

ECONOMIC IMPACTS OF ETHANOL ON LIVESTOCK

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Biofuels are rapidly altering the competitive landscape for feedstocks. Corn Ethanol production is currently estimated to use 2.1 billion bushels of corn or about 20% of U.S. corn production. Traditionally, livestock have been the largest user of corn, consuming approximately 60% of production (USDA, ERS). The rising demand for corn by the ethanol industry will increase prices and also reduce availability of corn to livestock producers. Co-products of ethanol production may reduce the impacts of corn price and corn availability for livestock. However, these co-products are not perfect substitutes for corn so they cannot replace corn in diets on a one-for-one basis. The economic impact of ethanol in livestock is analyzed using a supply and demand model of the pork, beef and chicken sectors. The cost impacts are evaluated by considering alternative scenarios of corn price increases and also accounting for potential changes in diet formulation of these species with the inclusion of DDGS. Importantly, because species have different inclusion rates of ingredients, the impacts of ethanol cause relative competitiveness of the meat sectors to change. Table 1 shows the relative price/cost increases relative to ethanol. Crop prices are a compilation of estimated market impacts from prior studies. The price changes due to ethanol's increased demand for corn are used to shock the supply and demand model for livestock. Table 2 shows the total economic impacts on the various U.S. livestock sectors. Pork and Chicken are the most adversely affected due to their relatively high consumption of corn. However, most of the impacts are passed through to consumers who must pay more for food. Other scenarios include feeding DDGS but the relative price of DDGS must decrease to substantially reduce the market impact on livestock.

Table 1. Relative feed cost impacts of corn and soybean meal price increases by species.

Species	Historical Price (corn/soymeal) (\$2.15/\$192.48)	Maximum Price (corn/soymeal) (\$5.43/\$192)	Minimum Price (corn/soymeal) (\$2.56/\$92.70)	Most Likely Prices (\$3.46/\$166.77)	Expected Feed Cost Change
	Change in feed cost, \$/head				
Broilers	\$0.38	\$0.69	\$0.32	\$0.49	27%
Swine	\$29.54	\$60.05	\$28.08	\$40.12	18%
Beef Cattle	\$200.81	\$401.68	\$220.04	\$279.27	6%
Dairy	\$1,019.73	\$1,587.75	\$1,000.25	\$1,218.96	11%

Table 2. Economic impacts of feed cost increases in livestock.

	Beef Cattle	Swine	Poultry
Change in Feed Cost	6%	18%	27%
Change in Quantity Produced	-0.58%	-3.27%	-4.80%
Change in Farm Price	2.4%	9.3%	19.0%
Change in Net Imports	1.03%	1.10%	
Change in Producer Net Income	-\$1.1 Bill.	-\$0.94 Bill.	-\$1.1 Bill.
% Change Producer Net Income	(-3.7%)	(-7.7%)	(-6.5%)
Increase in Consumer Cost	\$1.0 Bill.	\$1.3 Bill.	\$3.9 Bill.
Increase in Retail Price	1.1%	2.5%	13.4%