

Agriculture's Contribution to The Wisconsin Economy 2017: Beef Farmers

As the dairy industry in Wisconsin goes into its fifth year of fiscal stress, many dairy farmers are electing to shift from dairy to beef production. Here they are able to take advantage of the farm infrastructure suited to cows, but significantly reduce the daily costs associated with milking. As a result Wisconsin has seen a decline in dairy farms but a rise in beef operations. Indeed, in 2017, there was some \$1.86 billion in beef farm sales along with just over 28,000 jobs.

Despite this relatively recent shift away from dairy beef farming, the beef industry is still dominated with medium to small size farms (Table 1). The vast majority, 91.2% have fewer than

fifty head of cattle and 41.5% have fewer than ten. There are only ten beef cattle farms (0.6%) that have more than 500 head of cattle. The distribution of farms by sales, however, presents a very different picture. The 91.2% of farms with less than 50 head of cattle account

Table 1: Distribution of Beef Operations

	Farms	Sales
1 TO 9 HEAD	41.5%	3.7%
10 TO 19	24.0%	3.2%
20 TO 49	25.7%	7.3%
50 TO 99	6.7%	4.3%
100 TO 199	1.6%	2.7%
200 TO 499	0.5%	1.6%
500+ HEAD	0.1%	77.1%

for only 14.2% of total sales or revenue. The ten larger beef farms, those with 500 or more head of cattle accounts for 77.1% of total beef sales.

A challenge to studying the beef industry in Wisconsin is the interplay between farmers that focus on beef cattle and dairy farmers who sell cull cows into the beef supply chain. For this analysis we are focusing on the former, farmers that are focused on beef production.

Beef farms contribute to the larger Wisconsin economy in three ways; first is the farm operation itself, second is linked to non-labor related expenditures like feed, electricity and equipment, and third the wages paid to workers and earnings retained by the farmer. These three effects are sometimes referred to as the direct, indirect and induced. The total effect

with the sum of those three being the total effect, or total contribution to the economy. By comparing the different ways in which the industry contributes to the larger economy can provide insights into the nature of the industry.

The dominance of the beef industry, in terms of number of farms, by small operations is a reflection that many beef farmers have multi-product operations. For some, the beef operation is a small part of a larger farm enterprise.

The Wisconsin beef production industry contributes some \$3.36 billion to industrial sales or revenues, once the ripple or multiplier effect is considered (Table 2). For every \$100 of beef sales, an additional \$81 in industrial sales is generated elsewhere in the Wisconsin economy. The industry contributes 37,900 jobs and for every 100 jobs in the beef industry, an additional 35 jobs are created elsewhere in the economy. Some \$692 million is generated in labor income (wages, salaries and proprietors income), and \$1.2 billion in total income (labor income plus all other sources of income such as dividends, interest and rent). This level of economic activity also generates tax revenues that flows to state and local governments, about \$106 million.

Note that about two thirds of the multiplier effect comes in the form of indirect effects compared to induced effects. This generally means that the industry is more “capital” intensive than labor intensive. This is likely the cost of feed and specialized services such as veterinarian services and transportation.

Table 2: Economic Contribution of Beef Operations (2017)

	Industry Sales (000\$)	Employment	Labor Income (000\$)	Total Income (000\$)
Direct Effect	\$ 1,857,804.0	28,027	\$ 229,776.2	\$ 447,360.4
Indirect Effect	\$ 1,002,994.5	6,225	\$ 298,424.5	\$ 476,105.8
Induced Effect	\$ 498,851.0	3,669	\$ 163,776.2	\$ 289,938.5
Total Effect	\$ 3,359,649.4	37,920	\$ 691,976.9	\$ 1,213,404.8
Multiplier	1.808	1.353	3.012	2.712

For this analysis we use an input-output model of the Wisconsin economy. One can think of this model as a “spreadsheet of the economy” where buyers (demand) are across the columns of the spreadsheet and sellers (supply) are down the rows. Any individual cell of the spreadsheet captures the amount of money flowing from the seller to the buyer. Because supply must equal demand we can trace changes in one part of the economy (an interaction between supply and demand) throughout the whole of the economy. These changes are often referred to as the multiplier effects.

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