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ECN 344 01

Dr. Tasic

14 April 2016

Ethanol Production and the Impact on the Cattle Industry

The production of biofuels is a is not a new trend in the United States. It has been around since the 1980’s when there was a boom in biofuel production due to a government push. It began to boom in the early 1980’s, but by 1986 there was a bust and most of the ethanol companies went out of business (Byrge & Kliesen, 2008). The production of biofuels is gaining popularity since the mid 2000’s because of the growing concerns of climate change and environmental protection. Biofuels, such as ethanol and biodiesel, are renewable energy sources that are put into liquid form. They are used in vehicles to cut down on the use of gasoline and oil, which are nonrenewable resources. According to the United States Energy Information Administration, in 2015, 13.7 billion gallons of ethanol was added to gasoline in the United States. Most gasoline has some percentage of ethanol in it. There are currently three blends of ethanol gasoline including E10, E15, and E85. They each contain 10 percent, 15 percent, and 85 percent respectively. The most common of these is E10. Most newer vehicles can use E10, but E15 and E85 are less popular. Newer vehicles created as flex fuel vehicles can handle E15 and E85. As ethanol becomes common place at gas pumps around the United States, the impacts of it, either good or bad spread throughout the country. While ethanol may be a new eco friendly, renewable energy source, it’s negative impact has spread throughout the nation causing consumers to pay more for food and gas as well as spreading stress and panic through the cattle and poultry industry.

Ethanol can be made from corn, wheat, barley, and other grains. In the United States, 95 percent of ethanol is produced by corn (Miljkovic, Shaik & Bruan, 2008). While 95 percent of ethanol is produced by corn, it is also the leading source of feed for livestock. Using a large portion of the corn, traditionally used for livestock grain, for ethanol production has large impacts on the livestock market. A large discussion in the United States today is that ethanol is not doing what is it supposed to and that the consequences of ethanol are not justified because of it’s lack of efficiency. The first purpose of the production of ethanol back in the 1970’s was to stop the dependency on foreign oil from the Middle East. The current purpose of ethanol is to reduce harmful emissions that most gasoline fueled vehicles emit. The very question people ask is if ethanol really serves that purpose without having too many consequences that harm other industries or consumers.

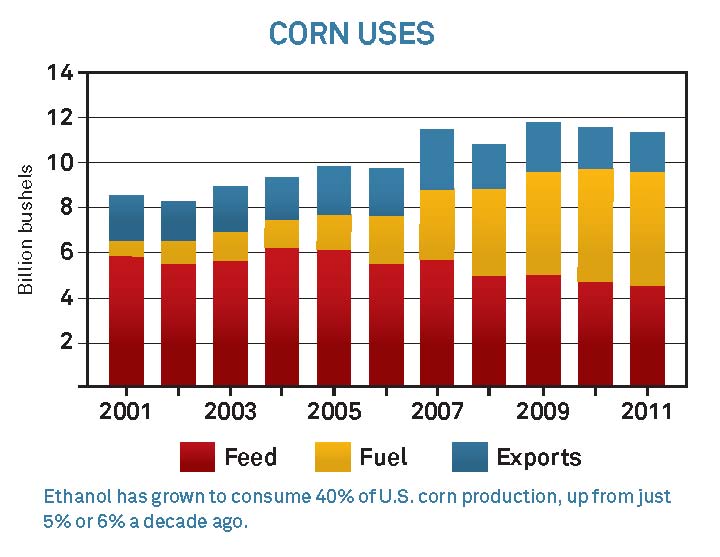
Rick Newman (2012) states, “Like many bad ideas, it seemed like a good one at first. Ethanol had a great, original purpose and was produced to be an eco-friendly alternative to gasoline. Its production boomed because of it. Ethanol is known as a renewable energy source because corn, wheat, barley, or any grain used can be planted repeatedly each year. Even though it is a renewable energy source, it is not a completely reliable source. Corn can only be planted for so long on a piece of land before all of the nutrients in the soil are gone. Each field that is planted with corn must rotate between other crops to gain back nutrients causing some fields to be unable to produce corn for ethanol. Corn is also subject to drought or floods which can cause devastating losses for farmers and impact the ethanol, food, and cattle industries. Ethanol may be renewable, but the industry is susceptible to unpredictable corn shortages.

Over time though the impacts of ethanol production and use have been felt by consumers by food price increases and gas mileage as well as the cattle industry. Consumers have felt the impact of ethanol production in more than one way. Fields that were previously planted with corn for food purposes are being taken over with corn planted for ethanol production. This leads to a shortage of corn produced for food, which then leads to food shortages and high prices for consumers. Depending on the scale of the food shortages, it can be very detrimental for the United States and other countries. Food prices have risen with the corn prices. Food prices rose are 4.5 percent in one year as ethanol production boomed (Byrge & Kliesen, 2008). One price increase that would affect millions just by the popularity of the item is high fructose corn syrup. High fructose corn syrup comes directly from corn and is put in thousands of grocery items from ketchup to candy. Byrge & Kliesen (2008), state that high fructose corn syrup in a 12-pack of soda increased in price from 11.5 cents to 22.2 cents. The price for high fructose corn syrup doubled in price a short period of time which then increase the prices of every food item it is in. That is one impact that was not initially seen when ethanol production started booming. Food prices will continue to increase which will affect he United States as well as poorer countries who rely on the United States for exported foods.

Consumers also could notice the impact of ethanol while filling up at the pump. Ethanol is less efficient than regular gasoline. Rick Newman (2012) brings up the figure that fuel economy with ethanol is 25 percent less than pure gasoline. Ethanol, while having lower fuel economy is also less efficient than gasoline. Ethanol provides 34 percent less energy per unit volume than gas (Newman, 2012). Ethanol is less efficient and provides less fuel mileage for drivers. These downfalls of ethanol of these do not make it a strong consumer choice. It is not appealing to customers to buy gas that is not as efficient as possible. Gas with ethanol is about 20 cents cheaper than gasoline without ethanol, which may add appeal, but customers will still get less mileage with it. All in all it evens out, but has no appeal. Vehicles running on ethanol often times do not run well in colder weather which is another downfall. While it does produce less green house gases, ethanol does not create a substantial amount less. It still emits green house gases. Ethanol is a 42-billion-dollar industry (Newman, 2012) and will continue to rise as the years go on, but it has many downfalls. Although it started out as a new energy source that the government put full support it ethanol has many downfalls and negatively impacts many industries. It needs to be analyzed if the consequences out way the positives.

One major industry that was affected greatly was the cattle and poultry industry. The cattle industry went through stress and panic as ethanol production started to rise. Ethanol production is competing for the same corn that ranchers and feedlot owners need. United States livestock is the largest source of demand for the nation’s corn crop (Wisner, 2008). In the past, corn has also had a fairly constant commodity price between $1.50 and $2.50, making it a cheap and effective feed source for livestock and poultry. Ranchers and feedlot owners depend on lower corn prices for the profit of their businesses. Corn price is they key determinate of feedlot costs and production (Miljkovic, Shaik & Braun, 2008). Ranchers and feedlot owners monitor corn prices to predict the impact on cattle prices, in particular feeder cattle prices. For a time, ranchers and feedlot owners did not have to monitor the corn price because it was a consistent price. The United States government helped ranchers and feedlot owners put confidence in the corn markets by putting in place feed programs which took away the volatility of the corn prices. People could depend on the corn market to be low, which helped the livestock market. It added consistency to the market and gave feedlots and ranchers confidence in the industry. If corn prices rise, the cost of feeding cattle rises and the chain of effects continues such as higher beef prices and lower production rates of animals.

According to the United States Department of Agriculture website, in 2013, the United States farmers planted 95.4 million acres of corn, which makes the country the largest producer of corn in the world. Twenty states have ethanol plants, with 85 percent of the production concentrated in the Midwest in a 7 state area (Gottschalk, 2007). With all of this corn being produced in the United States, one would believe the country would have enough to produce ethanol and feed America’s livestock; however, that is not the case. Robert Wisner (2008), stated that ethanol production took 43 percent of the corn that would have been used for livestock grain in 2008. The largest portion of corn was used in feed and residual (Duffield, 2013), but that percentage is changing as ethanol production grows. In 2010 Ethanol production took nearly one half of the corn that was needed to feed America’s livestock, which majorly impacted the livestock industry.



Panic spread throughout the cattle industry as ethanol production began taking more and more of the industries corn. The ethanol industry contributed to the rise in in feed pries and their volatilities, states Miljkovi, Shaik, and Braun (2008). The broad impact of ethanol on the cattle industry was an increase in corn prices which in turn brought less livestock production. Ranchers and feedlot owners could no longer support a growing herd with rising corn prices, that was once a part of a steady commodity market. It was not a sudden rise in prices, but once they began to rise, they rose very quickly. Feed costs accelerated faster than prices of finished animals, states Robert Wisner (2008). The cattle prices were low, but the cost of feeding them was high. Ranchers and feedlot owners struggled to make ends meet when the expenses and final price of finished cattle were so far apart. There was no way ranchers and feedlots owners could afford to keep their current herd numbers while keeping the same profit or even breaking even on their investments. The sudden increase in corn prices led to massive losses in the cattle industry. Cattle produces had to produce less cattle to overcome the higher feed price. Herd expansions were limited or impossible. With less cattle being produced in the United States, the prices for finished cattle went up. The problem with the cattle industry is similar to the problem that ethanol production put on the food industry by creating a food shortage; therefore, raising the prices. There is a limit on how much consumers are willing to pay for meat and other foods. Andrew Gottshalk (2007) believes there is a limit to how much people will pay for beef. The price of feeder cattle cannot increase to offset the higher feed price because consumers would stop purchasing beef if the prices went too high and they would move to other cheaper means of protein. This not only affects United States consumers, but consumer world wide. The United States has such a global market that any change or issue in the United States radiates throughout the world. Both the production of ethanol and the negative impact on the cattle industry have influenced the global market.

The booming ethanol industry has negatively impacted the cattle industry of the United States, which feeds the people of the world. Ethanol production is currently using around 50 percent of the corn normally used for feeding cattle. Corn provided a relatively cheap, easy available grain for livestock. It is relatively low in protein and higher in energy which is a good combination for a finishing cattle diet. With new competition for the corn produced in the United States, the prices dramatically jumped forcing ranchers and feedlot owners to pay more to keep their percentage of grain from the ethanol producers. The higher price of feed then led to lower cattle production rates and heavy losses by cattle producers all over the United States. The ethanol industry put stress on the cattle industry and had very negative effects on the cattle market.

The United States government put its full support behind the production of ethanol. Starting with George W. Bush and continuing through Barack Obama, the government has given subsidies to ethanol producers in hopes of helping the already 42-billion-dollar industry continue to grow. The first, recent government action taken on ethanol production was in 2005. A federal mandate was put into place to “substantially increase the production of ethanol” (Byrge & Kliesen, 2008). Another mandate was put in place in 2007 as well. From 2000 to 2007, ethanol production grew by about 22 percent per year. This percentage continues to grow. The original mandate, known as the Renewable Fuel Standard Act, in 2005 required 5.4 billion gallons of biofuels to be blended with gas by 2008 (Byrge & Kliesen, 2008). The Renewable Fuel Standard Act was revised into The Energy Interpendence Security Act of 2007 which increased that goal to 9 billion gallons and extended the mandate through 2022. In 2022, there was to be 36 billion gallons of blended ethanol gasoline.

The government pushed this by providing subsidies and tariffs to ethanol producers. The United States government gave ethanol producers from 1980 to 2011, over 45 billion dollars in tax credits (US Energy, 2013). Producers received 45 cents per gallon of ethanol produced. This tax credit expired in January 2012 though. Ethanol producers are still guaranteed a certain percentage of the annual corn crop each year. The government dictates what percentage of corn must go towards ethanol production each year. Each year is different but in 2012, it was nearly 40 percent (US Energy, 2013). Even though producers are not receiving a tax credit, they are still guaranteed corn for the year, which guarantees business. The United States also put tariffs on ethanol to protect the American companies from outside competition. This greatly affects Brazil. Brazil has been attempting to build a renewable energy market with sugarcane ethanol. Although the tariffs are incredibly high, they still protect the United States ethanol producers.

The United States is still pushing full support for renewable energy sources which includes ethanol. The government has given subsidies and implemented tariffs to help the industry grow. The government put billions of dollars into the industry, but at what cost to other industries? The cattle industry took a large hit from the boom in ethanol production as well as the food markets and consumers. The government should not subsidize something that is not efficient such as ethanol produced by corn. Evidence proves that ethanol is not as efficient as other renewable or nonrenewable energy sources. It is around 35 percent less efficient that gasoline. Ethanol, although it produces less carbon dioxide, still puts carbon dioxide into the atmosphere. It just takes corn away from other industries that need it and were already using it. Corn growers would suffer slightly from the absence of an ethanol industry for the simple fact that some farmers have become dependent on it, but the growers already had a market for their corn according to John Aziz (2013). The government could put time and money into other renewable energy sources that are more competitive and efficient such as wind energy and hydro energy. The government should stop subsidizing an industry that hurts so many others and has not produced overly great results. As the ethanol industry as grown and changed, ethanol made from sugarcane, wood chips, grass, and other non-food items have become popular. These types of ethanol are being subsidized by the government as well for about a dollar per gallon tax credit. Many of these have no other market to go to like grass or leaves, which would make them an excellent choice to make renewable energy from.

The production of ethanol made by corn in the United States has been heavily supported by the government, but has angered thousands of people. Ethanol has take nearly 50 percent of the corn used for livestock. Competition over the corn in the United States dramatically raised the price for corn. The high prices for corn decreased cattle production and increased the price of beef. Ranchers and feedlot owners took heavy losses from the dramatic increase in corn prices. Consumers have also been negatively impacted by ethanol production. It started out as a great idea to help climate change and emissions, but it did more harm than good. The government put billions of dollars into, but this may have been a wrong move. The government should stop subsidizing the corn ethanol industry and let the market decide what is best for the United States.

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