Biorenewable Policy Analysis

Center for Agricultural and Rural Development

www.card.iastate.edu
CARD Research Areas

- Agricultural Commodity Policy
- Agricultural Trade Policy
- Food and Nutrition Policy
- Resource and Environmental Policy
- Agricultural Risk Management Policy
- Biorenewables Policy
  - Effective July 1
Immediate Areas to be Addressed

• Outlook for biofuels and inputs to biofuels production
  – Supply, demand, and price projections for ethanol (biodiesel in progress), and all major crops
• Impacts on local basis for corn and soybeans
• Analysis of policy changes on production and price of biofuels, corn and soybeans
• Impact of biofuels growth on crop price volatility
• Analysis of potential for value to be captured by emergence of carbon markets
• Impact of biofuels growth on mix and location of livestock
CARD International Ethanol Model

• Examines and projects ethanol production, usage, prices, and trade

• Covers Brazil, China, European Union, Japan, and United States

• Incorporates government policy (U.S. energy act, EU renewable fuels directive, Brazilian fuel mandates, etc.)
CARD Basis Map Project

- Posting daily basis maps for corn and soybeans
- Both old and new crop basis are shown
- Currently done for Iowa, will be expanded to the upper Midwest soon

- [http://www.card.iastate.edu/ag_risk_tools/basis_maps/](http://www.card.iastate.edu/ag_risk_tools/basis_maps/)
Start with a Regional-level Map

June 8, 2006 New Corn Basis
Basis Calculated from CBOT Dec Futures Prices $2.71 per bushel
Move to State-level

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Legend
(Cents per Bushel)
- Below -80
-80 - -75
-75 - -70
-70 - -65
-65 - -60
-60 - -55
-55 - -50
-50 - -45
-45 - -40
-40 - -35
-35 - -30
-30 - -25
-25 - -20
-20 - -15
-15 - -10
Above -10

Macon County
Continue to County Average Basis

Ave. Basis Patterns for Macon County, Illinois

Cents per Bushel

Corn Basis

Soy Basis
Other Ethanol Research Questions

• Exploring synergies between ethanol and livestock production

• Modeling ethanol costs and returns (margin of ethanol plus DDG less cost of corn and natural gas)

• Evaluating ethanol’s impact on crop and livestock production
Ethanol – Livestock Synergies

Figure 1. Possible synergies of ethanol and livestock co-production
Source: Iowa Ag Review, Spring 2006, Vol. 12 No. 2
A 50 Million Gallon Ethanol Plant

• Uses roughly 18.5 million bushels of corn
  – In Iowa, corn from 116,000 acres

• Produces 315 million pounds of distillers grains
  – This could feed approx. 60,000 dairy cattle

• Utilizes natural gas in plant operations
  – Manure from 60,000 dairy cattle could produce enough methane to meet 25 percent of the ethanol plant’s needs
Agricultural Evolution

- Will ethanol drive cropping patterns (more corn, less soybeans and wheat)?
- What will be the ultimate impact of ethanol on livestock production?
  - Feeding corn versus distillers grains
  - Shifting livestock species (more cattle, fewer hogs and poultry?)
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Projected U.S. Corn Yield per Planted Acre through 2015

The graph shows the projected U.S. corn yield per planted acre from 1975 through 2015. The yield is projected to increase from 40 bu/ac in 1975 to 152 bu/ac in 2015. The trend line indicates a steady growth in yield over the years.
Cumulative Distribution of U.S. Corn Production in 2015 with 85 Million Planted Acres
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