

**STATEMENT OF CHUCK CONNER
DEPUTY SECRETARY,
U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE HOUSE AGRICULTURE SUBCOMMITTEE ON
LIVESTOCK, DAIRY, and POULTRY
March 8, 2007**

Mr. Chairman, thank you for the invitation to discuss the impacts of biofuels on livestock markets. Dr. Joe Glauber, USDA Deputy Chief Economist is with me today, and we will provide a brief status report on the rapid growth in biofuels, discuss the impacts of this growth on crop and livestock markets and conclude with a summary of the Administration's 2007 farm bill proposals that support research and investment in biofuels.

Current Market for Biofuels

The rapid growth of biofuels production has stimulated tremendous enthusiasm about the prospects for ethanol and biodiesel making substantial inroads in reducing the demand for imported oil. Substantial new investment in biofuel production capacity is creating growth in rural incomes and employment. The rapid growth, providing the promise of continued substantial environmental, economic, and energy diversification benefits, is also generating changes in farm management, production, and related industries across the agricultural sector.

Ethanol. In 2000, about 1.6 billion gallons of ethanol were produced in the United States, with ethanol utilizing about 6 percent of the 2000 corn harvest. By 2006, an estimated 5 billion gallons of ethanol were produced, utilizing about 20 percent of the 2006 corn harvest. As of February 12, data gathered by the Renewable Fuels Association indicate there are now 113 ethanol plants with total production capacity of 5.6 billion gallons and another 78 ethanol plants under construction and another 7 facilities under expansion. When construction and expansion of these facilities are completed, ethanol capacity in the United States will be 11.8 billion gallons per year, which is likely to occur during 2008-09.

The furious pace of construction in the ethanol industry over the past year has led USDA to substantially revise upward its projections of ethanol production. A year ago, USDA released long-term agricultural projections to 2015. At that time, annual ethanol production was projected to reach about 7.5 billion gallons by 2010/11 and account for about 22 percent of total U.S. corn production. In our latest long-term agricultural projects, released February 14, 2007, USDA now projects that by 2010/11 about 4 billion bushels of corn will be used to produce 11.5 billion gallons of ethanol, accounting for 30 percent of U.S. corn production.

Biodiesel. While ethanol production has received much of the recent press attention, biodiesel production has grown even faster. Biodiesel production increased from 500,000 gallons in 1999 to 28 million gallons in 2004 and to 91 million gallons in 2005. USDA estimates biodiesel production increased to 245 million gallons in 2006, a 170-percent increase year over year and a 490-fold increase since 1999. Our latest long-term projections indicate that by 2010/11 we will be using about 5 billion pounds of soybean oil to produce about 700 million gallons of biodiesel per year, accounting for about 23 percent of U.S. soybean oil production (Figure 1).

As of January 2007, the National Biodiesel Board indicated there were 105 commercial U.S. biodiesel plants. The annual production capacity of these plants ranges from 500,000 gallons to 50 million gallons, with total capacity of 864 million gallons per year. The National Biodiesel Board reports that there were 77 new plants under construction and 8 plants that were expanding capacity as of January 2007. The total annual capacity of these new plants and expansions, if realized, would increase the capacity of the existing biodiesel industry by 1.7 billion gallons per year.

Near-Term Market Impacts of Biofuels

Crop Markets. The main story in the 2006/07 crop markets has been the increase in corn used in ethanol and the rise in corn and other crop prices. With wheat production and thus wheat feed supplies down this year, the strong demand for ethanol has combined with a slightly reduced corn harvest last fall and a large increase in demand for corn from overseas to push corn prices to near record levels. The overseas demand has partly been driven by the drought in Australia and unexpectedly low grain yields in parts of Europe. As supply from those markets is restored, this should have a moderating influence on corn prices. For the 2006/07 marketing year, with carryover stocks expected to drop sharply, the U.S. season-average corn price is forecast at \$3.20 per bushel, only slightly below the record-high \$3.24 per bushel set in 1995/96. The high corn prices have also raised the prices of other grains and oilseeds.

For 2007/08, the recently released USDA long-term projections estimate that 3.2 billion bushels of corn, or 26 percent of total U.S. corn production, will be used for ethanol. This spring, the number of acres planted to corn is projected to increase by 11 percent and 2007 corn production is projected to increase by 16 percent and corn exports are expected to fall by 14 percent. USDA updated these projections at its annual Agricultural Outlook Forum on March 1 and 2; the first survey of farmers planting intentions for 2007 will be released on March 30.

Despite the corn production increase, we anticipate that the corn market will remain relatively tight during the upcoming 2007/08 marketing year. The corn ending stocks-to-use ratio could decline to 5 percent by the end of the 2007/08 season. Consequently, the farm price for corn is forecast to average \$3.60 per bushel for the 2007/08 marketing year, and futures prices for delivery between now and 2010 are consistently above \$3.50 per bushel.

The majority of the increase in corn acres is expected to come from reduced soybean plantings. We are projecting a 7-percent decline in soybean planted acres for 2007/08 and, coupled with slightly lower soybean yields due to an expected return to trend yields, a 10-percent

decline in soybean production. Lower production is forecast to lead to an increase in farm level prices for soybeans from \$6.20 per bushel in 2006/07 to \$7.10 per bushel in 2007/08. Higher soybean prices are also expected to lead to a 7-percent increase in soybean oil prices and a 9-percent increase in soybean meal prices.

Tight market conditions for corn and soybeans will continue to support prices for other feed grains. With respect to food grains, a 20-percent increase in wheat production in 2007/08 is expected to limit the increase in the farm price of wheat to about 1-2 percent.

Livestock Markets. Turning to near-term prospects for livestock and poultry, the expansion of U.S. biofuels is affecting livestock markets through higher feed costs, as just described. However, coproduct feeds from ethanol plants are also augmenting the feed supply.

Role of DDGs. Distillers dried grains (DDGs), a coproduct of ethanol production, may substitute for corn in some livestock rations, particularly for beef and dairy cattle. Each bushel of corn used to produce ethanol yields about 17.5 pounds of DDGs which substitute for corn and other feed ingredients. USDA's long-term projections assume that 75 percent of DDGs are used in domestic livestock sector feeding. Exports of DDGS are assumed to account for 10 percent of production. The remaining 15 percent of DDGS production is assumed to go to other nonfeed, domestic uses. Of the portion of distillers grains used for domestic livestock feeding, 80 percent is assumed to be used for beef cattle, 10 percent for dairy, and 5 percent each for poultry and hogs. These assumptions reflect the relatively easier use of DDGs by ruminants compared to monogastric animals. The high use by beef cattle also reflects the ability of those animals to use the wet form of distillers grains.

Based on the animal nutrition studies listed below, distillers grains on a dry matter basis are assumed to replace corn in beef cattle rations pound for pound; dairy rations, 1 pound of distillers grains for 0.45 pounds of corn; hog rations, 1 pound distillers grains for 0.85 pounds of

corn; and poultry rations, 1 pound distillers grains for 0.55 pounds of corn. For each animal type, other ration components are adjusted to rebalance the ration. Protein adjustments affect soybean meal feeding for hogs, poultry, and dairy cattle. Most distillers grains used for cattle feeding displace urea as the protein source rather than soybean meal. Using these assumptions, each pound of DDGs produced from the conversion of corn into ethanol reduces corn used in domestic livestock feed rations by 0.7 pounds. Since beef cattle are assumed to be the largest users of distillers grains, only a small offset is expected in soybean meal use. The divergent effects of ethanol expansion on the different species of livestock and in different regions of the country could result in structural changes in some parts of the U.S. livestock sector.

Overview of current livestock markets. Although livestock producers will face higher feed costs as increasing amounts of corn are converted into ethanol, growth in domestic consumption and exports are expected to boost livestock receipts to a record \$125.2 billion in 2007. U.S. red meat and poultry exports are forecast to reach a record high in 2007. Pork exports are forecast to lead the way, increasing for the 17th consecutive year and approach 3.2 billion pounds carcass weight or 14.5 percent of production. After depressed sales in early 2006, poultry sales increased as foreign concerns about Avian Influenza abated and U.S. broiler meat prices declined. Broiler exports are projected increase to 5.4 billion pounds in 2007, but fall short of the record 5.6 billion pounds exported in 2001. Beef exports are expected to increase with the gradual expansion of exports to Japan and Korea. However, Korea's import restrictions and Japan's age limits on imported beef from the United States continue to limit growth. Although total beef exports are expected to increase 25 percent to 1.4 billion pounds in 2007, the level of exports will remain below the 2003 pre-BSE level of 2.5 billion pounds.

Total U.S. production of meat and poultry is forecast to be record-high in calendar year 2007, which is expected to lead to slightly lower prices for hogs. In contrast, tighter domestic

supplies of broiler meat could support higher broiler prices and lead to stable prices for fed cattle. Feeder cattle prices will be lower, reflecting the increase in feed costs. With potentially weaker hog prices, lower feeder cattle prices, stable fed cattle prices, and somewhat modest gains in broiler prices, changes in feed prices will play an important role in producer production decisions in 2007 and 2008.

Beef. Beef production is currently forecast to increase 2 percent in 2007 as both slaughter numbers and carcass weights increase. Weight gains per animal will likely be smaller than in previous years due to higher feed prices. Steer prices will likely remain near last year's \$85.41 per cwt. Poor forage conditions resulted in higher cow slaughter during 2006 as many producers lacked sufficient forage resources to support their herds. Herd expansion is expected to be slow as the January 2007 *Cattle* report indicated a small calf crop, and producers indicated they intend to retain 0.5 percent fewer heifers for addition to the beef breeding herd.

Pork. Pork production in 2007 is forecast to expand 3 percent, marking the 7th year of expansion, as producers continue to respond to favorable returns over the last several years. Given farrowing intentions reported in the most recent *Hogs and Pigs* report, inventories will continue to expand, albeit at slower rates. The increase in 2007 production primarily will reflect increased slaughter while weight gains will be limited as producers respond to higher feed prices. Hog prices are expected to reflect the increased production, declining from 2006's \$47.26 per hundredweight to \$45 per hundredweight.

Broilers. Broiler producers have endured several periods of poor returns due to relatively low broiler prices in 2005 and 2006 and higher feed costs. Consequently, producers reduced chicks placed in 2006, resulting in the lowest rate of production growth since the early 1980s. Production growth in 2007 is expected to be even slower. With tighter broiler meat supplies,

market prices are expected to average 71 cents per pound in 2007, up from 64.4 cents per pound in 2006.

Dairy. Milk producers are expected to respond to higher feed prices and lower 2006 milk prices by modestly reducing cow inventories and as a result, the rate of growth of milk production in 2007 will be slower than in 2006. Production in 2006 increased 2.7 percent and the all-milk price declined to \$12.90 per hundredweight from \$15.14 per hundredweight in 2005. Output per cow in 2006 was affected by abnormally high temperatures in much of the country during the summer, but growth is expected to follow a more normal pattern in 2007. Producers are expected to reduce cow inventories during the year as feed costs likely will increase more rapidly than milk prices through much of 2007. Demand prospects for dairy products, both domestically and for export, are stable for 2007. Commercial exports of nonfat dry milk and whey are likely to remain strong, reflecting limited supplies from competing exporters. Domestic demand for cheese and butter is also likely to remain firm, thus, prices of cheese, butter, nonfat dry milk, and whey are all forecast higher in 2007 and will support the all-milk price at \$14.70 per hundredweight. With product prices above support, no CCC net removals are forecast.

Longer-Term Market Impacts of Biofuels

Biofuels are not the only factor affecting agricultural markets, although they have certainly become a major force in shaping the markets for corn and soybeans. We are now projecting corn prices at over \$3 per bushel for several years into the future compared with about \$2 per bushel in 2004/05 and 2005/06 (Table 1). These are historically high corn prices (Figure 2). We are also projecting that almost 83 million acres of corn will be harvested for grain in 2010/11—6 million acres more than we projected for 2010/11 in last year's long-term baseline

projections. For comparison, the last time corn harvested acres reached 83 million was in 1945 (Figure 3).

With respect to biodiesel, we also expect to see significant growth. For 2006/07, biodiesel is expected to account for 2.6 billion pounds of soybean oil or 13 percent of total soybean oil use. In our most recent long-term agricultural projections, we expect biodiesel production to increase to about 700 million gallons per year and use about 24 percent of soybean oil production in 2010/11 (assuming continuation of the biodiesel tax credit). This is less than the capacity currently estimated by the National Biodiesel Board. In our view, higher soybean oil prices will slow biodiesel expansion and reduce capacity utilization. Due mostly to switching acres from soybeans to corn, we now project soybean prices to exceed last year's baseline projection by \$1.05 per bushel in 2010/11 and soybean oil prices to be about \$0.07 per pound higher in 2010/11.

The rapid growth in biofuels has generated many questions about its sustainability and the current and potential impacts of this evolving industry on livestock markets and consumers. In the short-term, livestock and poultry profitability declines under higher corn feeding costs. For example for hogs, which are heavily dependent on corn and limited in the level of DDGs that can be put into feeding rations, and a \$1 per bushel increase in the price of corn would raise the cost of producing hogs by about \$4 per cwt of weight gain. However, as markets adjust and supplies are reduced, some of those cost increases are passed to consumers.

The prospective longer term adjustment in the livestock sector is graphically portrayed in Figures 4 through 6, which show projected production and returns for beef, pork, and poultry. The adjustment for beef, pork, and poultry is similar. Each production sector experiences a decline in returns as cost increases due to higher feed prices are not immediately offset by higher livestock product prices. Falling returns eventually lead to less production and higher prices.

To get a sense of how longer term livestock market prospects have changed compared with conditions a year ago, we can compare our current projections released in February 2007 with those released in February 2006. It is important to emphasize that not all of the difference in projections is due to biofuels. Higher biofuel production is a major factor, however, the change in projections also reflects global trade developments, a substantially higher projected price of crude oil compared with a year ago, and changes in consumer preferences. With that caution in mind, we now project broiler, beef, and pork production to be 9, 5, and 1 percent lower in 2015, compared to our long-term projections for 2015 made in February 2006. With less production, we also see farm-gate livestock prices anywhere from 7 to 14 percent higher in 2015 when compared to our February 2006 projections, and the Consumer Price Index for pork, poultry, and beef and veal averaging 1 to 1.5 percentage points higher over the next 8 years. The CPI for food would average 0.3 percentage points higher. These higher prices lead to more normal livestock sector returns and eventually to a rebound in production.

Biofuels is Global

The United States is not alone in its attempt to replace petroleum with biofuels. In 2005, global ethanol production approached 10 billion gallons, with the United States and Brazil, by far, the dominant ethanol producers. The United States and Brazil each produced over 4 billion gallons of ethanol in 2005, accounting for almost 90 percent of global production. While most ethanol production is consumed domestically, the United States also imports ethanol. In 2006, the United States imported 653 million gallons of ethanol, with Brazil accounting for two-thirds of our imports.

With respect to biodiesel, the European Union (EU) is by far the biggest producer of biodiesel in the world because the majority of the cars in the EU are diesel cars. In 2005, the EU produced about 800 million gallons of biodiesel and the European Commission set a goal that by the end of 2005, biofuels should account for 2 percent of the energy used in transportation with the target growing to 5.75 percent by 2010. At the end of 2005, the actual share energy used in transportation from biofuels was 1.4 percent. The European Council has now suggested a new goal of 8 percent by 2015.

Currently less than 2 percent of the European farmland is cultivated with crops for biofuel production. To reach the 5.75 percent target it would take approximately 15-17 percent of the total arable land in the EU. The European Commission considers such huge amount of land for producing biofuel crops undesirable and proposes to produce half the biofuel from domestically grown crops and import the other half.

Other countries are requiring the use of biofuels or considering increasing their capacity. For example:

- Indonesia. On January 9, 2007, 67 agreements for biofuel development were signed with an estimated investment value of \$12.4 billion. If current targets are met, almost 2.5

million tons of biofuels (approximately 800 million gallons), mostly biodiesel, would be produced in Indonesia during 2008. This would represent a large increase over current production, which is around 300,000 tons (approximately 100 million gallons).

- Philippines. On January 11, 2007, the President of the Philippines signed into law a biofuels mandate that requires the use of gasoline with a blend of 5 percent bio-ethanol within two years. The mix would be increased to 10 percent within four years.
- Canada. In early 2006, the government mandated that by 2010, biofuels would account for 5 percent of all fuels consumed in the transportation sector. If this mandate is to be met, annual ethanol and biodiesel must increase to about 800 million gallons by 2010; a doubling of current biofuels capacity.

The Administration's 2007 Farm Bill Proposal

The 2007 farm bill provides an opportunity to address the implications of expanding renewable energy to support the President's goal of reducing gasoline consumption by 20 percent in 10 years. The 2007 farm bill proposal is a comprehensive program that augments efforts by the Department of Energy in that it promotes research and development (R&D), feedstock availability, and cellulosic ethanol production.

With respect to R&D, the 2007 farm bill proposal would create an Agricultural Bioenergy and Biobased Products Research Initiative. This initiative would be funded at \$500 million over 10 years and would focus research and development (R&D) on improving biomass production and sustainability and improving biomass conversion in biorefineries. A second proposal would build on the Biomass Research and Development Act and provide \$150 million over 10 years to increase the annual competitive grant funding for biomass research, focusing on cellulosic ethanol.

To insure ethanol producers have access to a reliable feedstock, the 2007 farm bill proposal would provide the authority for a Cellulosic Bioenergy Program. The Cellulosic Bioenergy Program would be funded at \$100 million and would share the cost of biomass feedstocks used by cellulosic ethanol producers. In addition, the 2007 farm bill proposes a Biomass Reserve Program (BRP) operated under the Conservation Reserve Program (CRP). The BRP would establish clear requirements that biomass could only be harvested with sufficient environmental protections, and rental payments would be limited to income forgone or costs incurred by the participant to meet conservation requirements in those years biomass was harvested for energy production.

The 2007 farm bill proposal would also create a Forest Wood-to-Energy Program. This program would be funded at \$150 million over 10 years and its goal is to accelerate development and use of new technologies to more productively utilize low-value woody biomass resources, offsetting the demand for fossil fuels and improving the forest health.

Lastly, the 2007 farm bill proposal recommends expanding the 9006 loan guarantee limits for cellulosic ethanol projects to \$100 million with additional authority to exempt these cellulosic projects from the cap on guarantee loan fees and investing \$210 million to support \$2.17 billion in guaranteed loans for the construction of cellulosic ethanol facilities over 10 years.

Conclusions

There are many uncertainties in how biofuels and agricultural markets will unfold in the coming years, including global economic growth; the prices of crude oil, gasoline, and ethanol; the rates at which cellulosic ethanol and other alternative energy are commercialized; the emergence of technologies that alter the use of ethanol co-product feeds; and the increases in yields of corn, soybeans and other crops, to name several.

Our view of how markets may unfold makes a range of assumptions about these uncertain factors, which, of course could change. One thing seems clear: the growth of biofuels in the United States has the potential to greatly reduce reliance on imported oil, and in doing so, transform U.S. agriculture. This powerful new source of demand for crops will shrink the long-term excess production capacity. The result is sharp increases in market returns for energy crop producers, more crop production, more investment in rural America in biofuel refineries, greater rural economic activity in crop and diversity in biofuel production regions, and sharply reduced taxpayer spending on farm programs. In the near term, consumers are facing higher food prices and livestock producers are facing higher feed costs and reduced returns and there will be a period of adjustment. However, increased supplies of co-product feeds and strong consumer demand for livestock products will help cushion the adjustment. In addition, as we progress down the road to commercial-scale cellulosic ethanol, feed prices should moderate as corn yields rise faster than the annual increases in demand for corn for ethanol, as ethanol production stabilizes.

Mr. Chairman, that completes my statement, and again, thank you for the opportunity to discuss this highly important issue facing U.S. agriculture.

Figure 1. Projected Soybean Oil Used for Biodiesel Production and Share of Total Domestic Soybean Oil Production.

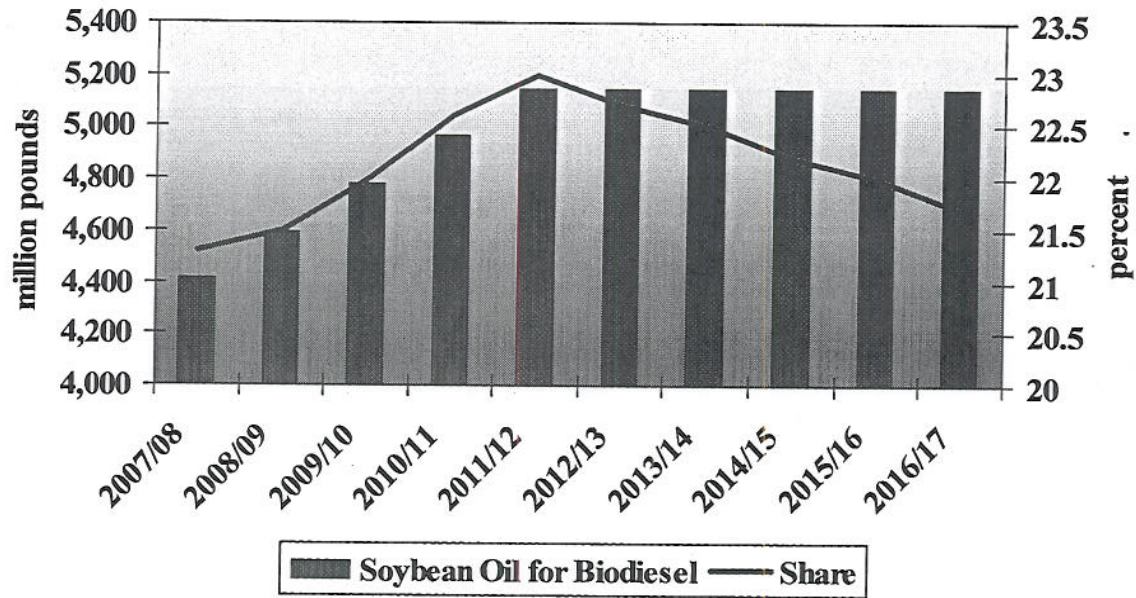


Figure 2. Nominal Corn Prices, 1930-2016

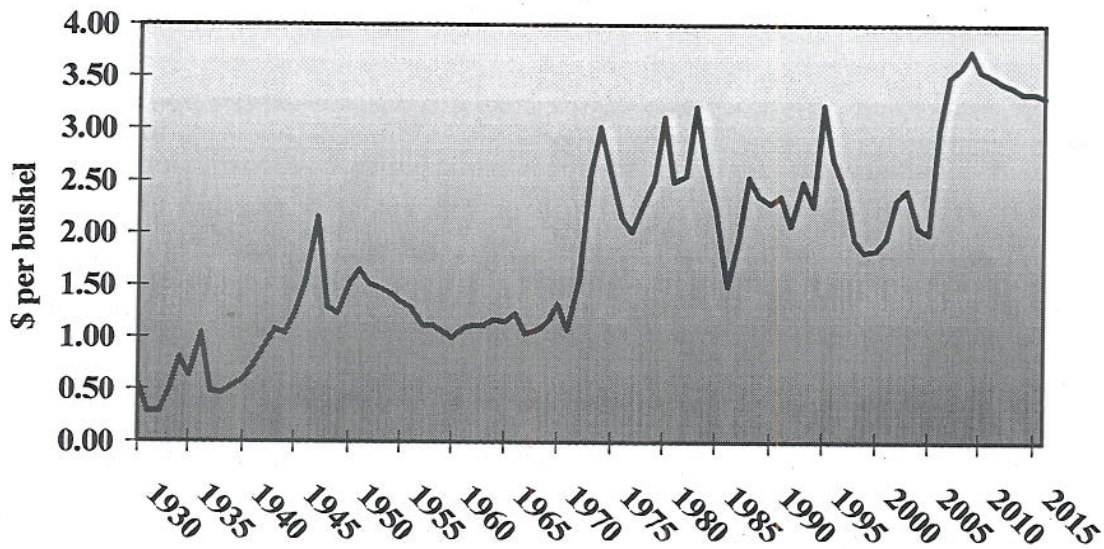


Figure 3. Harvested Corn Acres, 1930-2016

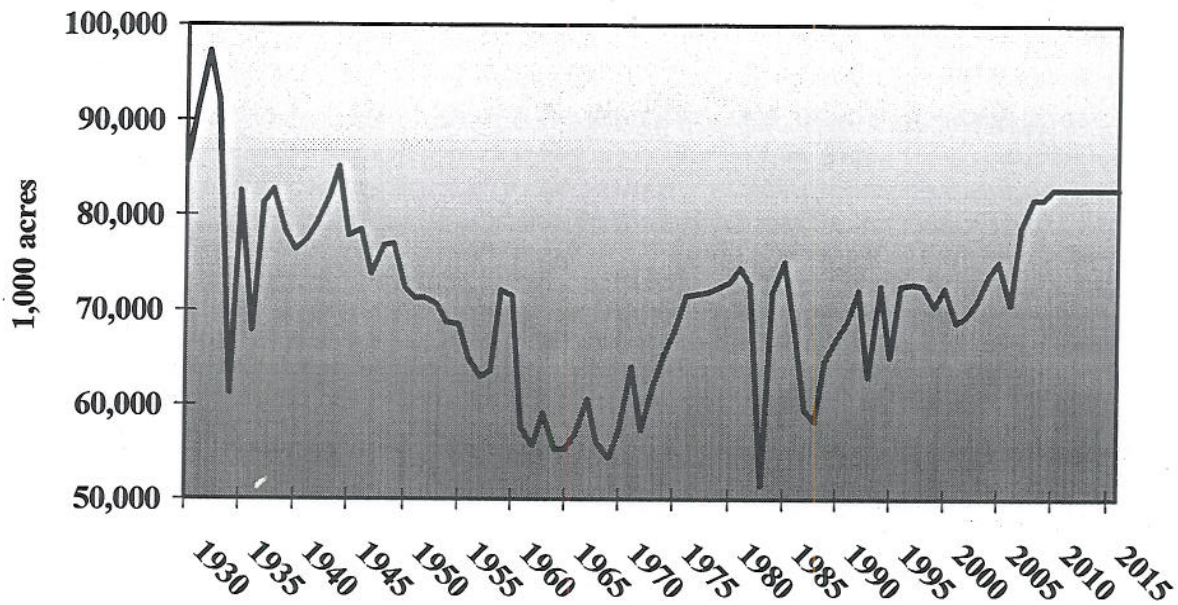


Figure 4. Beef Production and Returns over Cash Costs for Cow-Calf Enterprises, 2007-16.

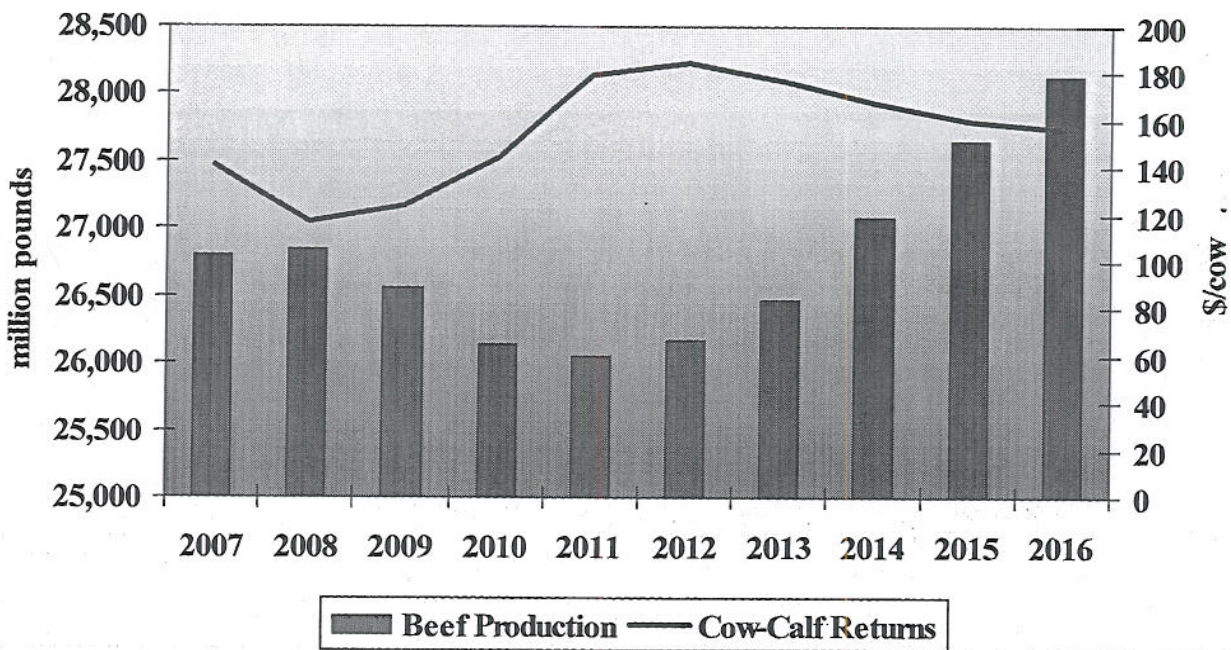


Figure 5. Pork Production and Returns Above Cash Costs for Farrow to Finish, 2007-16.

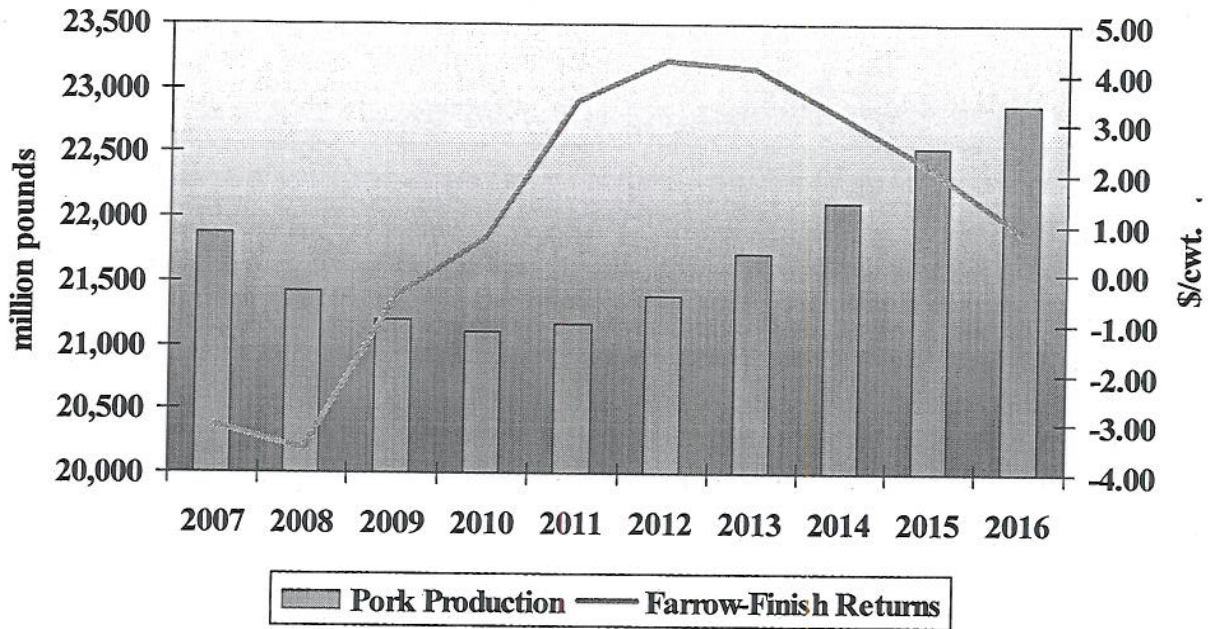


Figure 6. Chicken Production and Net Returns, 2007-16.

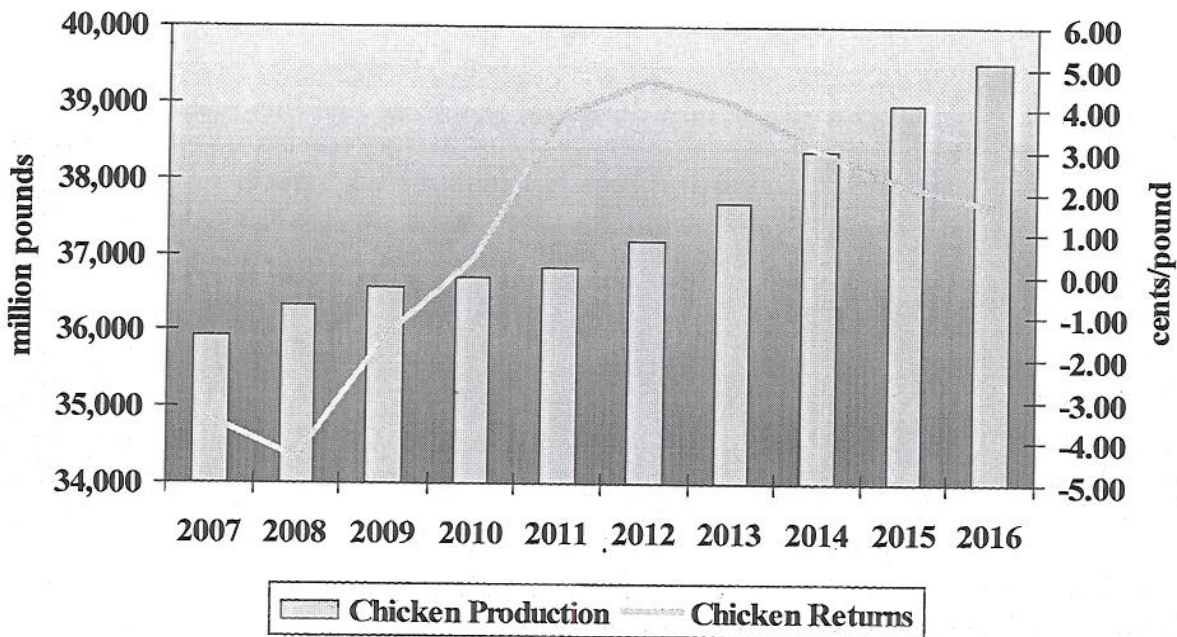


Table 1. Comparison of the USDA Long-Term Projections for 2015 Made on February 2006 and February 2007.

	Feb-06	Feb-07	Percentage Difference
Harvested Corn Acres (millions)	77.2	82.8	7.3
Corn Production (million bushels)	12,655	13,935	10.1
Fuel Alcohol Use (million bushels)	2,915	4,300	47.5
Fuel Share of Corn Production (percent)	23.0	30.9	34.0
Corn Prices (\$/bushel)	\$2.60	\$3.35	28.8
Stock to Use Ratio	8.9	5.5	-38.2
Net Returns (\$/acre)	\$194.51	\$332.00	70.7
Harvested Soybean Acres (millions)	69.4	67.7	-2.4
Soybean Production (million bushels)	3,075	3,055	-0.7
Soybean Oil Production (million pounds)	22,095	23,390	5.9
Soybean Prices (\$/bushel)	\$6.10	\$6.75	10.7
Soybean Price Oil (\$/pound)	\$0.26	\$0.31	16.0
Stock to Use Ratio	8.1	7.5	-7.4
Net Returns (\$/acre)	\$170.17	\$195.00	14.6
Total Beef Production (million pounds)	29,201	27,649	-5.3
Choice Steer Prices, Nebraska (\$/cwt.)	\$80.51	\$91.59	13.8
Cow-Calf Returns above Cash Costs (\$/cow)	\$112.49	\$159.52	41.8
Total Pork Production (million pounds)	22,839	22,535	-1.3
Hog Farm Price (\$/cwt.)	\$48.41	\$53.82	11.2
Farrow-Finish Returns above Cash Costs (\$/cwt.)	\$0.75	\$2.14	185.3
Total Chicken Production (million pounds)	42,878	38,960	-9.1
Broiler Farm Price (cents/pound)	44.00	47.10	7.0
Net Returns (cents/pound)	0.40	2.19	447.5
Annual Avg. Change in CPI (1982-84=100) during 2007-2015 for:			
Beef and Veal	0.9	2.2	
Pork	1.4	2.3	
Poultry	1.5	3.0	
Food away From Home	2.2	2.8	
Food at Home	2.1	2.2	
All Food	2.1	2.4	
Crude Oil (Refiner Acq. Cost)	59.5	70.3	18.2