



Ag Decision Maker

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Are more livestock in Iowa's future?

by Bruce A. Babcock, Center for Agricultural and Rural Development,
515-294-6785, babcock@iastate.edu

Soaring energy prices, continued strong hog and cattle prices, and consecutive bumper crops have created a unique economic climate for Iowa agriculture. Margins for livestock producers are at record high levels thanks to cheap feed and strong product demand. And despite less-than-optimal growing conditions, Iowa's corn crop will be the second largest ever and soybean yields look to rebound for a second straight year, reversing a series of disappointing yield years. On the downside, high energy prices translate into higher crop production costs because of higher fertilizer, chemical, diesel, and propane prices. And bumper crops mean lower corn and soybean prices.

There is a chance that the current combination of factors will be with us for a while.

Continued world economic growth will likely sustain high energy prices. There seems to be growing evidence that trend yields for corn and soybeans will continue to increase at a robust rate. And if a meaningful Doha Round agreement in the World Trade Organization can be achieved, we should expect increased demand for U.S. beef, pork, and poultry exports.

Such an agreement will only take place if the United States and Europe agree to reduce price support payments and export subsidies. In the United States, such payments overwhelming flow to crop producers, who consequently will bear the brunt of any cuts. Depending on the level of cuts, the future under a new agreement may look much brighter for U.S. livestock producers than for most crop producers.

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Handbook updates

For those of you subscribing to the handbook, the following updates are included.

Cost of Storing Grain
– A2-33 (2 pages)

Options Tools to Reduce Price Risk – A2-67 (6 pages)

Options Tool to Enhance Price – A2-68 (3 pages)

Grain Price Options Fence
– A2-69 (3 pages)

Interpreting Financial Performance Measures – C3-56 (5 pages)

Please add these files to your handbook and remove the out-of-date material.

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Expansion of activities that add value to corn and soybeans is a popular prescription for enhancing crop prices and rural economies. The current favorite value-adding activity is to convert corn into ethanol and soybean oil into biodiesel. And there is growing interest in the conversion of corn into polylactic acid (PLA), a biodegradable synthetic polymer that can be used to make containers, biomedical supplies, synthetic fiber and many other items.

One potential drawback of building a large demand base on new uses of corn is that technology breakthroughs or policy shifts can quickly drop demand to zero. For example, either a drop in ethanol subsidies or a drop in the ethanol import tariff would greatly decrease ethanol demand. A breakthrough in cellulose-to-ethanol technologies would have the same net effect on corn markets.

The original value-adding activity that has not been targeted for expansion in Iowa or other Corn Belt states is livestock production. The reluctance to embrace this proven value-adding activity stems from how the introduction of new technologies favored larger-scale operations. However, current economic conditions are increasing the relative profitability of moving more livestock production into Corn Belt states. Might these market incentives to bring more livestock into Iowa override other concerns, thereby expanding local demand for Iowa's corn and soybeans?

Separation of crops and livestock production

Not long ago, the fortunes of farmers were tied more to the price of livestock than to the price of corn and soybeans because nearly every farm marketed a significant portion of its crops in the form of livestock. And producers had protection against high fertilizer prices because of the availability of on-farm manure nutrients. But now most crop farmers don't own livestock and most livestock producers don't grow crops.

This change is the result of many factors. The size of minimum-cost livestock production operations has increased tremendously. Relatively small cattle feeding operations that characterized Corn Belt agriculture were largely replaced by huge operations in the High Plains of Kansas, Oklahoma, and Texas. Separation of sows from finishing hogs in the late 1980s meant better disease control, which reduced the risk for large-scale feeding and feeder-pig operations. Lower per-unit costs of larger, specialized units led to consolidation.

Many crop farmers were happy to let the livestock go. New equipment and crop production methods have increased the per-bushel cost advantage of larger operations. And larger operations are easier to manage without the worry of livestock. Expanded crop insurance options and generous commodity programs greatly reduced the risk to farmers who moved to crop specialization. These financial tools removed most of the advantage that diversified farmers enjoyed in the past.

A new competitive environment for corn belt agriculture?

Of course, nobody can reliably predict the future. But if certain trends continue, competitive forces will emerge that could transform Corn Belt agriculture. High diesel prices create an advantage for those producers who can more easily adopt conservation tillage and who can market their crops locally. High natural gas prices create an advantage for those producers who can use manure instead of commercial fertilizer.

At current prices, per-acre commercial fertilizer costs in Iowa range from a low of around \$40 for a corn-soybean rotation to a high of \$72 for a farmer who plants continuous corn. Though a farmer who uses manure has a large cost advantage over a farmer who does not, it is doubtful that large numbers of crop farmers will start producing livestock. But what if crop farmers allow livestock producers to site production facilities

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on their land? This gives the crop farmer inexpensive access to manure and it gives the livestock producer a place to raise livestock.

Table 1 shows the number of animal spaces it takes to generate enough manure nutrients to meet crop requirements per section of land under alternative rotations. Each space is assumed to be filled 2.45 times for finishing hogs and 2 times for fed cattle. As shown, two to three standard-size hog finishing houses are adequate to supply the manure requirements in each situation except under a nitrogen standard with continu-

rus standard, if 430 sections were fertilized by hogs and 230 sections were fertilized by cattle, then 2.5 million hogs and 264,000 fed cattle could fertilize all of Sioux County's corn and soybean acres. In 2003, Sioux County marketed 2.5 million hogs and 228,000 fed cattle, so even Sioux County must import some fertilizer. If full credit were given to these nutrients, then at today's prices, the manure would generate approximately \$17 million of cost savings to Sioux County crop farmers.

Now consider the feasibility of fertilizing all Iowa corn and soybeans with manure. Iowa has about 36,000 sections of corn and soybeans. If they were all planted in a corn-corn-soybean rotation under a phosphorus standard, then it would take 104 million fed hogs and 21.1 million fed cattle to generate adequate nutrients. Total U.S. marketings in 2004 were 103.4 million hogs and 26 million beef cattle. If Iowa crop farmers used almost all the phosphorus generated by all the fed hogs and fed cattle in the United States, they would still have to import nitrogen fertilizer. Also, it is interesting to note that in a corn-corn-soybean rotation, Iowa would produce almost enough corn and soybeans to finish all U.S. hogs and beef cattle.

Table 1. Number of animal spaces needed to generate adequate manure to fertilize 640 acres.

Crop Rotation	Finishing Hogs	Fed Cattle
Continuous Corn		
N-standard	5,734	1,213
P-standard	2,731	651
Corn-Corn-Beans		
N-standard	3,186	674
P-standard	2,412	575
Corn-Beans		
N-standard	1,911	404
P-standard	2,275	542

ous corn, which would require perhaps five. For cattle feeding operations, between 400 and 700 spaces are adequate except for continuous corn under a nitrogen standard.

Unless the rotation is corn-soybeans, fertilizing to a nitrogen standard results in over-application of phosphorus. Given the likelihood of relatively stronger demand growth for corn than soybeans, it seems reasonable to expect many farmers to move to a corn-corn-soybean rotation. With this rotation and following a phosphorus standard, how realistic is it to fertilizer an entire county's crops from manure?

Consider Sioux County, which has approximately 660 sections of corn and soybeans planted in a corn-corn-soybean rotation. Under a phospho-

Such a large-scale movement of livestock is not likely to occur, if for no other reason than that many rural Iowans express opposition to large-scale livestock production in the state. But the current situation in Sioux County suggests that if enough of a county's residents have a financial stake in livestock production, then the tolerance of the residents for livestock is dramatically increased. Might it be that livestock odors are less objectionable if local crop farmers can save \$50 an acre in production costs?

What about ethanol?

Of course, if Iowa were to attract more livestock, that would mean less corn left over to fuel Iowa's growing ethanol industry. Feeding enough hogs and beef cattle to generate adequate manure for

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Iowa corn and soybeans under a phosphorus standard leaves about 10 bushels per acre of corn for each acre in rotation. Thus, 23 million acres of manure-fertilized corn and soybean land would leave only 230 million bushels for all other uses. If in the future we can consistently generate three gallons of ethanol for each bushel of corn, then the 230 million bushels would generate 690 million gallons of ethanol. But Iowa already has the capacity to produce about 955 million gallons and will have 1.62 billion gallons of capacity soon, which would require 540 million bushels of corn. Where would Iowa get the 310 million bushels of corn?

Each bushel of corn fed through an ethanol plant generates about 17 pounds of DDGs (dried distillers grains and solubles). If DDGs displace energy from corn on a pound-for-pound basis, then Iowa would only need to import about 150 million bushels of corn to feed the 1.62 billion gallons of ethanol capacity.

Iowa's future competitive advantages

There are clear economic advantages to raising livestock and locating biofuel plants near crops. Efficiencies are gained from reduced transportation costs because it is less expensive to transport meat and fuel than feed. Also, manure nutrients can be a valuable fertilizer substitute rather than a waste by-product if livestock are raised in nutrient-importing regions. And ideally, by-products from biofuels production can be integrated directly into feed rations of nearby livestock rather than having to go through costly drying procedures in preparation for shipment to distant livestock.

The magnitude of these efficiency gains depends on transportation and energy costs. The current

high transportation costs are creating an incentive for livestock and biofuels production to move closer to where feed grains and oilseeds are grown. High fertilizer prices are creating an incentive for crop producers to welcome livestock producers onto their land. Thus, high energy prices underscore the strength of Iowa and other Corn Belt states as the location where livestock and biofuels production should take place.

Whether we see a resurgence of interest in Iowa as a livestock-friendly place is more a political than an economic question. The economic incentives exist and are growing. But there also are regulatory hurdles, government indifference, and outright public opposition to expanded livestock and milk production. Iowa is not increasing its cattle population, its hog numbers are only slowly increasing, and there is no sign that milk production is reversing its long, slow decline. Only the egg-laying industry has moved rapidly in recent years to exploit the economic advantages of locating in Iowa.

States and regions that look to the future and adopt policies and programs that emphasize their competitive advantages will tend to prosper. Iowans need to assess the range of possibilities that agriculture offers in terms of jobs, income growth, and population. Should policies be adopted that emphasize corn and soybean exports to other states and countries, continued reliance on government crop and biofuels subsidies, and continued indifference to livestock production? Or should Iowa proactively adopt a livestock-friendly research and regulatory environment that determines how best to maximize the value of manure while minimizing the risks of water contamination from runoff and spills and controlling damage from odors?

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Winter farm management programs

by Ann M. Holste, Extension Program Specialist, 515-294-4197, aholste@iastate.edu

Iowa State University Extension farm management specialists provide several different programs over the winter months. Descriptions are listed here for a few of these programs. Dates, contact information, and Web site addresses for these programs also are listed on the ISU Extension calendar: www.extension.iastate.edu/calendar/. A link to this calendar is available from the Ag Decision Maker home page.

Agricultural Management e-School

The mission of the Agricultural Management e-School (AMES) is to extend management education to agricultural producers, educators and service providers. AMES is a series of in-depth self-study courses and resource centers that complement traditional meetings, bulletins and newsletters.

Courses currently available:

- Advanced Grain Marketing
- Financial Decision Making
- Farm Leasing Arrangements
- Farm Land Ownership
- Farm Machinery Economics
- Lean Hog Marketing
- Quality Management Systems
- Strategic Management for Farm Families

AMES courses are available at any time of day all year round. Specific course information and on-line registration is available at: www.extension.iastate.edu/ames/, or contact Tim Eggers at teggere@iastate.edu.

Annie's Project

Annie's Project was created to empower farm women to be better business partners through networks and by managing and organizing critical information. The program includes a series of six sessions that cover various farm management topics ranging from human resources and time management to retirement planning. The final meeting topic is determined by the class.

Annie's Project instructors have been trained in many states. States that currently have Annie's Project sites in planning stages are Iowa, Illinois, Missouri, Nebraska, Indiana, Wisconsin, Minnesota, Ohio and North Dakota. If there is not a site near you, ask the contact person for your state to add you to their list of interested clients. In Iowa, several locations are available over the winter months. To find out if Annie's Project meetings are being held near you, visit: www.extension.iastate.edu/annie/, or contact Tim Eggers at teggere@iastate.edu.

Cow-Calf Risk Strategies

This program features how cow-calf and stocker operators can manage risk associated with marketing. Learn how to develop a marketing plan for feeder cattle and cows; understand price patterns and forecasts; and how to use futures, options and revenue protection.

A state-wide web cast is planned for January 9th and two-day workshops around Iowa begin shortly after. Specific dates, contact information, and registration forms for the workshops are available on the Web site: www.iowabeefcenter.org/content/CowCalfRiskStrategiesRMA.htm.

Winning the Game

The ISU farm management specialists in cooperation with Farm Bureau's education department conduct "Winning the Game" Marketing Workshops throughout the state. Pre-harvest cash grain marketing strategies were the main features of these workshops in 2004. There are three different options for the coming season. These include Post-harvest Marketing, Dairy Marketing, and Launching a Marketing Plan. Local lenders and grain elevators assist with financial support for these meetings.

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The key elements of this meeting include:

- An in-depth examination of crop revenue insurance
- Laying out a marketing plan
- An interactive market simulation program

Session locations and dates are available from Iowa Farm Bureau at: www.iowafarmbureau.com/programs/commodity/farmmanagement/education.aspx. Register through county Farm Bureau offices or contact Ed Kordick at ekordick@ifbf.org.

Women in Denim

This conference will target women who are involved in agriculture, whether it be managing their own farming operation, as business partners, impacted by the farm economy, or just wanting to learn more about this industry of agriculture.

This conference is dedicated to:

- Providing an opportunity for women to learn about agricultural opportunities
- Providing an opportunity for learning about agricultural financial management
- Providing opportunities for networking with others

- Providing opportunities for “Fun and Enthusiasm for Agriculture”

The second annual conference will be held on Jan. 20-21, 2006 at Buena Vista University in Storm Lake, Iowa. Last year there were more than 220 participants. For 2006, there is room for 300, with 35 workshops available to choose from. An early-bird registration fee of \$25 is available until December 15, after that the fee is \$40. To sign up for available vendor space or other information, contact Rhonda Christensen at rchris@iastate.edu. Registration forms and more information can be found on-line at: www.womenindenim.com/.

Updates, continued from page 1

Internet updates

The following updates have been added to www.extension.iastate.edu/agdm.

The Dos and Don'ts of Sealed Bid Auctions – C2-81 (2 pages)

Decision Tools

Delayed Planting Evaluator – Use this decision tool to evaluate delayed planting, replanting and prevented planting alternatives.

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