

Summary Measures of the Economic Importance of Agri-food Industries in Decatur County, Iowa

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 By Mark Imerman, David Swenson, Liesl Eathington, and Daniel Otto
 Iowa State University Department of Economics
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This summary report provides county-level statistics for Decatur County, Iowa as a supplement to *The Economic Importance of Agri-food Industries in Iowa*¹ (hereafter referred to as the "state report"). Throughout this summary, local data will be presented that reflects the data provided in the state report. Brief descriptions of the data will be provided along with references back to the state report for more detailed explanations of the data and its use.

Table 1 shows that Decatur County had 788 farms in 2002. These farms averaged 353 acres apiece compared to an average of 350 acres per farm, statewide. Nationwide, farms are generally larger than in Iowa. The average US farm included 441 acres in 2002. The estimated market value of land and buildings per farm in Decatur County was \$440,309 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Decatur County farms marketed an average of \$53,275 worth of farm products according to the US Census of Agriculture.

Table 1. Decatur County Farm Statistics from the US Census of Agriculture

	Decatur County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	788	803	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	277,928	276,770	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	353	345	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	357,162	206,577	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	83,147	42,602	100,422	79,607	66,570	53,861
Farm products sold (\$)	53,275	68,519	135,388	125,766	94,245	90,880

Table 2 shows employment data for Decatur County and the state of Iowa compiled within a framework used by the US Department of Agriculture (USDA) to identify a broad range of farm and farm-related employment. These numbers are a reduced set of the statistics provided as Table 4 in the state report. The USDA compiles these employment numbers annually for each of the 50 states². For this summary, we have used the USDA classification system and data from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development to generate similar results for Decatur County. Detail is restricted in this summary, due to the smaller employment base and privacy issues at the county level.

¹ Mark Imerman, David Swenson, Liesl Eathington, Daniel Otto. Iowa State University Department of Economics. 2005.

² The USDA's definition of farm-related industries includes all food-based businesses through retailing and restaurants. Substantial portions of packaging manufacture, of gravel and lime extraction, and apparel manufacturing are also included. A discussion of the implications of the breadth of this framework is included on pages 6-9 of the state report.

Table 2. USDA-style Compilation of 2002 Farm and Farm-related Employment (Jobs)

	Decatur County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	905	19.83	0.45	201,967	10.57
Peripherally-related	311	6.81	0.16	191,669	10.04
Total farm and farm-related	1,216	26.63	0.31	393,636	20.61
Total employment	4,564	100.00	0.24	1,909,934	100.00

Data derived from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development within a framework obtained from the USDA.

Tables 3 and 4 estimate the value of a more restricted definition of the agri-food industries for Decatur County. These tables are consistent with Tables 5 and 6 in the state report. Estimates included in these tables limit the agri-food industries to ag production (traditional farm production and nonfarm production facilities), food and other primary farm commodity processing, and ag input manufacturing (machinery, ag chemicals, and fertilizer)³.

Table 3 provides value estimates for an industry-only aggregation of the economic activity that takes place within Decatur County's borders. Output is the value of total in-county production for each industry in 2002. Value-added is the value that was added to Output by each industry's in-county production process. The difference between Output and Value-added is the value of purchased inputs that go into the production process. For individual industries, these inputs may be sourced from out-of-county or from within the county. Value-added represents the value of Output minus the value of purchased inputs. Table 3 also provides an estimate of jobs⁴ and labor income (compensation for employees and proprietors) within the agri-food industries in Decatur County.

Table 3 shows that, in 2002, the total output value of Decatur County's agricultural production industry was \$41.427 million. \$10.878 million of this output (26.26 percent of the total output value) was the value added to the output by Decatur County's ag production activity (ag production's value added). The remainder came from purchased inputs into the process (from either in-county or out-of-county sources). 42.09 percent of this value added, or \$4.579 million, was paid out as compensation to the 573 production agriculture jobs in Decatur County.

³ Estimates were generated through a process of recompiling and analyzing statistics derived from the IMPLAN database system maintained by MIG, Inc. A detailed discussion of the estimates presented here, the differences between the two tables, and how they can be interpreted is provided in pages 9 through 17 of the state report.

⁴ Jobs do not refer to the number of people working or to full-time-equivalent employment. Jobs can be full or part time. A single individual can hold multiple jobs. In short, jobs cannot be looked upon as interchangeable or comparable across industries, businesses, or location. Comparisons of wages and compensation are more appropriate in an economic value context.

Table 3. Industry-only Estimation Based on IMPLAN and Census Data

Decatur County		Labor		Value-Added	
Agricultural Production	Output*	Jobs	Income*	Value*	Pct. Of Tot.
Oilseeds	6.187	79	2.029	3.327	3.13
Grain	6.780	131	1.595	3.070	2.89
Other Crops	4.438	24	0.791	2.269	2.14
Cattle	18.292	166	-0.067	1.322	1.24
Poultry	0.000	0	0.000	0.000	0.00
Hogs and Pigs	4.824	146	0.194	0.749	0.71
Other Ag Production	0.906	27	0.037	0.141	0.13
Sum of Ag Production	41.427	573	4.579	10.878	10.25
Primary Food Processing					
Crop	0.000	0	0.000	0.000	0.00
Dairy	0.000	0	0.000	0.000	0.00
Meat	0.000	0	0.000	0.000	0.00
Sum of Primary Food Proc.	0.000	0	0.000	0.000	0.00
Other Food/Ag Processing					
Animal and Pet Foods	0.000	0	0.000	0.000	0.00
Other Food Processing	0.861	3	0.062	0.099	0.09
Sum of Other Ag Proc.	0.861	3	0.062	0.099	0.09
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0	0.000	0.000	0.00
Farm Machinery	0.715	3	0.239	0.267	0.25
Sum of Ag Input Mfg.	0.715	3	0.239	0.267	0.25
Sum of All Agri-food Ind.	43.003	579	4.880	11.244	10.59
NonAg Industries	156.424	2,554	67.077	94.916	89.41
Totals	199.427	3,133	71.957	106.160	100.00

* Numbers represent millions of dollars

If we add food and other ag processing and ag input manufacturing to agricultural production, the value of Decatur County's agri-food industry output was \$43.003 million, or 21.56 percent of Decatur County's total industrial production. Of this, \$11.244 million (26.15 percent) was value added within these industries in Decatur County. \$4.880 million of this value added was paid out as wages and salaries to the 579 agri-food industry jobs in the county.

Overall, Table 3 shows that Decatur County's agri-food industries directly accounted for 21.56 percent of the county's total output, 10.59 percent of total value added, 6.78 percent of labor income, and 18.49 percent of the county's jobs⁵.

⁵ It is unusual but possible for counties to have negative output, value-added, and labor income values in some categories, resulting in negative percents of totals. Where this happens, it is generally due to write-downs of assets and proprietor interests due to firm closings or bankruptcies, market situations where output must be sold at less than production costs, or reverse flows of incomes, pensions, or benefits.

Table 4. Industry-of-output aggregation including local inputs

Decatur County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	7.534	3.091	4.192	3.95	5.14
Grain	6.679	2.269	3.225	3.04	3.96
Other Crops	0.341	0.116	0.181	0.17	0.22
Cattle	24.780	2.825	5.045	4.75	6.19
Poultry	0.000	0.000	0.000	0.00	0.00
Hogs and Pigs	6.414	1.015	1.677	1.58	2.06
Other Ag Production	1.205	0.191	0.315	0.30	0.39
Sum of Ag Production	46.952	9.506	14.635	13.79	17.96
Primary Food Processing					
Crop	0.000	0.000	0.000	0.00	0.00
Dairy	0.000	0.000	0.000	0.00	0.00
Meat	0.000	0.000	0.000	0.00	0.00
Sum of Primary Food Proc.	0.000	0.000	0.000	0.00	0.00
Other Food/Ag Processing					
Animal and Pet Foods	0.000	0.000	0.000	0.00	0.00
Other Food Processing	0.685	0.097	0.139	0.13	0.17
Sum of Other Ag Proc.	0.685	0.097	0.139	0.13	0.17
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0.000	0.000	0.00	0.00
Farm Machinery	0.741	0.261	0.311	0.29	0.38
Sum of Ag Input Mfg.	0.741	0.261	0.311	0.29	0.38
Sum of All Agri-food Ind.	48.377	9.863	15.085	14.21	18.51
NonAg Industries	112.000	51.619	66.393	62.54	81.49
Household Consumption	39.049	113.135	24.682	23.25	30.29
Totals	199.427	174.617	106.160	100.00	130.29

* Numbers represent millions of dollars

Table 4 shows a different aggregation of the county's industrial output. Table 4 is derived from the same data as is Table 3, and total values for Table 4 are identical to total values for Table 3. The difference is the point at which values were counted. In Table 3, values were counted in each industry where productive activity took place. In Table 4, values were counted at the industry that made the final export (out-of-county) sale of goods and services produced⁶. This is final demand analysis. It helps illustrate the magnitude of inter-industrial linkages and the value of those linkages to local income generation from export sales⁷.

⁶ Goods not sold out of county were counted under the heading of "Household Consumption" and not in industry totals in Table 4.

⁷ The point at which final products are sold out-of-county was chosen as an endpoint because it coincides with the point at which industrial output brings revenue into the county. This point also avoids problems

Table 4 reallocates all industrial activity in the county to the sectors producing goods for sale beyond the county's borders (export sale). This means that if there is a local meat packer that purchases all of its live cattle from local farmers, the output value, value-added, and personal income generated in the production of those cattle is aggregated up to the meat packing industry. Similarly, the value of locally produced farm machinery purchased for use on local farms is not included in the aggregation under farm machinery, but is subsumed under agricultural production (and partially subsumed, again, into food processing if the farm output that it was used to produce passes through local food processors on its journey to final sale outside of the county). In a nutshell, the output, value-added, and income estimates in Table 4 estimate the total share of the local economic activity utilized to generate final output from the agri-food sectors.

Under this aggregation, the total exported output value of locally produced goods and services supporting Decatur County's agricultural production industry was \$46.952 million. \$14.635 million of this output (31.17 percent of the total output value) was the value added to the output by economic activity within Decatur County (value added). The remainder came from inputs purchased from out-of-county sources. 64.95 percent of this value added, or \$9.506 million, was paid out as personal income to residents of Decatur County that were involved (as workers, owners, investors, etc) in these activities.

If we add food and other ag processing and ag input manufacturing to agricultural production, the export value of goods and services supporting Decatur County's agri-food industry output was \$48.377 million, or 24.26 percent of Decatur County's total industrial production. Of this, \$15.085 million (31.18 percent) was value added within these industries in Decatur County. \$9.863 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Decatur County's agri-food industries accounted for 24.26 percent of the county's total output, 14.21 percent of total value added, and 5.65 percent of the county's personal income.

Table 5. Crop Statistics From the U.S. Census of Agriculture

	Decatur County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	41,980	55,021	12,273,634	12,162,165
Value of Crops Sold*	14,418	14,686	6,071,272	6,381,676
Total Cropland Harvested (acres)	96,216	91,684	23,994,343	24,008,826
Corn for grain	26,741	25,375	11,761,392	11,930,542
Corn for silage and green-chop	1,342	1,201	247,269	244,913
Soybeans	33,101	29,622	10,418,621	10,258,681
Oats	393	772	143,513	214,485
Harvested forage crops	36,336	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	3,464,824	2,859,248	1,851,276,224	1,581,093,092
Soybeans	1,334,791	1,288,648	487,380,897	459,309,682
Oats	21,898	41,169	10,761,952	14,451,930

* Values are in \$1,000s

that would accompany trying to separate local household consumption between that which consumes local food products and that which consumes food products imported from outside the county.

Table 5 shows Decatur County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Decatur County livestock. Data in both tables comes from the US Census of Agriculture. In both tables “(NA)” entries denote categories where data was not collected or compiled, and “(D)” entries designate that data was collected but results were suppressed to comply with personal disclosure restrictions.

Table 6. Livestock Statistics From the U.S. Census of Agriculture

	Decatur County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	41,980	55,021	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	27,563	40,335	6,202,362	5,780,489
Hogs and Pigs				
Total inventory	36,344	39,155	15,486,531	14,513,319
Inventory of breeding stock	1,737	5,355	1,145,323	1,354,166
Number sold	96,714	58,876	41,232,492	27,340,921
Value of sales*	8,427	7,199	3,078,455	3,012,764
Cattle and Calves				
Total inventory	48,838	63,352	3,535,945	3,717,394
Beef cows	24,852	24,062	987,670	1,051,178
Milk cows	528	235	206,965	222,090
Number sold	28,999	51,316	2,929,704	2,936,978
Value of sales*	17,664	32,024	2,119,935	1,886,416
Value of Dairy Products Sold*	1,071	459	442,431	407,897
Poultry and Poultry Products				
Value of sales*	57	17	511,949	414,587
Inventory of layers 20 weeks and older	613	430	38,650,210	21,514,768
Broiler and meat-type chicken inventory	540	859	1,730,091	1,023,349
Broiler and meat-type chickens sold	(D)	250	9,558,127	6,919,963
Turkey inventory	57	28	3,681,862	2,552,845
Turkeys sold	(D)	-	9,145,415	7,279,822
Sheep and Goats and Related Products				
Value of sales	66	(NA)	23,366	(NA)
Inventory of sheep and lambs	937	1,451	249,908	272,913
Number of sheep and lambs sold	845	6,341	257,130	326,868

* Values are in \$1,000s

The first three data columns of Table 7 show aggregated annual earnings in thousands of dollars from farm employment, nonfarm employment, and totals employment in Decatur County from 1990 through 2003. The values are not adjusted for inflation. Note that nonfarm earnings steadily rise throughout the period. Total earnings rise, but with somewhat more variation. Farm earnings swing significantly from year-to-year. This is typical of earnings in economies with a substantial ag production sector.

The final three data columns of Table 7 show the data again. In Table 7, however, the data is differenced year-by-year. Entries for 1991, for example, are the difference between, change from, 1990 to 1991. Positive numbers denote unadjusted growth. Negative numbers denote unadjusted decline. This representation shows that nonfarm earnings tend to be growing over time, causing total earnings to trend upward over time. The variability in this growth, however, is strongly associated with the variability of farm earnings. This is due to the weather and market factors that make production agriculture returns highly variable (which is also true of many basic mining industries).

While ag production's growth in most areas is limited by the availability of suitable land, its variability has a substantial effect upon rural areas. Even in urbanized areas, the difference between a good earnings year and a bad earnings year is often heavily influenced by conditions affecting agricultural production and marketing.

A more detailed state-level discussion and illustrations are included in the state report on pages 22 through 24.

Table 7. Annual Earnings and Annual Earnings Changes

Year	Annual County Earnings by Source			Annual Changes in County Earnings		
	Farm	Nonfarm	Total	Farm	Nonfarm	Total
1990	6,651	50,889	57,540	(NA)	(NA)	(NA)
1991	6,858	50,580	57,438	207	-309	-102
1992	9,268	50,897	60,165	2,410	317	2,727
1993	5,365	55,140	60,505	-3,903	4,243	340
1994	11,273	58,889	70,162	5,908	3,749	9,657
1995	2,548	57,064	59,612	-8,725	-1,825	-10,550
1996	11,247	57,630	68,877	8,699	566	9,265
1997	13,202	63,190	76,392	1,955	5,560	7,515
1998	4,718	68,463	73,181	-8,484	5,273	-3,211
1999	6,213	70,070	76,283	1,495	1,607	3,102
2000	11,318	72,398	83,716	5,105	2,328	7,433
2001	5,231	71,159	76,390	-6,087	-1,239	-7,326
2002	5,430	71,632	77,062	199	473	672
2003	5,591	74,465	80,056	161	2,833	2,994

Data from the US Bureau of Economic Analysis