conservation and the people who are working to build it. These videos will be finished in time for the 2008 annual SWCD conference in November and will be made available for all interested persons.

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... and justice for all

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New look to web site

The Iowa Learning Farm has revamped its web site. The URL is the same—www.extension.iastate.edu/ilf—but the look and content are different. The web site contains more information about our cooperators and our conservationists, the latest news from ILF and our partner organizations, and notification of upcoming events.

Also on the new site are answers to topical questions by members of the ILF team in four areas: water, land, crops and economics. Please drop us an email if you have a topic you would like to see addressed on our site.

Your feedback is integral to the information that we present. Email us at ilf@iastate.edu.

