

November 18, 2005

ETHANOL PLANT TOUR

Last week, I attended our Nebraska Cooperative Extension Association (NCEA) meeting in Hastings, NE. One stop on an agricultural tour led us to the Chief Ethanol plant, the oldest ethanol plant in the state. They originally produced 10 million gallons of ethanol per year when the plant first started. Now they can produce 60 million gallons per year. When gasoline prices went out the roof this summer, the plant couldn't produce ethanol fast enough to meet the historic change in demand.

The plant manager talked about how technology had changed to convert more ethanol out of a bushel of corn. Now conversions are in the neighborhood of 2.7 gallons of ethanol out of a bushel of corn, still not at a maximum theoretical level. He also attributed modern corn varieties in being better in starch characteristics.

The Chief plant now uses about 98% corn. When asked about sorghum, he indicated the plant needed about a 10% price discount compared to corn to match the economics in conversion to ethanol at this plant. When asked about energy balance and how sometimes the industry is quoted to have a negative energy balance, he was quick with an answer. Corn yields have increased significantly in Nebraska and when you already have a viable corn production industry, it is not fair to compare how much energy it takes to produce a tractor and other farm equipment and include that with ethanol production efficiency. Currently, a UNL study shows an energy efficiency conversion of corn to ethanol at 1.4 to 1.

Wet distillers grain feed byproduct being produced was all being used within a 30 mile radius of the plant and was in high demand this fall. The cattle feeders get a feed of preferred choice on a cost basis and the ethanol plant did not have to spend energy to dry the feed. The wet feed has approximately 30 percent protein. In beef research, studies estimate distillers grains are about 50 percent degraded by the rumen bacteria, 180 to 200 percent less than soybean meal. Therefore, distillers grains allow a lower protein diet to meet animal requirements or more urea to be fed to lower ration costs, compared to soybean meal for ruminants.

While livestock continues to be the largest consumer of Nebraska corn, the fastest growing segment of corn usage is the ethanol industry. Earlier this year it was projected that ethanol, along with other industrial uses, will use about 25 percent of the state's corn production. That figure has doubled in just the last five years.

About 18 percent of Nebraska corn is fed to Nebraska beef cattle, 6 percent is fed to Nebraska hogs, 5 percent is shipped to dairies in California, 13 percent is shipped to other western states for beef production and about 6 percent is shipped to western states for poultry production. Nebraska's ethanol industry consumed an estimated 200 million bushels of corn in 2004, an increase of more than 20 million bushels from 2003.

With several new plants expected to begin operations in the next two years, and expansion plans at some existing plants, analysts predict the amount of corn going into ethanol production in



Nebraska could exceed 240 million bushels in 2005. With 11 ethanol processing plants currently operating, Nebraska is the third leading ethanol producing state in the nation. In total, the 11 plants have the capacity to produce approximately 520 million gallons of ethanol per year.

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