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## Choosing Next Years Crop

*Ellen Phillips, Extension Educator – Crop Systems, University of Illinois Extension, 708-352-0109, [ehillips@uiuc.edu](mailto:ehillips@uiuc.edu)*

Choosing the right hybrid or variety is one of the most important steps in planning. The typical corn hybrid is only in the market about three years, so evaluating new seed sources must be done every year. Choosing the best genetics for your particular field conditions can add to your profit.

Yield is not the only factor to consider. Planting conditions, seasonal weather, soil types, pests and other environmental conditions that can all influence yield. It is important to compare yield information from several locations. One should also consider maturity, lodging, stalk strength, disease and insect resistance, etc. Continuous corn rotations, especially in reduced tillage systems, are more likely to have a build up of disease organisms and therefore are at a greater risk for diseases such as diplodia, gray leaf spot, and stalk rots. Disease resistance built into the hybrid is the easiest defense a farmer has in protecting yield.

Numerous sources of information exist for growers searching for the right traits to maximize their profit. Company trials, university trials and on-farm test strips offer insight into which hybrids can grow well across a many different environmental factors and growing conditions. Performance trails typically list crop performance characteristics, such as emergence, maturity dates, yield, test weights, percent moisture and stalk lodging. Some also report grain quality information for percent oil, starch and protein. Most performance trials show the “least significant difference” (Lsd) value to indicate differences in that characteristic between hybrids or varieties. If the difference between two hybrids is greater than the LSD value, then you can confidently state that the two hybrids are different in that characteristic.

Look at the differences between the best and worst hybrids in a trial. Hybrids vary a lot in their potential to adapt to stressful environmental conditions. There may be large differences across a maturity zone depending on local conditions. Weather significantly impacts pests and yields differently every year. When comparing trials, find out the local growing conditions for that year. Most importantly, use two- or three-year averages to make comparisons, since these are more reliable.

Homegrown information can be equally valuable. Watching crops develop and using yield monitors to compare different hybrids in your environment is an important source of information.

Put field days on your calendar. Observing individual characteristics of a crop when it is growing is a great way to see differences. Contact your local corn or soybean associations for field day information. Visit your local University of Illinois research centers and ask to be on their mailing lists for research updates and field day information.

Northern IL Agronomy Research Center, near DeKalb, 815-824-2029, [l-paul1@uiuc.edu](mailto:l-paul1@uiuc.edu); [www.cropsci.uiuc.edu/research/rdc/dekalb/](http://www.cropsci.uiuc.edu/research/rdc/dekalb/)

Northwestern IL Agricultural Research and Demonstration Center, near Monmouth, 309-734-7459, [adee@uiuc.edu](mailto:adee@uiuc.edu); [www.cropsci.uiuc.edu/research/rdc/monmouth/](http://www.cropsci.uiuc.edu/research/rdc/monmouth/)

Copies of **2007 University of Illinois Corn, Soybean, and Forage Variety Trials** are available at local Extension offices. Current and historical crop performance data from surrounding states are available at the following websites:

#### University of Illinois

Corn, Soybean, Small Grains, Forage Performance Testing  
<http://www.cropsci.uiuc.edu/vt/>

Varietal Information Program for Soybeans  
<http://www.vipsoybeans.org/> (includes insect / disease resistance data)

#### Ohio State University

<http://www.oardc.ohio-state.edu/corntrials>  
<http://www.oardc.ohio-state.edu/soy2006/>  
<http://www.oardc.ohio-state.edu/forage2006/>

#### Purdue University

<http://www.agry.purdue.edu/pcpp/>

#### Iowa State University

<http://www.croptesting.iastate.edu/>

#### University of Wisconsin

<http://corn.agronomy.wisc.edu/HT/>  
<http://soybean.uwex.edu/soytrials/>

## University of Illinois Agriculture Events

New programs are being confirmed every day.

Keep in touch with your Extension Office for programs addressing the topics that interest you and are offered in your County. To find your counties website go to:

<http://web.extension.uiuc.edu/state/findoffice.html>

## Statewide University of Illinois Extension Calendar Website

<http://web.extension.uiuc.edu/state/calendar.cfm>

To search for programs throughout the state, check out Extension's searchable calendar. Search by location, topic or date to find a program of your interest.

# EDUCATIONAL OPPORTUNITIES

Rural Route 2  
is Available at  
1-800-468-1834

<http://www.extension.uiuc.edu/ruralroute/>

The Rural Route 2 service is designed to help farm families get through tough times. This **confidential service** provides referrals for farm business and family financial advice; helps manage economic as well as personal situations; helps locate local support; and identifies assistance through the Illinois Farm Development Authority.



# Farmland Prices vs. Farmland Returns

Gary Schnitkey, *Extension Specialist, Farm Management*, [schnitke@uiuc.edu](mailto:schnitke@uiuc.edu)

While farmland prices currently exceed capitalized values, likely increases in cash rents will bring farmland prices and capitalized values more closely in line with the historical average difference, according to a U of IL Extension study. "Recent increases in farmland prices raise questions about whether the farmland price increases are outpacing increases in farmland returns," explained Gary Schnitkey, U of I Extension farm financial management specialist and author of the study, "Are Farmland Prices in Line with Farmland Returns?", available on Extension's farmdoc website at ([http://www.farmdoc.uiuc.edu/manage/newsletters/fefo07\\_15/fefo07\\_15.html](http://www.farmdoc.uiuc.edu/manage/newsletters/fefo07_15/fefo07_15.html)).

Schnitkey approached the problem by comparing farmland prices to capitalized values. He noted that the USDA's list of average prices for Illinois masks differences across the state. For example, farmland prices are much higher near Chicago. Because of those differences, price-to-return relationships vary across the state. "Farmland prices increased from \$490 per acre in 1970 up to \$2,023 per acre in 1982," he said. "Then, prices decreased, to \$1,149 per acre in 1987. Since 1987, farmland prices have increased each year, with the average yearly increase 7 percent."

"Since 2003, increases have been above 7%. Farmland prices increased 7.4% between 2003 and 2004, 27.6% between 2004 and 2005, 14.1% between 2005 and 2006, and 13.9% between 2006 and 2007. Between 2003 and 2007, farmland prices increased by \$1,900 per acre—78%."

Capitalized values, he explained, represent the earning potential of farmland from agriculture. A capitalized value for a given year equals cash rent divided by an interest rate and assumes that investors receive the current cash rent each year in the future and the interest rates do not change.


"Higher cash rents cause higher capitalized values," Schnitkey said. "Lower interest rates cause higher capitalized values." In 2006 and 2007, farmland

prices exceeded capitalized values—46% higher. "Prior to the current period, the last time farmland prices exceeded capitalized values by a large margin was from 1977 through 1981," he said. "During the late 1970s, farmland prices increased because of strong commodity prices. In the 1980s, financial stress occurred, leading to declining farmland prices."

Will the current period of farmland prices relative to capitalized values mirror the 1977 through 1981 period? Will farmland prices decline in the future? "While farmland prices may decline, there are two differences between the current period and 1977 through 1981," Schnitkey said.

"First, much of the decline in capitalized values between 1977 and 1981 was associated with higher interest rates. Interest rates increased from 7.42% in 1977 to 13.92% in 1981. It is doubtful that interest rates will show similar increases in future years." Second, he added, cash rents are expected to increase over the next several years because of robust agricultural returns. Rising cash rents will increase capitalized values causing the difference between farmland prices and capitalized values to narrow.

"However, cash rents need to increase by large margins before farmland prices are only 7% higher than capitalized values, the relationship between 1986 through 2004," he said. "In 2007, the Illinois farmland price is \$4,330, the interest rate is 5%, and the cash rent is \$141 per acre. Given that farmland prices and interest rates do not change, cash rents need to increase by \$62 per acre to \$203 per acre before farmland prices are only 7% higher than capitalized values."

Examining the long-term scenario, Schnitkey noted that some questions exist whether farmland prices can maintain their current levels relative to capitalized values. "Either a new relationship between farmland prices and capitalized values exists where farmland prices exceed capitalized values by a large margin, possibly caused by more urban demand for farmland, or growth in farmland prices must slow so that capitalized values catch up with farmland prices." 

# Research

## Corn Stover Removal Decreases Soil Carbon, Impacts Crop

Candace Pollock, [pollock.58@cfaes.osu.edu](mailto:pollock.58@cfaes.osu.edu), 614-292-3799,  
Source: Humberto Blanco, School of Environment and Natural Resources, [blanco.16@osu.edu](mailto:blanco.16@osu.edu), 614-292-2299.

Removing corn stover for use in ethanol production decreases the amount of carbon stored in the soil, and has an adverse impact on overall soil fertility and crop development, according to Ohio State University research. Humberto Blanco, a research scientist with the School of Environment and Natural Resources within the College of Food, Agricultural, and Environmental Sciences, analyzed the implications of corn stover removal on crop production and soil and environmental quality in long-term no-till fields. He found that as more residue is removed, the greater the loss of soil carbon and crop yields and the more biological processes are compromised.

“There is a linear relationship between corn stover removal and carbon found in the soil. As more residue is removed, the less soil carbon is available,” said Blanco, who is part of the Carbon Management and Sequestration Center at the Ohio Agricultural Research & Development Center. His study, “Soil and crop response to harvesting corn residues for biofuel production,” has just been published in the October 07 edition of *Geoderma: A Global Journal of Soil Science*.

As ethanol demand increases, turning to corn as a source of energy is becoming more common. But little is known about the impacts of residue removal on carbon sequestration, crop production, soil fertility and water quality. “The purpose of the study is to determine the maximum amount of corn stover that we can remove before the process adversely impacts crop yields, and soil and environmental quality,” said Blanco. “The threshold levels of stover removal as biofuel feedstocks have not been well defined in the Corn Belt.”

Over three years, Blanco removed corn stover at different rates (0, 25, 50, 75, and 100 percent) at three OARDC sites in Ohio: the North Appalachian Experimental Watersheds in Coschocton, the Northwestern Agricultural Experiment Station in Hoytville, and the Western Agricultural Experiment Station in South Charleston. He suggests that the impact of corn stover removal is dependent upon soil and terrain characteristics, such as clay content, drainage and slope gradient.

“Corn stover removal had more of an adverse impact in silt-loam soils on undulating terrains than in clay soils on flat terrain,” said Blanco. “Sloping and erosion-prone soils are impacted the greatest, which suggest that those types of land should not be targeted for residue-removal, or just a fraction of stover might be available for removal.” Removal rates of more than 25% from sloping soils significantly reduced soil carbon concentrations, while as much as 75% of corn stover might be removed from clay soils over 3 to 5 years before having a negative impact on soil carbon content. Thus, in sloping lands and erodible soils, only about 25% of corn stover could be removed without affecting soil or environmental quality.

Blanco also found that large-scale removal of corn stover has an adverse impact on earthworm populations and crop yields. Earthworms are important to soil fertility and water and air movement in the soil. “Removing corn residue impacts the presence of earthworms. In cases where the residue was completely removed there were no earthworms to be found. Without earthworms, soil porosity, organic matter content, soil structure and water infiltration were all impacted. These are all necessary for a good soil,” said Blanco. On sloping soils, crop yields suffered as more corn residue was removed from the soil.

“At the start of the season, the percentage of plants germinating was higher from plots without stover, but as the season progressed, things changed. Plants amid residue may have emerged more slowly, but were developing faster as the season progressed and

yielded better at the end,” said Blanco. Removing up to 50 percent of corn residue decreased yields in sloping lands by an average of 1,740 pounds per acre or about 31 bushels per acre.

Blanco suggests that the presence of residue helps to regulate soil temperature and store more water for plant use, resulting in higher crop yields. “The results of the study suggest that rather than relying solely on corn stover as a source for ethanol production, it’s important to seek other energy alternatives,” said Blanco. “Continuous, large-scale residue removal could have a negative long-term impact on carbon and soils.” The study was funded by the Department of Energy. ☞

## AG FACTS

“U.S. farmers are using fertilizer nutrients with the greatest efficiency in history. Between 1980 and 2005, U.S. corn production increased by a whopping 74%. Meanwhile, farmers’ use of nitrogen on corn over this period increased only 3 %, while use of phosphate and potash fell 20 and 24 %, respectively.”

*SOURCE: Conservation Technology Information Center*



“Illinois, on the average, experiences five severe winter storms during the November-April period. These storms may be those with only heavy snow, or with snow and ice mixed, or with ice (glaze) only. Although the average is five per winter, as many as 18 have occurred in one winter (1977-1978) and as few as two (1921-1922).”

*SOURCE: Illinois State Water Survey,*  
<http://www.sws.uiuc.edu/atmos/statecli/winter/coldhard.htm>

## Resources

### **Agricultural Ventilation Fans: Performance and Efficiencies, IL-07**

[www.bess.uiuc.edu](http://www.bess.uiuc.edu).

Published every other year by the University of Illinois, *Agricultural Ventilation Fans* provides unbiased data on more than 200 commercially available ventilation fans. Included are selection criteria, an equipment manufacturer list, airflow and efficiency operating pressures, test results grouped by fan size (manure pit, 8” to 54”) and speeds, and test criteria.

To order a copy contact  
Midwest Planning Service,  
122 Davidson Hall, Iowa  
State University, Ames, IA  
50011-3080,  
[mwps@iastate.edu](mailto:mwps@iastate.edu),  
800-562-3618



### **Managing Cover Crops Profitably, 3rd Edition**

<http://www.sare.org/publications/covercrops/covercrops.pdf>

“Managing Cover Crops Profitably” explores how and why cover crops work and provides all the information needed to build cover crops into any farming operation. Revised and updated in 2007, the 3rd edition includes new chapters on brassicas and mustards, six new farm profiles, as well as a comprehensive chapter on the use of cover crops in conservation tillage systems. Updates throughout are based on more than 100 new literature citations and consultations with cover crop researchers and practitioners around the country. Appendices include seed sources and a listing of cover crop experts.

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# Internet Resources

## Herbicide Formulations and Calculations: Active Ingredient or Acid Equivalent?

<http://weeds.cropsci.uiuc.edu/extension/factsheets/aivsaef.pdf>

Review how to calculate the difference between active ingredient and acid equivalents for herbicides.

## Illinois Initiative for the Development of Entrepreneurs in Agriculture

The IL Initiative for the Development of Entrepreneurs in Agriculture program is designed to provide high quality educational support and technical assistance to farmers and others in, or dependent on, the agriculture sector. Do you have a marketing or value-added idea? For more information about the program contact [Kim Tack](#): Extension Educator, IDEA, Phone: 309-796-0512. IDEA Fact sheets below are available at: <http://web.extension.uiuc.edu/iidea/factsheets.htm>

[Steps To Marketing Your Product](#)

[Preparing A Business Plan](#)

[What Is Entrepreneurship](#)

[What is Relationship Management](#)

[Sourcing Quality Pork: The Retailers Guide](#)

[Sourcing Quality Beef: The Retailers Guide](#)

[What Does It Mean To Be Organic?](#)

[Meat Regulations In Illinois](#)

[Making a Better Meat Product](#)

[Direct Marketing Lamb](#)

[Niche and Ethnic Markets for Goat Meat](#)

## Biology and Management of Common Lambsquarters, GWC11

<http://glyphosateweeds.crops.org/Info/GWC-11.pdf>

This is the fourth part of the *Glyphosate, Weeds, and Crops Series* published by Purdue University in partnership with cooperating universities.

## Agriculture Health Study Update

<http://www.extension.iastate.edu/Publications/EDC363.pdf>

This nation wide study of farm family health continues to reveal concerns and benefits of working on the farm.

## Convergence of Agriculture and Energy

[http://www.cast-science.org/displayProductDetails.as!\\_p?idProduct=145](http://www.cast-science.org/displayProductDetails.as!_p?idProduct=145)

The Council for Agricultural Science and Technology (CAST) has released a CAST Commentary, titled "Convergence of Agriculture and Energy: II. Producing Cellulosic Biomass for Biofuels". The report covers these questions: What issues should be evaluated in a realistic appraisal of current and future feedstock supplies? What production methods should be used to maximize agronomic systems? What characteristics should distinguish crops developed specifically for production of biomass? What improvements in the feedstock supply system will most likely lead to enhanced conversion, and in turn, create revenue? and What areas should be emphasized in educating the public on the comprehensive principles of biomass-to-ethanol production?

## About the Ag Update Newsletter

The Ag Update Newsletter is a bi-monthly newsletter providing education and research support to the agricultural industry. Current and past issues may be found at the following website <http://www.urbanext.uiuc.edu/agupdate/index.html>

Contact your county Extension office and request to be put on their agricultural mailing list to receive the local agricultural newsletter and notices about upcoming agricultural events near you. To find your counties location, phone and website go to <http://web.aces.uiuc.edu/ve/>

For further information about this newsletter, please contact:

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