Economic Impacts of *E. coli* on U.S. Beef

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**Economy-wide Impacts**

Like all industries, the U.S. beef and by-product industry has far reaching impacts throughout the economy. While the industry is valued at $62.3 billion, numerous sectors support the industry, and all of the employees involved make expenditures across the entire spectrum of the economy.

Figure 3 shows that in order to support $62.3 billion in beef and by-products output, there are indirect impacts of $69.1 billion and induced impacts of $46.1 billion for total impacts of $96.6 billion. Indirect impacts result from purchases of inputs required to produce the products for sale. The obvious example here are the cattle which are purchased in order to produce the beef. Induced impacts result from expenditures by employees and households in the input industries. Following the proportions of beef produced throughout the country, the Central region generates the largest economic impact from beef and beef by-product production at $59.4 billion, followed by the Southwest and the Upper Midwest. (Figure 4).

Value added can be seen as additional gross national (state) product as a result of industry sales, and is a sub-category of output. As a result, value added should not be added to output when calculating economic impacts. Thus, $196 billion in total output impacts due to the beef industry creates $75.1 billion in gross national product.

Employment required to directly support beef and by-product sales is 103,000 jobs. However, due to the additional economic impact, 494,700 jobs in the input industries are required to support U.S. beef production. Therefore, $87,800 jobs in total are required to support the U.S. beef and beef by-product sector.

**Economic Impacts of *E. coli***

Even though the rates of infection from Shiga-toxin producing *E. coli* O157 in beef has declined in recent years, it does not mean that the pathogen is not still a danger to human and industry health. According to the Center for Disease Control, these infections decreased 32 percent when compared with the 2006-2008 baseline period and 19 percent when compared with the most recent three years. However, cases of *E. coli* O157 have increased 22 percent since 2010, and the economic costs continue to increase. The preliminary economic cost estimates of *E. coli* O157 to consumers in 2011 were $1.9 billion, and they have not been corrected for inflation. Thus, the additional economic cost of *E. coli* O157 in 2011 alone is at least $2.1 billion. The economic impact to the U.S. beef and by-product industry is significant. Even though there is an overall decrease in the number of cases, the economic impacts of this pathogen are significant.

The U.S. beef and by-product industry produces beef for domestic and international markets. The demand for U.S. beef is higher in foreign markets, and is expected to increase as countries develop confidence in U.S. beef, demand would likely increase. It is important because each one percent increase in demand for U.S. beef could increase economic activity by as much as $1.96 billion and 8,600 jobs.

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