

St. Joseph County Agriculture

Past, Present and Future



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Introduction

Past, Present and Future was originally developed by Gale Arent, Kalamazoo County Extension Director. That document was published in 1982 for the residents and decision makers of Kalamazoo County. The idea behind the publication was to provide individuals within the community a resource of information about Kalamazoo agriculture and its many related industries. More importantly, many decision makers had become somewhat removed from the local food system and providing a vehicle for them to keep current was of utmost importance because many of their decisions would have a direct impact on the ability of the agricultural community to maintain that food system. The need to supply this kind of information was important then, and is perhaps even more important today. So, in St. Joseph County, in the year of 2006, we re-introduce *Past, Present and Future*, but do so emphasizing our own county's agricultural community.

As you go through this publication we hope that the information provided will enlighten you and perhaps give you the opportunity to reflect on the importance of agriculture in St. Joseph County. Today, many of us take for granted one of the foundations that makes this country so strong - a plentiful, safe, and cheap food supply. Less than 2% of our population supplies the food for the remaining 98%, allowing for the division of labor that has heightened the strength and productivity of our economy. Our farmers have provided us the luxury of knowing at almost any time or place we can find just about any type of food we might prefer.

It is our hope that *St. Joseph County Agriculture: Past, Present and Future* will further edu-

cate you about this county's food system and demonstrate the strengths that make agriculture unique in St. Joseph County. Perhaps the next time someone asks you about your community, particularly about farming, you can share some of the facts, figures, and ideas you discovered in this reference publication.

Executive Summary

Michigan's agricultural economy is extremely diverse, ranking second in the nation in terms of agricultural product diversity, and proving Michigan's capacity for agricultural production. So too is the variety of agricultural products raised and produced in St. Joseph County. The uniqueness of our location along with our very important access to abundant ground and surface water, unique soil types, and moderate summer temperatures, makes agricultural production especially important in this region. Nearly 70% of the land area of the county is dedicated to agricultural use with 907 farms producing over \$94 million worth of agricultural products yearly. Part of the strength of the agricultural economy in St. Joseph County is due to our capacity for irrigation. In fact, St. Joseph County has more irrigated land than any other county east of the Mississippi River. Specialty crops such as seed corn, snap beans, potatoes, and pickles would not be part of this agricultural community if not for our location and access to abundant groundwater. For instance, the seed corn industry, one of St. Joseph County's strongest, produces two million bags of seed corn a year, valued at more than \$192 million and used to plant more than six million acres of commercial corn. These are interesting and impressive figures about the agricultural community in your very own St. Joseph County. We hope you enjoy your tour of *St. Joseph County Agriculture: Past, Present and Future*.

St. Joseph County Agriculture:

Past, Present and Future

by Maury Kaercher, MSU County Extension Director



St. Joseph County Agriculture: *Past, Present and Future*

by Maury Kaercher, MSU County Extension Director



St. Joseph County Agriculture and the US Food System

St. Joseph County agriculture has experienced a number of changes. Long-time county residents have firsthand experiences with this change. Agriculture was once characterized by traditional crops such as corn and soybeans that fed a large livestock industry. The transition from dry-land farming to an increased reliance on water has made this county a completely different kind of commodity grower.

Change can be difficult for many people, but as we all learn, change is inevitable. This process has at times met some resistance; however, most change was, and continues to be driven by the need for agriculture to stay current and remain profitable.

As we reflect about past days we think of the first time single-cross corn hybrids were introduced, the use of commercial fertilizer, application advanced pesticides and the addition of innovative technology. All of these new technologies were viewed with some skepticism; however, over time they have also been readily accepted as positive tools for producing the safest, cheapest, and most abundant food system in the world.

One can easily reflect on the numerous changes in agriculture, and if you were a part of the industry, realize how short of time it took to make the adaptations. Each American farmer produces enough food to feed 135 people while just 20 years ago that number was 72. We eat better, have more food available, and spend less of our household income on food than any other nation in the world, and do this on fewer acres.

Total Food Expenditures as a Share of Disposable Income

1942 – 19%

1962 – 17%

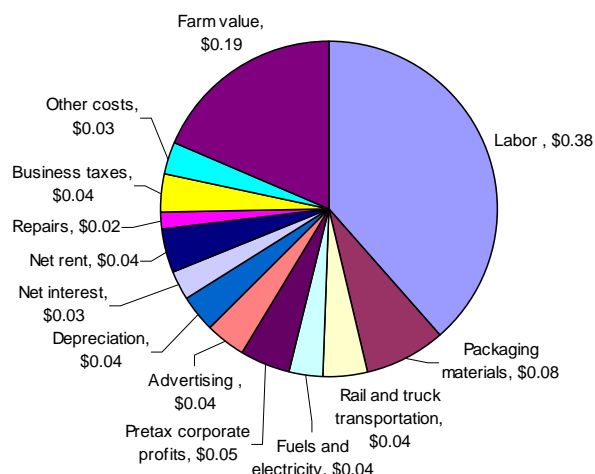
1982 – 13%

2002 – 10%

Source: <http://www.ers.usda.gov/>

While the share of the American budget devoted to food has decreased over time, total consumer expenditures on food have increased in the last 30 years. At the same time, farm value, or the aggregate price received by farmers, has decreased slightly. The difference between the two is the marketing bill for farm foods.

What a Dollar Spent on Food Paid for in 2002



Source: USDA, ERS

As the chart above shows, labor comprises the largest portion of costs, with \$0.38 of every dollar spent on food going to labor. Farm value is the second-largest component of the food dollar and accounts for \$0.19 of every dollar spent on food.

Between 20 and 23 million people work in some phase of agriculture in the United States – from growing food and fiber to selling at the supermarket. Agribusiness suppliers represent 2.1 million, farming 3 million, marketing (storing, transporting, processing, and merchandising) 3.2 million, and those involved with wholesale and retail trade 15.2 million.

Michigan Agriculture

In Michigan more than 732,000 people work in farm and farm-related sectors of the economy. Nearly 71,000 of these workers are farm proprietors or wage and salary farm workers. Another 63,000 employees work in agricultural services, inputs, and processing roles in the state, with nearly 586,000 employed in agricultural wholesale and retail trade, and more than 12,000 working in indirect agribusiness (USDA, Economic Research Service).

Over 50 food crops and over 200 agricultural commodities are produced commercially in Michigan. In 2002, Michigan placed among the top 10 states in the production and processing of 58 food items. Some of these food items are:

1 st	Beans, dry, black, <i>cwt (hundred weight)</i> Beans, dry, cranberry, <i>cwt</i> Beans, dry, light red kidney, <i>cwt</i> Beans, dry, navy, <i>cwt</i> Beans, dry, small red, <i>cwt</i> Blueberries, <i>pounds</i> Cherries, tart, <i>pounds</i> Cucumbers (for pickles), <i>tons</i> Flowering hanging baskets, <i>number</i> Geraniums (seed and cuttings), <i>pots</i> Impatiens, <i>flats</i> Petunias, <i>flats</i>
2 nd	Beans, dry, all, <i>cwt</i> Carrots (fresh market), <i>cwt</i> Celery, <i>cwt</i> Hosta, <i>pots</i> Marigolds, <i>flats</i>
3 rd	Apples, <i>pounds</i> Asparagus, <i>cwt</i> Beans, dry, dark red kidney, <i>cwt</i> Cucumbers (fresh market), <i>cwt</i> Grapes, Niagara, <i>tons</i> Other potted perennials, <i>pots</i> Vegetable type bedding plants, <i>flats</i>
4 th	Beans, snap (processing), <i>tons</i> Carrots (processing), <i>tons</i> Cherries, sweet, <i>tons</i> Grapes, all, <i>tons</i> Grapes, Concord, <i>tons</i> Squash, <i>cwt</i> Sugarbeets, <i>tons</i> Tomatoes (processing), <i>tons</i>
5 th	Plums, <i>tons</i> Pumpkins, <i>cwt</i>
6 th	Maple syrup, <i>gallons</i>
8 th	Milk, <i>pounds</i>
10 th	Potatoes, <i>cwt</i>

Source: <http://www.nass.usda.gov/mi/>



Past, Present, and Future

Michigan's agricultural economy is extremely diverse. Michigan ranks second in the nation in terms of agricultural product diversity. Only the state of California produces a greater variety of agricultural products than Michigan, proving Michigan's capacity for agricultural production.

Michigan's agricultural industry adds \$60.1 billion to the state's economy annually. On farm production accounts for approximately 7.5% of this economic impact, or \$4.5 billion in total market value of agricultural products. In 2002, Michigan ranked 22nd among the states in terms of total market value of agricultural products sold. The production and sale of milk, soybeans, corn, cattle, hogs, annual bedding plants, and woody ornamentals provide the highest cash receipts for the state.

St. Joseph County Agriculture

The farmers, agricultural suppliers, and related industries in St. Joseph County are an integral part of the local economic fabric. The uniqueness of its location along with our very important access to large quantities of rechargeable water, unique soil types, and moderate summer temperatures, makes agricultural production especially important in this region. Specialty crops such as seed corn, snap beans, potatoes, and pickles would not be part of this agriculture community if not for the location and access to abundant groundwater.

In St. Joseph County, nearly 70% of the county's 333,293 acres are in agricultural use. Nearly 60% of this agricultural land is used for row crops, while 14% is in pasture/hay. This amounts to 237,004 acres of land devoted to agriculture. Interestingly, open water covers a little more than 3% of St. Joseph County, more than any other Michigan county.

Acres of Irrigated Land

	1997	2002
St. Joseph County	94,999	103,980
Michigan	407,071	456,278
% in St. Joe County	23.34%	22.79%

Source: <http://www.nass.usda.gov/>

Of the county's agricultural land, 44% is irrigated, mostly with center pivot systems. This impressive figure amounts to 103,980 acres in the county with irrigation capabilities. Of all the irrigated land in Michigan, St. Joseph County contains nearly 23% of the state's irrigated land. Even more impressive is the fact that St. Joseph County contains more irrigated land than any other county east of the Mississippi River.

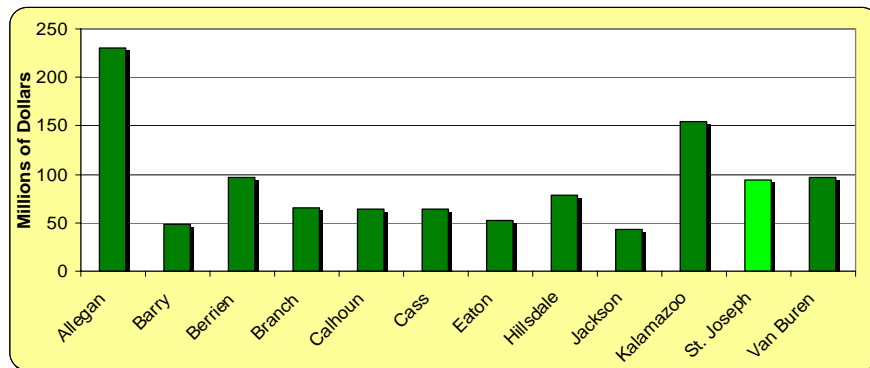


Center Pivot Irrigation, St. Joseph County

St. Joseph County Agriculture

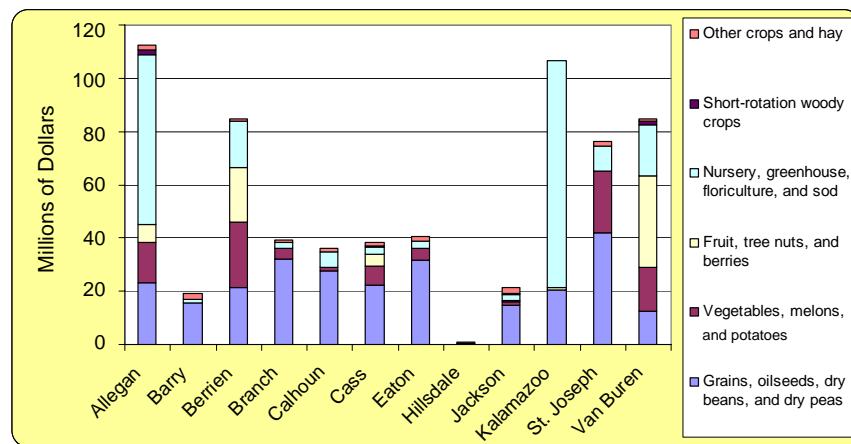
In 2002, St. Joseph County had 907 farms and employed 1,136 residents directly in agricultural production (Bureau of Economic Analysis, 2002). These farms produced \$93.7 million worth of agricultural products, making St. Joseph County 15th among all Michigan counties. Allegan County ranked second in the state with \$230 million worth of agricultural products sold in 2002, and Kalamazoo County ranked fourth, largely due to the greenhouse industry, with \$155 million worth of agricultural products sold.

Total County Sales of Agricultural Products, 2002



While St. Joseph County ranks fifth among southwest Michigan counties in terms of total crop sales, the county leads the region in production and sales of grains and specialty crops such as seed corn. In fact, St. Joseph County is the centerpiece for seed corn production, a sector that provides more than \$125 million in local economic activity. It also provides more than 5,000 people with full or part-time employment and produces more than two million bags of seed corn (valued at more than \$192 million) that are used to plant more than six million acres of commercial corn. St. Joseph County agriculture has also seen steady growth in soybean production, with more than 10,000 additional acres and 505,000 additional bushels of soybeans harvested in 2002 than in 1997. Higher value specialty (clear hilum) soybeans grown for the tofu market make up a portion of this increase. Additionally, St. Joseph County is second to Berrien County in production and sales of vegetables, melons and potatoes. The amount of land dedicated to potatoes has also grown by more than 3,000 acres, with quantity harvested increasing by 1,095,798 cwt from 1997 to 2002.

Total County Crop Sales, 2002

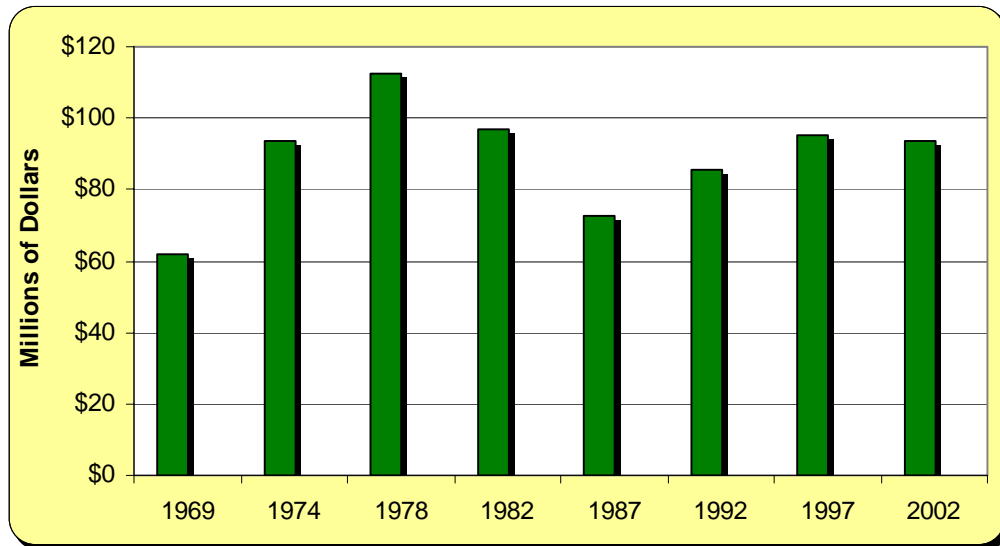


Source: <http://www.nass.usda.gov/>



Value of Products Sold

(adjusted to 2002 prices using Federal Reserve Bank of Minneapolis Consumer Price Index Calculator)



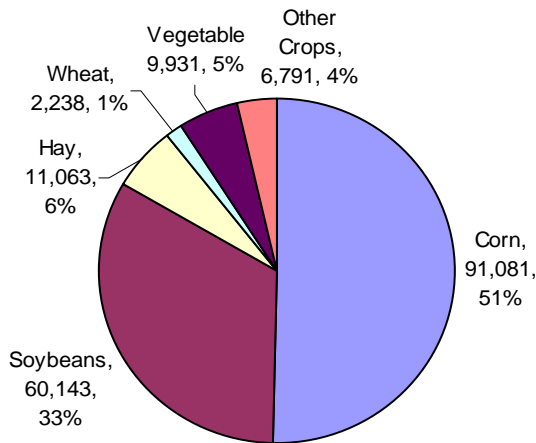
Source: <http://www.nass.usda.gov/>

From 1969 to 2002 the value of agricultural products sold in St. Joseph County increased by nearly 45%. Since 1987 the value of agricultural products sold has increased by 29% to \$93.7 million.

Total Ag Products Sold in St. Joseph County	\$93,660,000
Average per farm	\$103,264
Crops	\$76,068,000
Grains, oilseeds, dry beans, and dry peas	\$41,770,000
Vegetables, melons, and potatoes	\$23,187,000
Fruit, tree nuts, and berries	\$134,000
Nursery, greenhouse, floriculture, and sod	\$9,458,000
Short-rotation woody crops	\$48,000
Other crops and hay	\$1,471,000
Livestock, Poultry, and their Products	\$17,592,000
Poultry and Poultry Products	\$679,000
Dairy Products	\$3,637,000
Cattle and Calves	\$3,479,000
Hogs and Pigs	\$8,789,000
Sheep, Goats, and their products	\$183,000
Other Livestock and Livestock Products	\$825,000

Source: 2002 Census of Agriculture

Acres Harvested, 2002



Source: <http://www.nass.usda.gov/>

More than half of the cropland in St. Joseph County is dedicated to corn production, predominantly seed corn. As indicated on the previous page, the production of seed corn and other grains and seeds provide the largest cash receipt for the county. Corn production has remained relatively stable over the last 15 years, though the number of farms growing corn has declined. Vegetable production provides the second largest cash receipt while accounting for a relatively small amount of cropland.

Major Crops in St. Joseph County

	1987	1992	1997	2002
<u>Corn</u> (for grain and seed corn)				
Farms	653	564	479	367
Acres	79,798	107,668	94,519	90,549
Bushels	9,435,911	12,512,015	11,840,274	11,423,682
<u>Seed Corn</u> (included in corn totals listed above)				
Farms	n.a.	n.a.	320	295
Acres	n.a.	n.a.	46,000	52,000
<u>Wheat</u> (for grain)				
Farms	191	115	72	61
Acres	5,841	3,755	2,402	2,238
Bushels	242,451	137,120	119,090	109,571
<u>Soybeans</u>				
Farms	392	407	345	312
Acres	30,299	40,819	47,485	60,143
Bushels	1,166,632	1,449,697	1,912,228	2,508,245
<u>Dry beans</u>				
Farms	2	22	1	2
Acres	(D)	2,212	(D)	(D)
Hundredweight	(D)	37,523	(D)	(D)
<u>Hay-alfalfa</u>				
Farms	398	349	335	361
Acres	12,888	11,213	11,425	11,063
Tons (dry)	39,219	33,703	27,689	33,786
<u>Vegetables</u>				
Farms	29	65	68	69
Acres	2,669	7,376	9,763	9,931

(D) Withheld to avoid disclosing data for individual farms

Crops included based on data availability

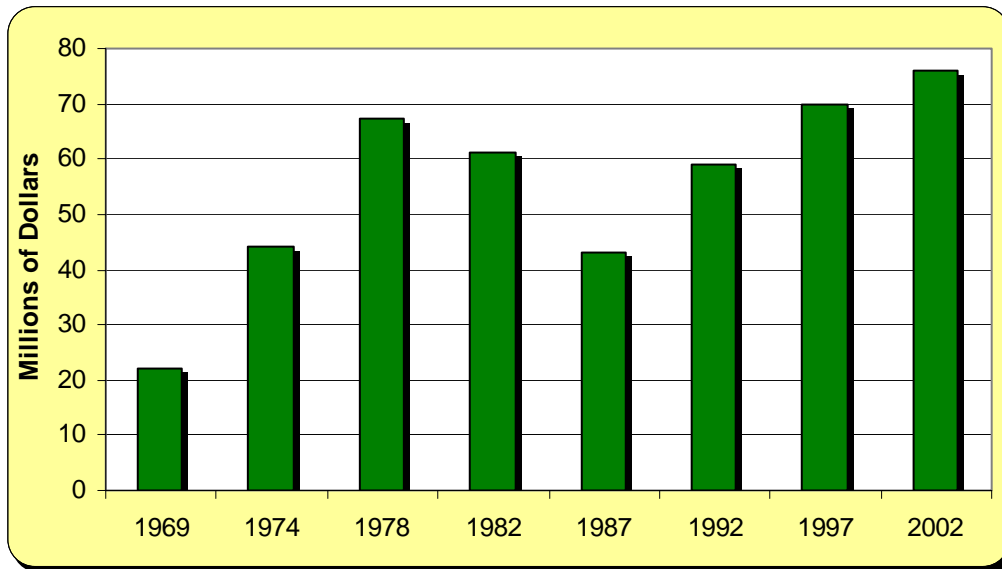
Source: <http://www.nass.usda.gov/> and <http://agcensus.mannlib.cornell.edu/>



Crop sales in St. Joseph County increased by 243% between 1969 and 2002 – compared to a 76% increase between 1987 and 2002.

Crop Sales for St. Joseph County

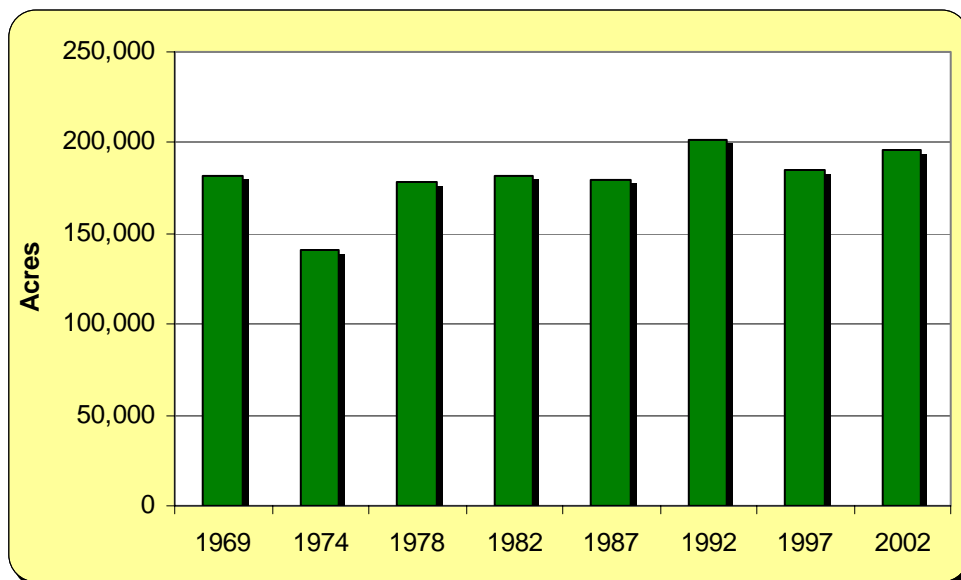
(adjusted to 2002 prices using Federal Reserve Bank of Minneapolis Consumer Price Index Calculator)



Source: <http://www.nass.usda.gov/>

Crop acreage has remained relatively stable over the past 30 years with 195,927 acres of St. Joseph County devoted to crops in 2002.

Acres of Crops Harvested in St. Joseph County



Source: <http://www.nass.usda.gov/>

St. Joseph County Agriculture

Since 1969 total livestock sales in St. Joseph County have decreased by 59%. It is important to note that this decrease corresponds to an increase in irrigation, which has allowed crop producers to diversify their operations. Producers' abilities to attract commodity has offered the agricultural community more options than other Michigan counties. In addition, as we look into the future there is every

reason to believe that the livestock industry will increase in numbers. This increase in livestock may come with crop producers' increased demand for nutrients produced by livestock, which will be better used for crop production due to greater technological advances.

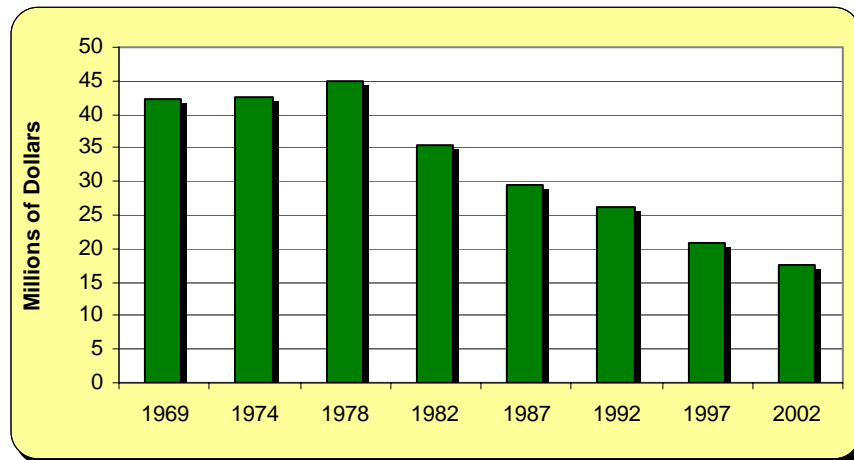
Inventory of Livestock

Type of Livestock	1987	2002	Change
Cattle and Calves	14,045	7,603	-46%
Beef Cows	1,401	1,401	0%
Milk Cows	3,833	1,040	-73%
Swine	48,628	33,898	-30%
Sheep and Lambs	2,051	3,461	69%
Hens and Pullets	90,216	36,455	-60%

Source: <http://www.nass.usda.gov/>

Livestock Sales for St. Joseph County

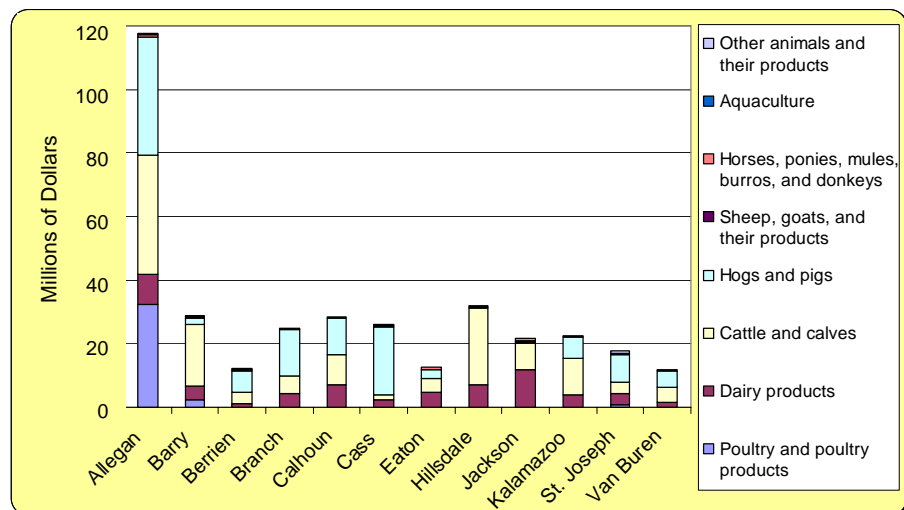
(2002 prices using Federal Reserve Bank of Minneapolis Consumer Price Index Calculator)



Source: <http://www.nass.usda.gov/>

In 2002, St. Joseph County ranked ninth out of 12 southwest Michigan counties in livestock sales with nearly half of total livestock sales attributed to swine production.

Livestock Sales for Southwest Michigan Counties, 2002

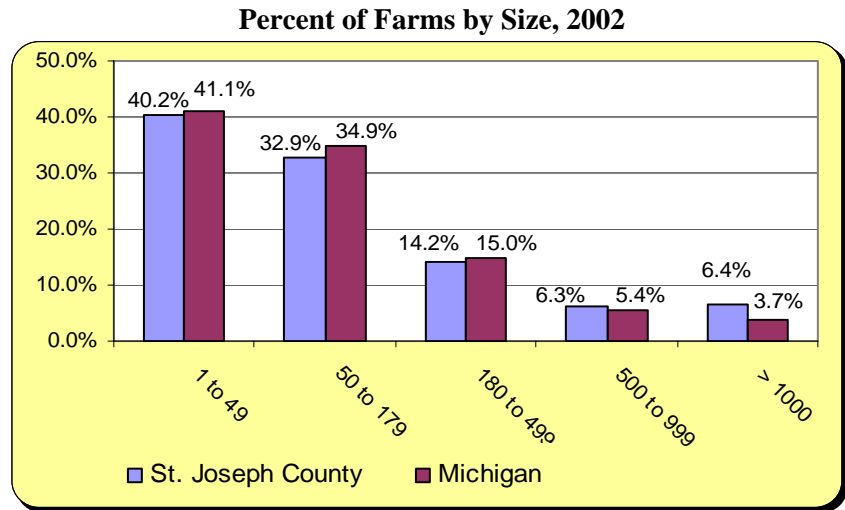


Source: <http://www.nass.usda.gov/>



Past, Present, and Future

In 2002, about 40% of St. Joseph County farms had fewer than 50 acres. In contrast, 6.4% were larger than 1,000 acres. The number of small farms (< 50 acres) has risen in the last 15 years, while the number of farms greater than 50 acres has remained relatively stable.

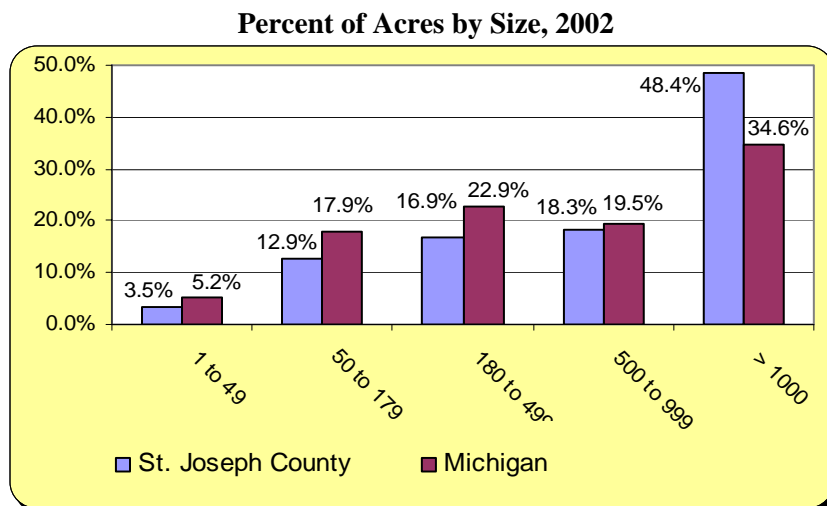


Source: <http://www.nass.usda.gov/>

<i>St. Joseph County Farms</i>	St. Joseph County		Michigan	
	1997	2002	1997	2002
Number of Farms	916	907	53,519	53,315
Land in Farms (acres)	230,145	230,624	10,443,935	10,142,958
Average Farm Size (acres)	251	254	195	190
Land Area (acres)		333,293		37,258,240
Percent in Farms		69.2%		27.2%

Source: <http://www.nass.usda.gov/>

In 2002, 3.5% of St. Joseph County farmland was used for farms of less than 50 acres. Farms greater than 1,000 acres held 48.4% of the county's farmland, substantially more than the statewide average of 34.6%. The table above also indicates that the average size of farms in St. Joseph County is substantially greater than the average Michigan farm size.

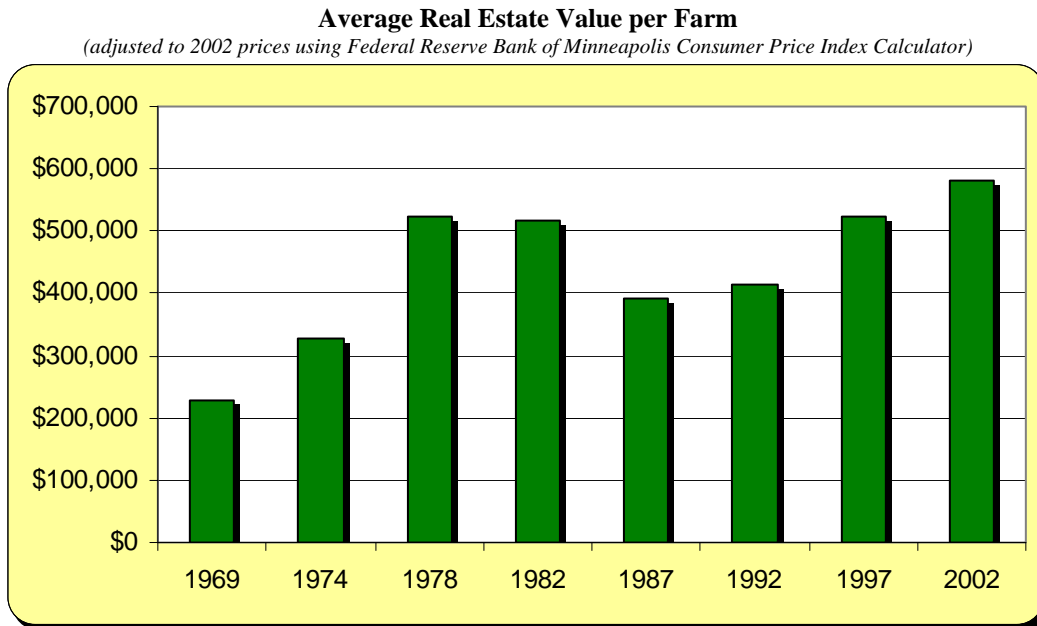


Source: <http://www.nass.usda.gov/>

In the last 15 years, the amount of farmland used by operations larger than 1,000 acres has risen steadily. Meanwhile, the share of farmland in farms less than 1,000 acres has decreased.

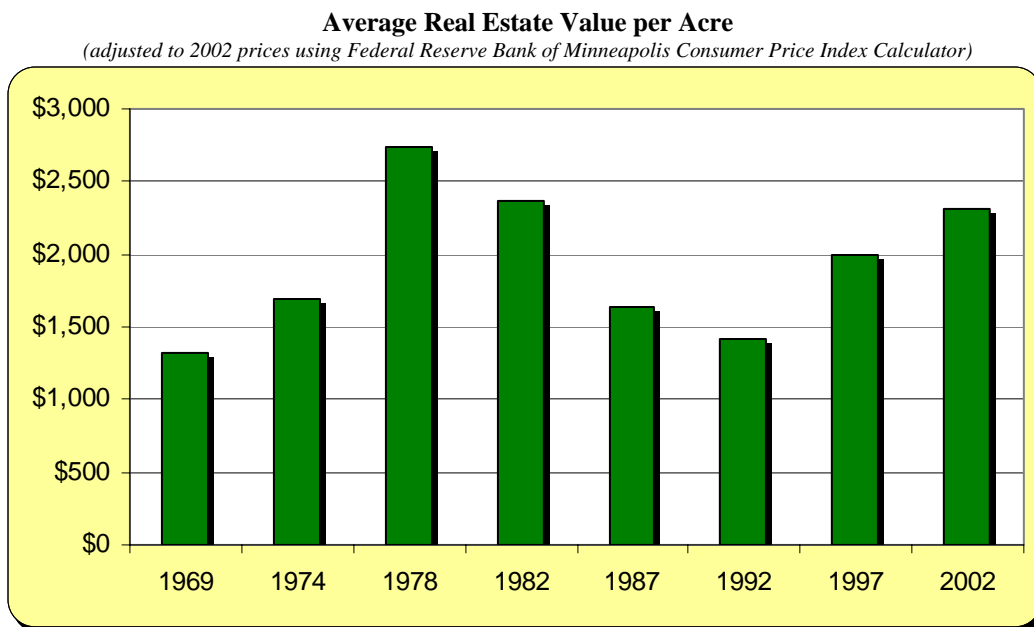
St. Joseph County Agriculture

St. Joseph County farmland values have increased more than 150% in the last 30 years with values increasing by 40% between 1992 and 2002.



Source: <http://www.nass.usda.gov/>

The per acre real estate value of St. Joseph County farmland increased 63% between 1992 and 2002. However, when comparing these numbers to the high in 1978, real estate value decreased 16% to \$2,314 per acre in 2002. Since 2002 there has been an increase in real estate values with agricultural land selling for upwards of \$3,500 per acre.



Source: <http://www.nass.usda.gov/>



Agriculture's Future

The need to find a mechanism to preserve our farmland and open space is important to maintain an important economic sector and a profitable food producing system.

Here are some futuristic changes facing agriculture.

Crop Technologies

Advanced irrigation technology will more efficiently conserve valuable water resources. Irrigation scheduling, low pressure irrigation systems, and Global Positioning Systems (GPS) will increase crop production with less water, resulting in better use of pesticides and fertilizers and result in higher per acre yields.

- The use of GPS will help control individual sprinkler heads directly related to each soil type in the field.
- New and improved hybrids including genetically modified organisms will lessen the need for herbicides and insecticides.
- Continued development of drought-tolerant hybrids will allow farmers to raise commodities on soils that have less moisture-holding capacity, like many of St. Joseph County's sandy soils.
- New and improved planters will place seed more uniformly and will rely on less commercial fertilizer while still improving yields.
- Hydroponics, an example of controlled-environment agriculture, can increase food production choices over a longer period.
- More corn and soybeans will be used for fuel (ethanol and bio-diesel), and their by-products will be used for feed. Today 14% of the fuel used is ethanol and in the next five years, that number may very well double. Plants high in cellulose will become the most efficient feedstock

source of ethanol production.

- Bio-diesel has been used by many local farmers for several years. B-100 may become a more significant energy source than ethanol, particularly as the auto industry moves more toward hybridization and/or the use of hydrogen engines. Continued research in this area will help increase processing by overcoming the bottleneck that currently exists in Michigan with respect to the utilization of the by-products of ethanol and bio-diesel production.

Mechanization Technologies

- Harvesting machines will be equipped with the latest GPS technology. This technology will allow growers to monitor yields and noxious weeds, which in turn will give an additional management tool for herbicide selection that is site specific to weed control and yields.
- Machine technology will ultimately computerize to the point that it will run without human assistance.
- Integrated Pest Management (IPM) will continue to be a valuable management tool for predicting the best time for insect control.
- Laser-guided tractors and irrigation equipment will function with computers.
- Fruit and vegetable harvesting will become mechanized, allowing less dependence on hand labor while increasing the capacity to harvest crops at increasing standards of quality.
- Satellite data will help predict crop yields, monitor soil erosion, predict pest and disease infestations and enhance growers ability to predict weather patterns. Future technology in this arena will allow the farmer to till the soil, plant, spray and irrigate at the same time.

Technologies in Animal Agriculture

Tomorrow's livestock will be superior as a result of today's advanced DNA research. DNA will be a precursor for identifying individual traits that in the past have taken 4-5 generations to derive. An example will be the use of a single hair on a newborn bull calf to determine whether it has the genetics to produce tender beef.

- Electronic identification will allow producers and consumers a way to track where their meat starts and finishes.
- DNA will help eliminate diseases that today require medicines and the potential for buildup of resistance.
- Vaccines will become increasingly important as diseases are identified that affect livestock performance and quality. Consumers will have a safer and more consistent product each time they eat.
- Improved use of manure management technology will enhance the farmer's ability to use nutrients.
- Reducing the dependence on commercial fertilizer will help farmers save money and protect the environment. Manure will be more valued as a major source of nitrogen, phosphorus, and potassium, which will reduce the need for commercial fertilizer and lower the use of petroleum products in producing these fertilizers.
- As we more clearly identify specific plant nutrient needs, refine our soil and manure testing and incorporate GPS, producers will be able to more accurately apply nutrients.
- The fertilizer industry will offer more highly refined blends that will ultimately reduce usage of commercial fertilizer.

- Implementing these technologies and being a good neighbor will ultimately enhance the image of agricultural producers within the non-agriculture community.
- Using corn to produce ethanol can help to decrease our dependence on foreign oil. It also results in a by product called distillers grain, which will be used to feed livestock. This byproduct will give livestock producers added feed stock choices that will help maintain necessary efficiencies.

International Agriculture

International agriculture will continue to be a major player in our cheap food policy but the answer to how it will affect American farmers and consumers lies in several questions. Will consumers care where their food is produced? Will they feel more comfortable knowing that their food is produced in the U.S. or will they accept other country's environmental policies that perhaps are less restrictive than the U.S.? Will consumers want the cheapest food or will they be willing to pay more for home-grown products? Pacific Rim countries like China, Japan, and Korea have great potential to be large importers of American agriculture food. Will American workers actively participate in trade agreements, which will give us more opportunity for added trade but perhaps allow more jobs to go international?

The data presented in this publication should help you think of the past, the present, and the future for U.S., Michigan and St. Joseph County agriculture. This report should give you a better understanding and appreciation for today's agriculture and the potential for tomorrow.

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