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Economic Contribution of Cattle By-products in the Texas Panhandle

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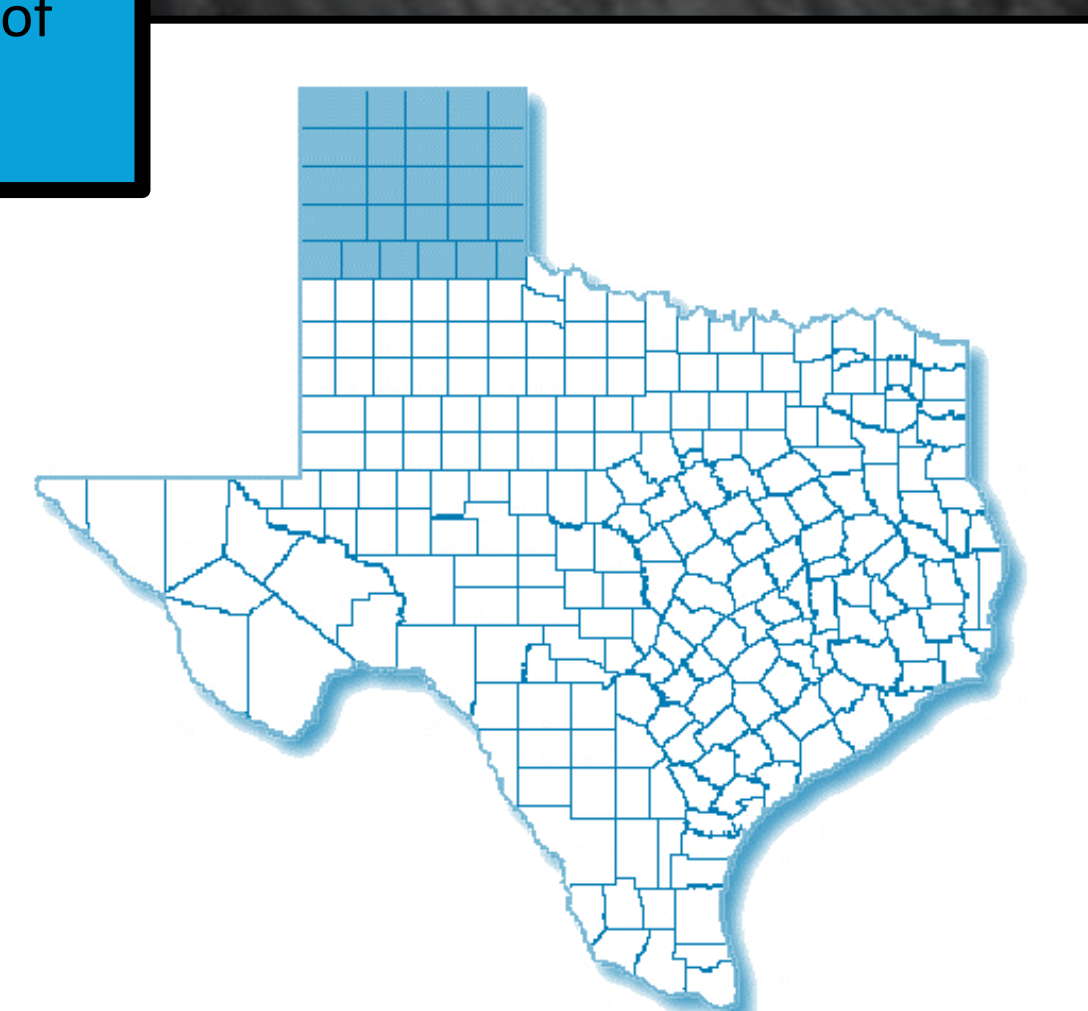
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Introduction

Animal harvesting is an important industry in the Texas Panhandle with economic output of more than \$7 billion and employment approaching 12,000 (IMPLAN, 2013). Technology advancements providing more efficient utilization of cattle carcasses through useful by-products is a means by which the value of the industry to the regional economy is increased. By-products can reduce waste, increase the overall value of the carcass, and boost profits. Increased profit potential provides an incentive for beef packing facilities to efficiently utilize the majority of the carcass. The by-products increase value added to the beef marketing channel in the Texas Panhandle and increase the contribution of the animal harvesting industry to the regional economy.

Area of Study

The 26-county region referred to as the "Texas Panhandle" was selected for the study because of the large presence of fed cattle in this region.



Customary rituals, society, and religious ideologies are significant factors in whether or not a by-product is utilized as food. By-products can provide beneficial nourishment to the body and represent different roles in diets internationally. Thus, products that are regarded as inedible in one nation may be considered as a delicacy in another.

Data and Methods

The average quantity (in pounds) and value of beef by-products per head was acquired from the USDA By-product Drop Value Report (2015) and is shown in Table 1. The hide represents the most valuable by-product on the report and is more than 49% of the total reported by-product value per head. It is important to note that the items listed do not include fabrication by-product items which are instead included in the box-beef cutout value. In addition, there are other by-products that packers may sell including pharmaceuticals, tripe, sweetbreads, kidneys, feet, leg tendons, and pituitary glands among other items. However, this study only accounted for the by-products listed in Table 1. The quantity and value per head for these by-products was applied to the estimated number of cattle harvested in the Texas Panhandle Region in 2015 (Ty Lawrence, personal communication, 2016) to get a total quantity and value of by-products for the region, Table 2. The direct value was used as the input to the IMPLAN model to determine the regional economic contribution of beef by-products to the region.



Objective

This analysis explores the resource availability and value added in rendering bovine products in Texas Panhandle cattle slaughtering facilities. The specific objectives are to identify and measure the availability of by-products from beef packing plants in the Texas Panhandle and estimate the total contribution of beef by-products to the regional economy.



Meat and bone meal has historically been used as a protein source in animal nutrition because of essential amino acids, minerals, and vitamin B12. Chemical analyses indicate that the stock contains substantial amounts of organic matter, nitrogen, phosphorus and calcium. The meal also provides a satisfactory nitrogen content for fertilizer as compared to urea nitrogen.

Table 1. Wholesale beef by-product values, December 31, 2015.

By-product	Price	Lbs. ¹	Value ¹
Hide	\$ 71.00 / hide	68.89 / hd	\$ 71.00 / hd
Tallow, edible	\$ 17.75 / cwt	16.50 / hd	\$ 2.93 / hd
Tallow, bleachable	\$ 16.25 / cwt	61.88 / hd	\$ 10.05 / hd
Tongue	\$ 375.00 / cwt	3.30 / hd	\$ 12.38 / hd
Cheek meat	\$ 196.00 / cwt	4.40 / hd	\$ 8.62 / hd
Head meat	\$ 40.00 / cwt	1.79 / hd	\$ 0.72 / hd
Oxtail	\$ 295.00 / cwt	3.30 / hd	\$ 9.74 / hd
Hearts	\$ 51.00 / cwt	5.23 / hd	\$ 2.66 / hd
Lips	\$ 145.00 / cwt	1.79 / hd	\$ 2.59 / hd
Livers	\$ 30.00 / cwt	13.20 / hd	\$ 3.96 / hd
Tripe, scalded	\$ 105.00 / cwt	8.94 / hd	\$ 9.38 / hd
Tripe, honeycomb	\$ 115.00 / cwt	2.06 / hd	\$ 2.37 / hd
Lungs	\$ 0.05 / cwt	6.46 / hd	\$ 0.00 / hd
Spleen	\$ 0.25 / cwt	1.93 / hd	\$ 0.00 / hd
Meat & bone meal	\$ 210.00 / ton	50.88 / hd	\$ 5.34 / hd
Blood meal	\$ 650.00 / ton	8.25 / hd	\$ 2.68 / hd
Total:		258.78 / hd	\$ 144.44 / hd

¹Typical slaughter weight of 1,375 pounds
Source: USDA, 2015

Results

There are an estimated 4.7 million cattle slaughtered annually in the Texas Panhandle, Table 2. The resulting by-product that is produced is approximately 1.2 billion pounds. Beef by-products account for 7% of the live cattle value. The total value of these products is more than \$680 million. Beef by-products have an impact on other economic sectors linked directly and indirectly to their production. The total contribution to the regional economy is \$1.3 billion in economic output and the support of over 4,200 jobs.

Table 2. Average value of beef and beef by-products in the Texas Panhandle, 2015.

Slaughtered (head)	Live Value (\$)	Dressed Value (\$)	By-product (lbs)	Value of by-products (\$)
4,713,200	\$9,718,555,906	\$9,947,297,877	1,219,658,330	\$680,758,023

Table 3. Regional Economic Contribution of Beef By-Products, 2015.

Impact Type	Employment	Output
Direct Effect	1,108	\$680,758,023
Indirect Effect	2,206	\$517,593,336
Induced Effect	901	\$114,979,319
Total Effect	4,214	\$1,313,330,678

Summary

Beef by-products:

- Can help boost the profit of packers
- Contribute to the meat industry and the regional economy

It should be noted that results from this study are conservative estimates as only the by-products listed in Table 1 were evaluated. In reality, slaughtering facilities utilize and sell more by-products which were not included. Further research should be completed to determine the additional value of these products.

"So many products come from cows that we really do use everything but the moo!"

-- Farm Credit Knowledge Center

References

- IMPLAN Group, LLC. 2013. IMPLAN System (data and software). 16740 Birkdale Commons Parkway, Suite 206, Huntersville, NC 28078. www.Implan.com
- USDA. 2015. "USDA By-Product Drop Value (Steer) Report. Market News Service, Des Moines, IA. www.ams.usda.gov