

BioEconomy Impacts for Dairy Animal Agriculture

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Robert Tigner, Iowa State University
extension farm management field specialist

A very sudden and rapid paradigm shift has been taking place in the last 3-4 years. The motor fuel/additive ethanol industry had been building infrastructure slowly for about 30 years but took off much more rapidly as oil prices rose following 2001 and federal tax policy changes in 2003. This paper will look at some of the impacts this change has had on dairy animal agriculture.

State of US Ethanol

Near the end of 2007, current ethanol production capacity is about 6.92 billion gallons annually. Seventy three new and expansion projects are underway that will add 6.56 billion gallons per year. The 2006-2007 corn marketing year used 2.2 billion bushels of corn for ethanol. In 2007-2008, current ethanol capacity will use 3.2-3.5 billion bushels while with that to be completed, about 4.9 billion bushels of corn might be utilized. That would be equivalent to using the total 2006 corn crop from Iowa, Illinois and Wisconsin. Supply shifts, additional yields from more acres and higher per acre yields will be necessary. Demand shifts are also necessary to achieve a new equilibrium.

Ethanol production has exceeded expectations and will soon out pace the Renewable Fuel Standard (RFS). However legislation in the US Congress is being seriously considered that would raise the RFS to 35 billion gallons. A couple of issues that need to be solved are certification of legacy vehicles to utilize ethanol blends above 10%. A second ethanol infrastructure issue is the low number of flex fuel vehicles and pumps certified for higher blend rates or E-85. These issues will be resolved in time.

Farm Level Responses to Ethanol

Cropping changes will reflect the economic opportunities presented and resources available to individual farms. Management and marketing will play larger roles in profitability. Two production aspects for increased management scrutiny are seed costs and energy. Corn seed costs have more than doubled since 2004, while combined seeds and chemical costs together have risen by over \$80/acre since 2001 for corn following soybeans. Corn production costs per bushel are up, 40 cents/bushel since 2001, while yields rose by 20.8% for corn following soybeans. With these large production cost changes, cost control will be critical. Land costs will be less controllable, however, for farm operators that rent tillable cropland.

The prior discussion points out the cost of feed increase that has taken place during the past year. Methods to control supplement inputs and maintain milk production will become increasingly important. Improved forage quality and digestibility are the outcomes to be sought that will achieve reduced feed cost for dairy producers. Since feed cost is nearly 50% of all costs to produce milk, the forage management aspect of dairy farming should be a top priority. Varietal selection for corn silage and good harvest management will improve forage quality. Alfalfa hay or haylage fed to dairy cattle should also receive the same management intensity.

The goal of forage management for quality is to reduce corn grain and protein supplementation. Corn will continue to be priced near or above current levels due to the wide range of profitability for ethanol plants. The need for additional corn supplies will keep prices relatively high and will bid soybean prices higher as the energy and feed markets compete for acres. Areas of the US that can choose spring wheat or soybeans will continue to place pressure on wheat acres which will also feed into late winter early - spring futures market prices. Grain and oilseed have moved away from supply drivers to demand as the pricing means.

Milk Prices and Production Costs

Milk production costs do not reflect the cost of production in the short run. Increases in feed costs, transportation cost of milk, and supplies or labor are not factored into the milk price that dairy farmers receive because they do not negotiate their mailbox milk price. Farmers are price takers, except in certain niche markets. Milk prices reflect supply and demand.

If commercial disappearance continues to be strong enough to prevent burdensome dairy product supplies, milk price will reflect that strong consumer demand. With current milk prices, many dairy farmers will be able to absorb the increased costs they have experienced. However weak economic growth or a recession could dramatically change milk prices and place financial stress on dairy farms. Dairy farms that are most efficient financially and in producing milk will weather that period.

In the long run increased cost will have to be reflected in higher milk prices. This will happen through reduced milk production in the United States. Dairy farmers will voluntarily or involuntarily leave the industry, reduce feed per cow, or forego capital improvements until supply and demand reach a new equilibrium price.