Contribution of Agriculture to Wisconsin

Agriculture's Contribution to The Wisconsin Economy: Horticultural Farming

Horticulture production in Wisconsin, which includes greenhouses, nursery, and floriculture (flowers) production, is composed of some 1,508 enterprises distributed across the state. Total sales in 2017 was about $195.6 million employing 2,000 people with total payment to workers (inclusive of proprietor or owner income) of $112.9 million. Here the "typical" horticultural operation has sales of about $129,700 and output (sales) per worker of $97,800 and work related income of $56,500 per employee.

These simple average, however, mask the nature of the horticultural industry in Wisconsin. If one looks at the distribution of horticultural establishments by size, including sales (Table 1) and acreage (Table 2) a slightly different understanding of the industry comes to light. Specifically, 55.2% have sales of less than $50,000 and only 6.2% have sales of greater than $500,000. In term of acreage, 69.7% have less than 50 acres and less than 18% have more than 100 acres.

Table 1: Horticultural Farm Size: Sales

Sales	Farms	Percent
LESS THAN $1,000	16	1.1%
1,000 TO 2,499	65	4.3%
2,500 TO 4,999	83	5.5%
5,000 TO 9,999	161	10.7%
10,000 TO 24,999	281	18.6%
25,000 TO 49,999	227	15.1%
50,000 TO 99,999	240	15.9%
100,000 TO 249,999	245	16.2%
250,000 TO 499,999	97	6.4%
500,000 TO 999,999	42	2.8%
$1,000,000 OR MORE	51	3.4%

Table 2: Horticultural Farm Size: Acres

Acres	Farms	Percent
1.0 TO 9.9	526	34.9%
10.0 TO 49.9	525	34.8%
50.0 TO 69.9	79	5.2%
70.0 TO 99.9	111	7.4%
100 TO 139	68	4.5%
140 TO 179	64	4.2%
180 TO 219	36	2.4%
220 TO 259	32	2.1%
260 TO 499	38	2.5%
500 TO 999	18	1.2%
1,000 TO 1,999	5	0.3%
2,000 OR MORE	6	0.4%

Care must be taken using acreage to measure the scale of horticultural operations given the intensity of production processes. For some high value products (e.g., flowers) significant revenues can be generated from relatively small parcels of land.

Table 3: Economic Contribution of Horticultural Farming (2017)

	Industry Sales (000$)	Employment	Labor Income (000$)	Total Income (000$)
Direct Effect	$ 195,647.2	2,000	$ 112,954.3	$ 147,934.8
Indirect Effect	$ 25,478.4	203	$ 10,665.4	$ 15,294.3
Induced Effect	$ 104,722.0	770	$ 34,387.8	$ 60,831.2
Total Effect	$ 325,847.6	2,973	$ 158,007.4	$ 224,060.3
Multiplier	1.665	1.486	1.399	1.515

Businesses within the horticultural industry impacts the Wisconsin economy in two ways: first, they purchase required inputs such as tools, fertilizer, and energy (gas, diesel, electricity) among other inputs and second, employees, as well as the owners, spend their wages in the local economy. This spending creates a ripple or multiplier effect which spreads throughout the whole of the economy. Here any giver horticultural enterprise impacts the economy in three ways: the operation itself (direct effect), non-labor related inputs (indirect effects), and labor spending income (induced effect). How horticulture ripples throughout the Wisconsin economy is documented in Table 3.

For every $100 of revenue generated by a horticultural business, an additional $66 of industry sales (revenue) is generated. When taken in aggregate, the horticultural industry generates $325.8 million. For every ten jobs in horticulture and additional five jobs is generated through the ripple of multiplier effect. Here, horticulture supports just short of 3,000 jobs. Further, the industry supports $158 million in labor income (wages, salary and proprietors income) and $224 million in total income (labor income plus all other sources of income such as dividends, interest and rent among others). This economic activity also generates some $9.5 million in state and local government revenues (taxes, fees, etc).

Note that most of the ripple or multiplier effect comes through the "induced effect" which is workers spending income in the local economy. This is not surprising for two reasons. First, horticulture tends to be a more labor intensive industry. Second, if the typical wage paid is about $56,000 these represent fairly reasonably paid jobs. Clearly, horticulture in Wisconsin is not as large as livestock or traditional crop production, but is does represent one element of Wisconsin's diverse agricultural industry.

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.

Steven Deller, Department of Agricultural and Applied Economics, and the Center for Community Economic Development, University of Wisconsin—Madison. Support for this work was provided by the Division of Extension and the Economic Development Administration's University Center, University of Wisconsin-Madison, and the Dairy Farmers of Wisconsin.