



What Does the 2017 Census of Agriculture Tell Us About Indiana Agriculture?

Ariana Torres
Purdue Horticulture Business
hort.purdue.edu/HortBusiness

Purdue Horticulture
and Landscape Architecture
ag.purdue.edu/HLA

Purdue Agricultural Economics
ag.purdue.edu/AgEcon

The U.S. Department of Agriculture released the results from the 2017 Census of Agriculture in 2019. The purpose of this publication is to utilize data from the 2017 Census of Agriculture to

1. Report on the main trends of Indiana agriculture,
2. Focus on the main trends in the specialty crops industry, and
3. Provide an overview of the 2017 production and sales of vegetables, fruits, and nuts in the state of Indiana.

The Census of Agriculture

The Census of Agriculture is a complete count of U.S. farmers, ranchers, and the operations they manage. Operations included in the census are those that

reported \$1,000 or more of produced and sold agricultural products. The National Agricultural Statistics Service (NASS) mailed the questionnaire to collect data for the 2017 calendar year. Results from the Census of Agriculture were released in April 2019. Data collection and statistical methods allow comparison of most of the 2017 Census results with previous years' results. Dollar figures are expressed in dollars at the time of the survey, and have not been adjusted for inflation or deflation.

Main Trends of Indiana Agriculture

The total number of all farm operations in Indiana has reached its lowest level in the last 20 years, decreasing from 66,707 operations in 1997 to 56,649 operations

in 2017 (Figure 1). But this declining trend is not true for all farm sizes. For example, very small farms (<10 acres) and small farms (10 to <50 acres) have increased by 14 and 33 percent in the last 20 years, respectively. On the other hand, medium-to-large operations (50 to <1,000 acres) decreased, and the number of very large operations (1,000 acres or more) has remained somewhat stable. Roughly 14 percent of Indiana farms operated on less than 10 acres, 79 percent operated between 10 and <500 acres, and only 7 percent operated on 1,000 acres or more.

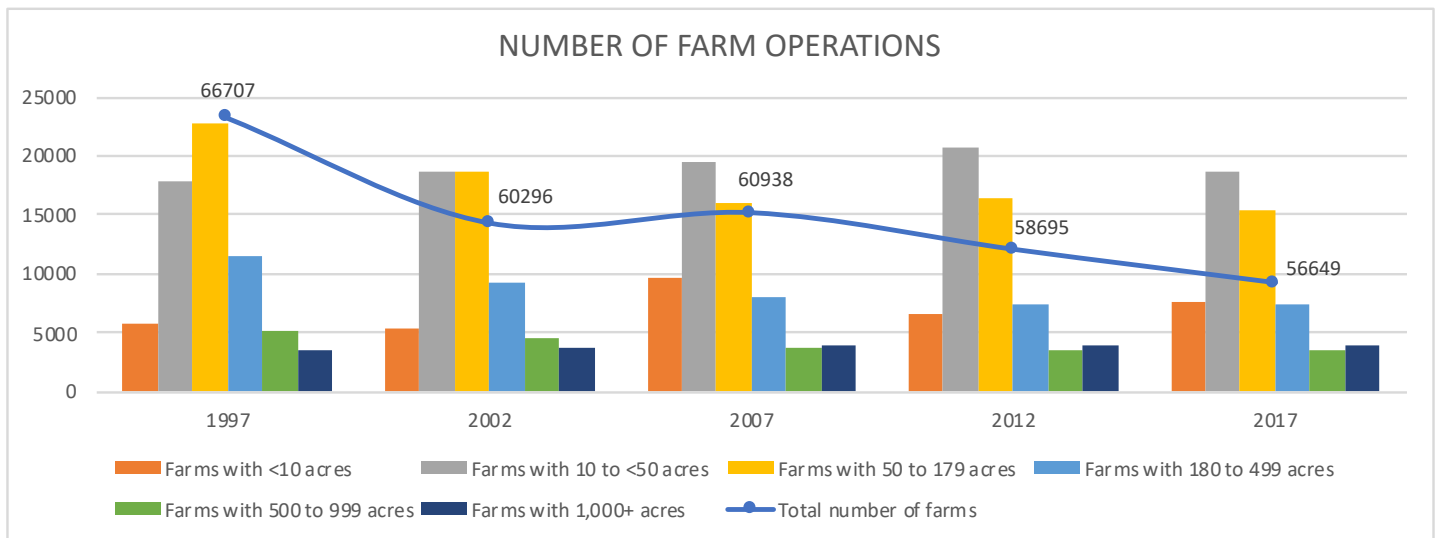


Figure 1. Total number of Indiana farm operations decreased by 15% in the last 20 years.

One way to look at Indiana agriculture is by the number of operations. Another picture is presented by the acreage farmed. Land in farms include cropland and pastureland, and excludes woodland pasture. While the total number of Indiana farms has decreased, the acreage farmed has increased in the past 10 years, almost to the level of 2002 (Figure 2). An explanation of these opposing trends is that Indiana farms may be aggregating, resulting in fewer larger operations, as a way to respond to the changing market trends.

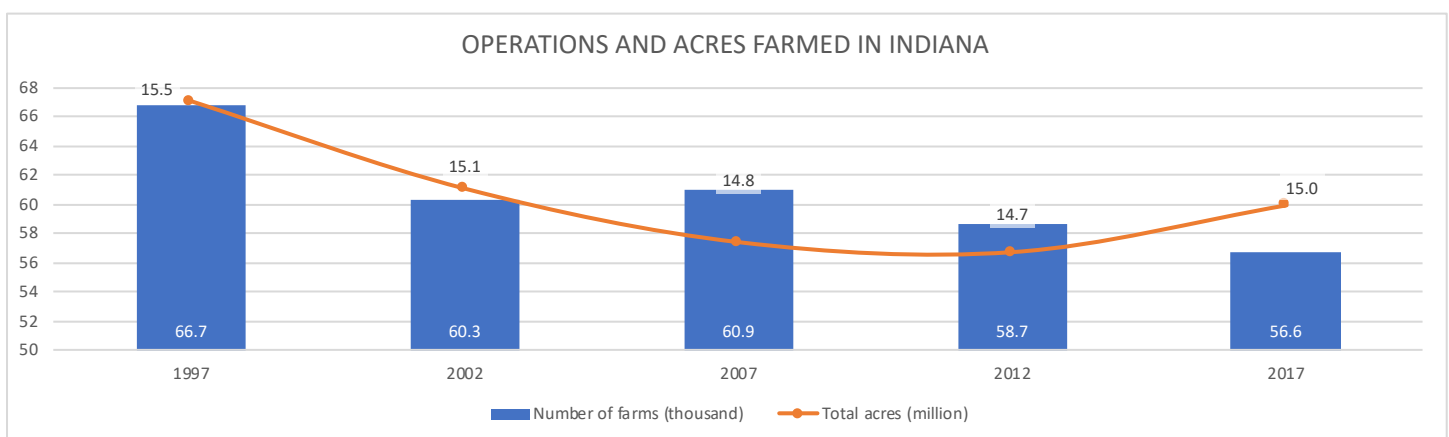


Figure 2. Total farmland in Indiana reaches 15 million acres in 2017.

Another way to look at the state of Indiana agriculture is by the commodity sales of farms (Figure 3). Farm sales have reached over \$11 billion, the highest level in the past 20 years. Yet, this trend is not true for every operation size. Commodity farm sales almost doubled for operations with \$250,000 or more in sales in 2017, but decreased for operations with sales <\$10,000 (28 percent) and for those with sales between \$10,000 and <\$250,000 (29 percent). Thus, it seems that larger operations are capturing most of the growth in sales of agricultural commodities, which may be related to advantages from economies of scale.

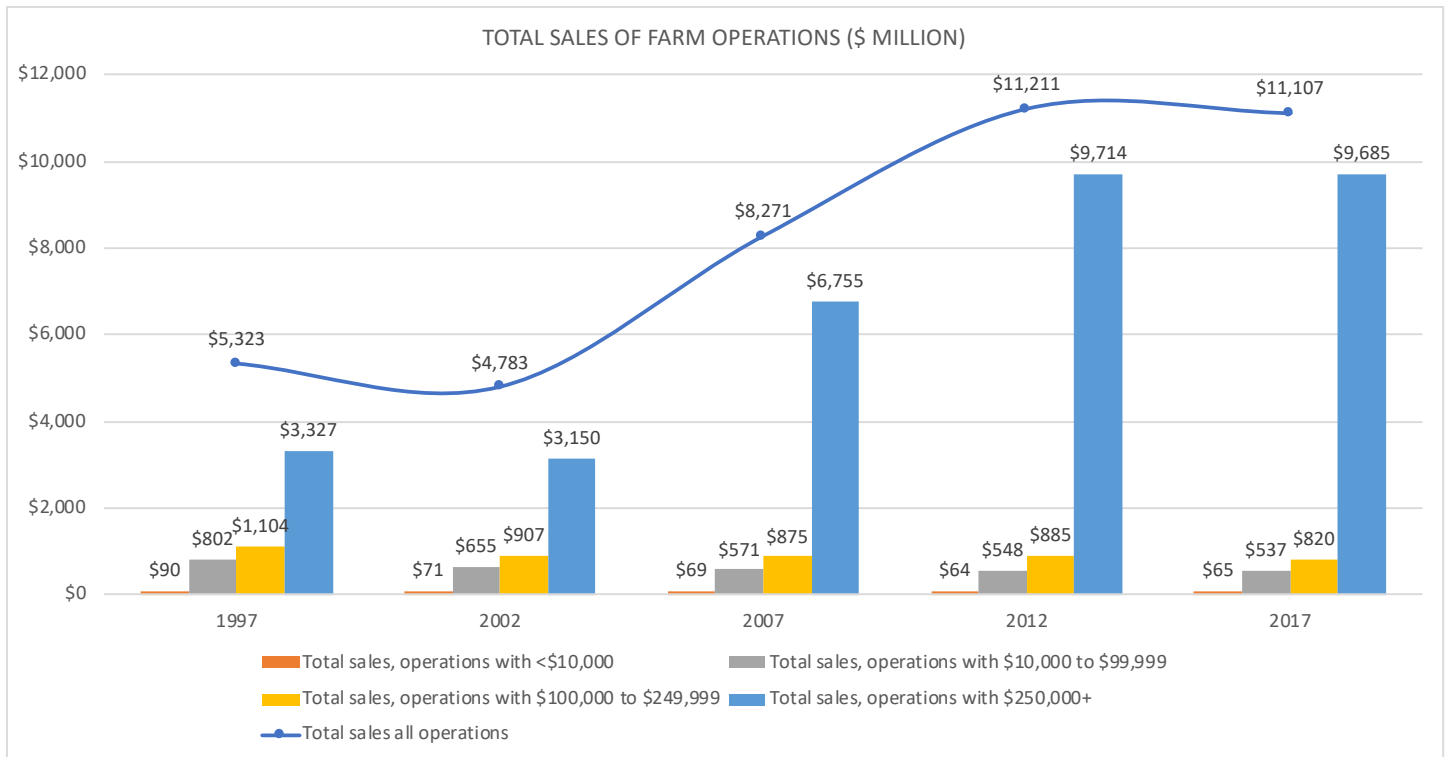


Figure 3. Farm sales of larger farm operations have almost doubled in 20 years.

Local sales of agricultural products for human consumption through direct-to-consumer (DTC) and intermediate channels reached \$35.9 million and \$80.4 million in 2017, respectively (Figure 4). Intermediate markets are typically regional and local outlets such as institutions (e.g., schools and hospitals), food hubs, and selling directly to local and regional retailers. Data from the census reports that 3,235 operations sold commodities (including value-added products) directly to consumers, and only 528 farmers sold through intermediate markets to locally and regionally branded retailers, wholesalers, institutions, and food hubs. These numbers highlight that the volume of produce sold through intermediate channels is bigger and shared among few producers.

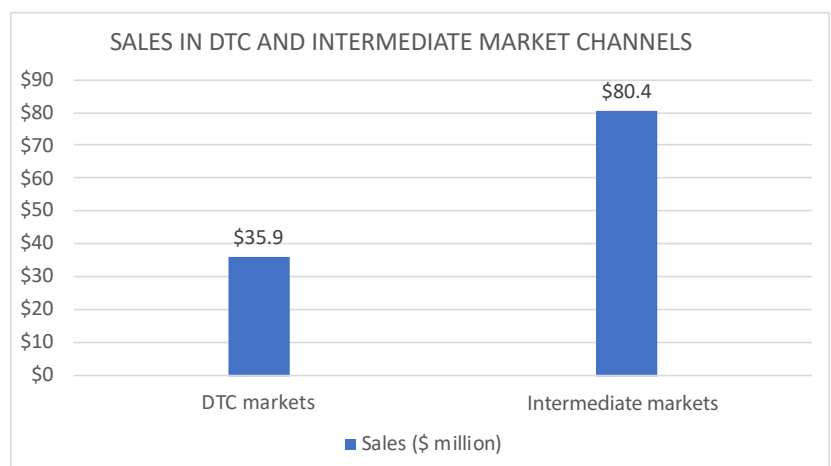


Figure 4. Sales to intermediate markets were almost twice sales directly to consumers.

Another increasing trend in Indiana agriculture is certified organic production, which is gaining in popularity among Indiana farmers and buyers (Figure 5). The report on organic agriculture includes sales and number of operations of certified, transitioning to certified, and exempt operations (those with less than \$5,000 gross annual organic sales). Number of certified and exempt operations, transitioning farms, and commodity sales showed increases when compared to 2012. The highest increase was observed in sales of certified organic products, which reached a value of \$75.5 million in 2017. Number of certified and exempt operations increased by 103 percent, while the number of transitioning operations increased by 14 percent, when compared to 2012.

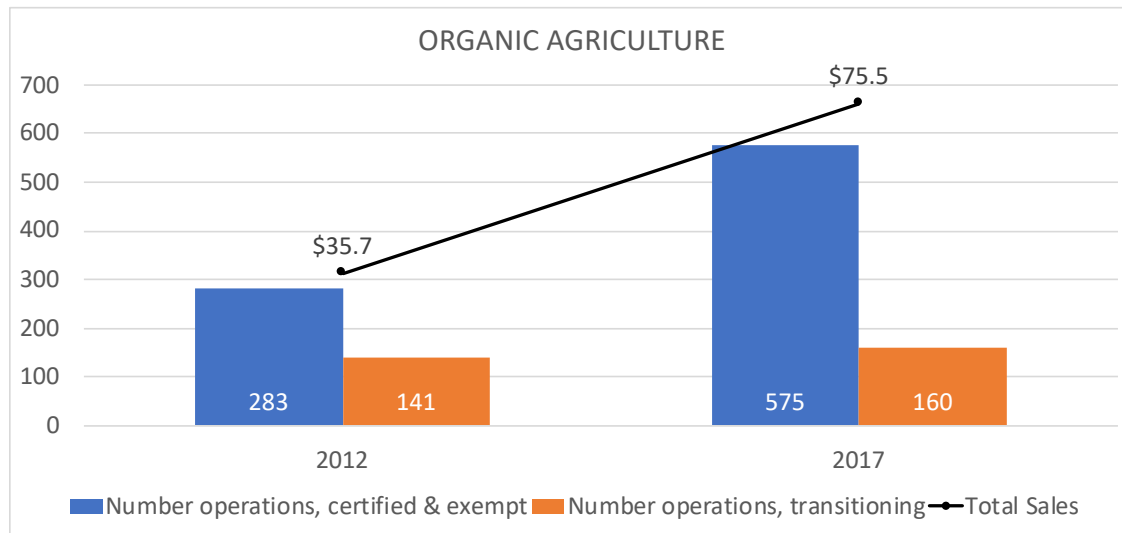


Figure 5. Organic sales, number of certified and exempt farms, and transitioning operations increased in the past 5 years.

Labor trends in Indiana agriculture shows opposing findings (Figure 6). Hired labor expenses for all operations showed an increasing trend in the past 20 years (80 percent increase) to a total of \$541 million paid in wages in 2017. However, the number of operations with hired workers and the number of hired employees decreased by 7 and 23 percent in the same period, respectively. These trends may illustrate how increasing labor wages can affect the ability of farm owners to hire employees, especially for smaller operations. Labor expenses reported in the census include gross salaries and wages, commissions, dismissal pay, vacation pay, and bonuses paid to employees.

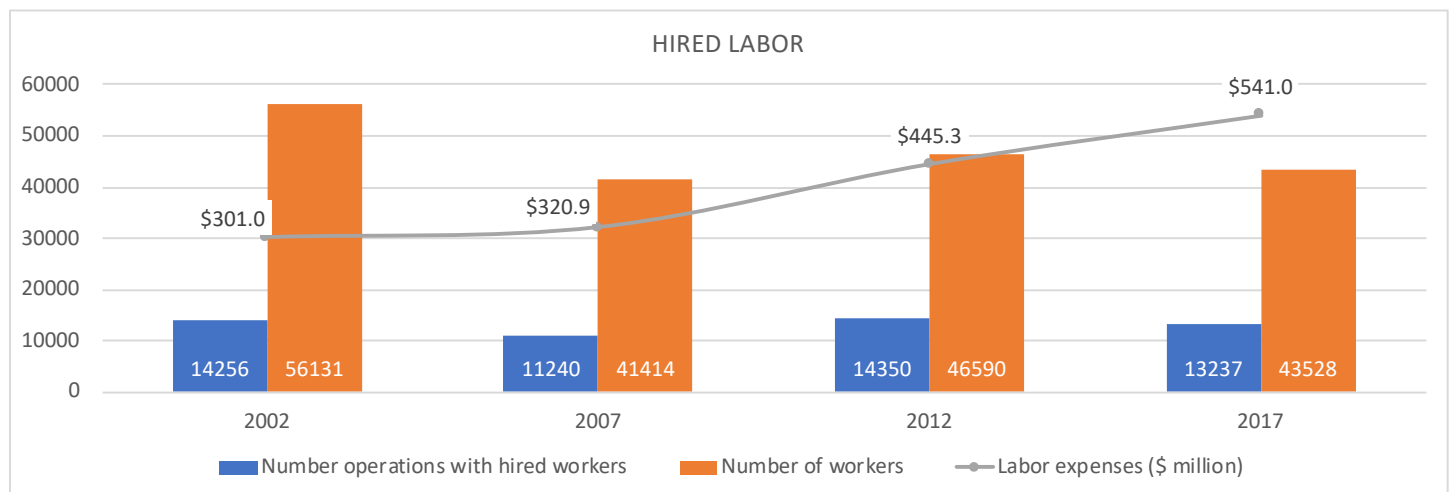


Figure 6. Labor expenses in Indiana agriculture reached a 20-year high at \$541million.

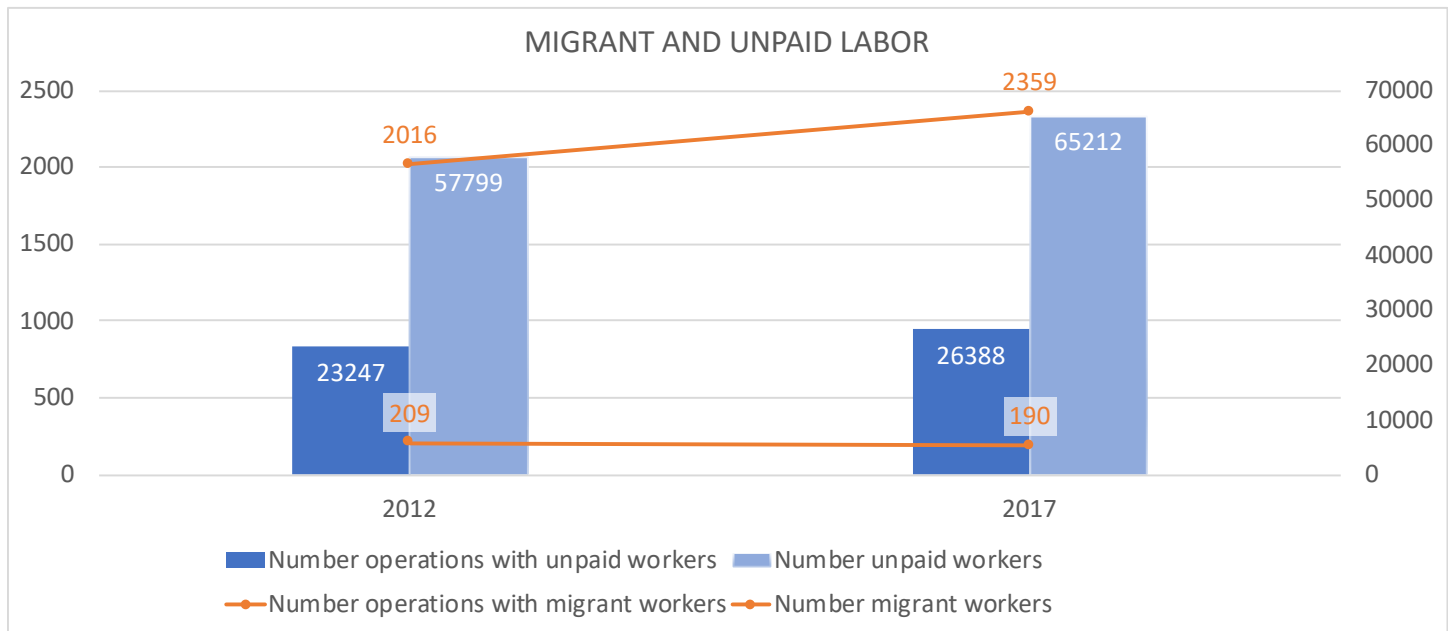


Figure 7. Number of migrant and unpaid workers increased in 2017 in Indiana.

Two other important sources of farm labor are unpaid labor and migrant workers (Figure 7). Unpaid workers are those performing activities on a farming operation but not included on the payroll. The number of operations with unpaid labor, and the number of unpaid workers, have increased by 14 and 13 percent in the last 5 years, respectively. Similarly, the number of migrant workers has increased by 17 percent to 2,359 employees, yet the number of operations hiring migrant workers has decreased to 190, a reduction of 9 percent when compared to 2002.

Main Trends of the Specialty Crops Industry

This section provides the main production and sales trends of vegetables, fruits and tree nuts, horticultural crops, floriculture crops, cut Christmas trees and short-term woody crops, and other specialty crops. Figures 8 to 12 highlight the main trends of the specialty crop industry.

Figure 8 illustrates that the number of operations growing vegetables (in the open) and their total sales have increased in the past 15 years. The census reported 1,455 operations growing vegetables with reported total sales of \$136 million in 2017. Sales of vegetable crops increased by 75 percent, while number of vegetable operations grew by 24 percent in the 2002-2017 period.

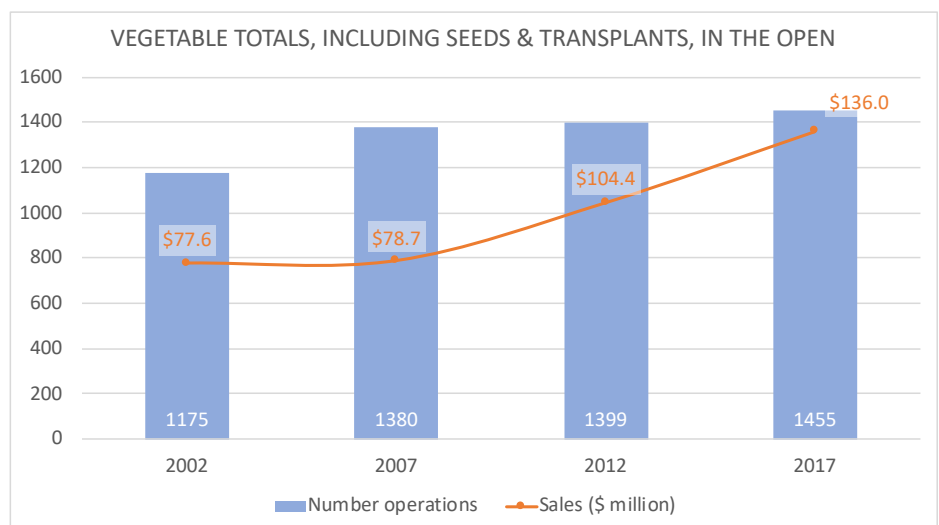


Figure 8. Number of farms growing vegetables and sales of vegetables reached their highest levels since 2002.

Figure 9 reports the sales of fruits and tree nuts, as well as the number of operations growing those crops. Total sales of fruits and tree nuts have recovered since 2012, reaching \$16 million. Similarly, the number of farms growing fruits and tree nuts has increased to 846 operations, the highest since 1997. Sales and number of operations increased by 24% and 42% since 1997, respectively. Growth in sales and number of operations growing fruits and tree nuts may be due to various factors, including increase in the number of operations growing these crops, differentiation of products through specialty varieties, value addition, and consumer demand for fresh produce and nuts.

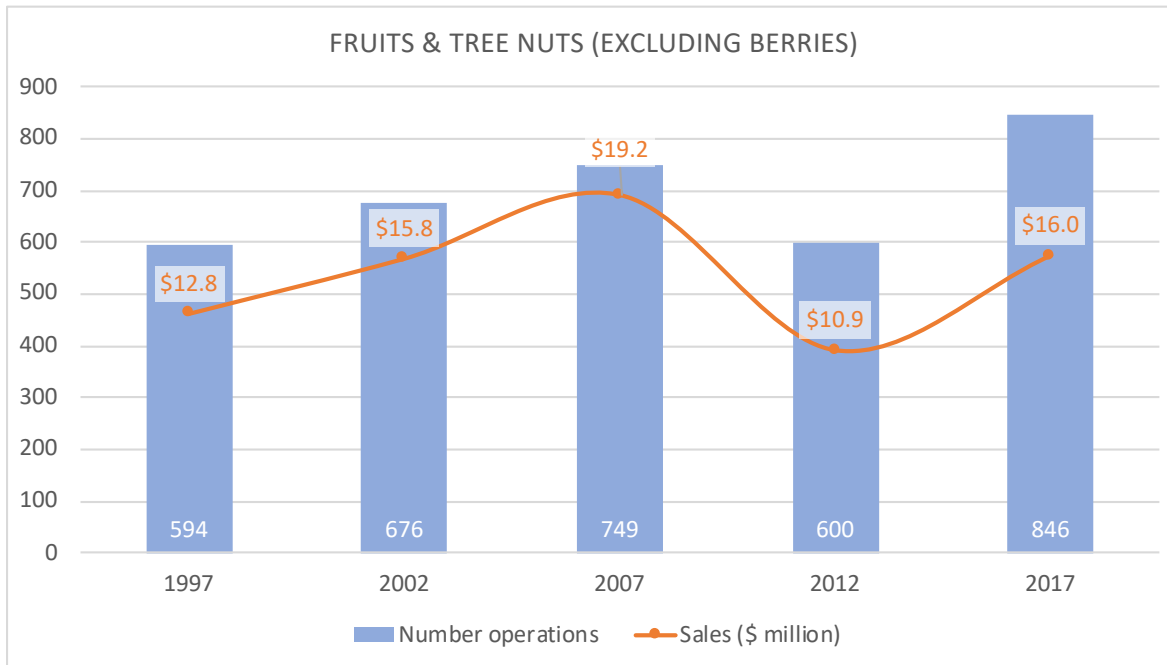


Figure 9. Fruits and tree nuts: The number of farms and sales have increased in the past 5 years.

Figure 10 shows the total number of operations and sales of horticulture crops (excluding cut trees and vegetables transplants and seeds). The horticulture industry seems to be recovering since 2007, yet values are lower than 2002. There were 900 operations growing horticulture crops in Indiana, with reported total sales of almost \$132 million in 2017.

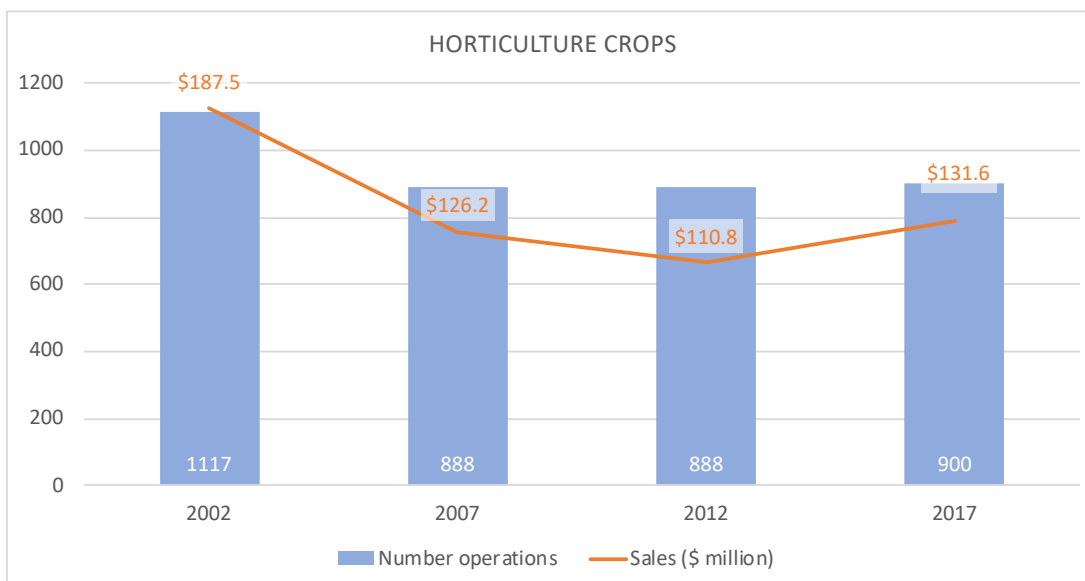


Figure 10. Horticulture sales and number of farms have increased since 2007.

Figure 11 highlights the main trends of the floriculture industry in Indiana. The 2017 Census reported that 542 operations in Indiana sold \$77.3 million in floriculture crops. Floriculture crops included bedding plants (\$66.5 million; 391 operations), cut flowers and cultivated greens (\$1.3 million; 119 operations), foliage plants (\$0.9 million; 133 operations), flowering plants (\$8.2 million; 133 operations), and other floriculture crops (\$0.4 million; 34 operations). The reported area of floriculture production for 2017 was 7.3 million square feet under protection and 417 acres in the open.

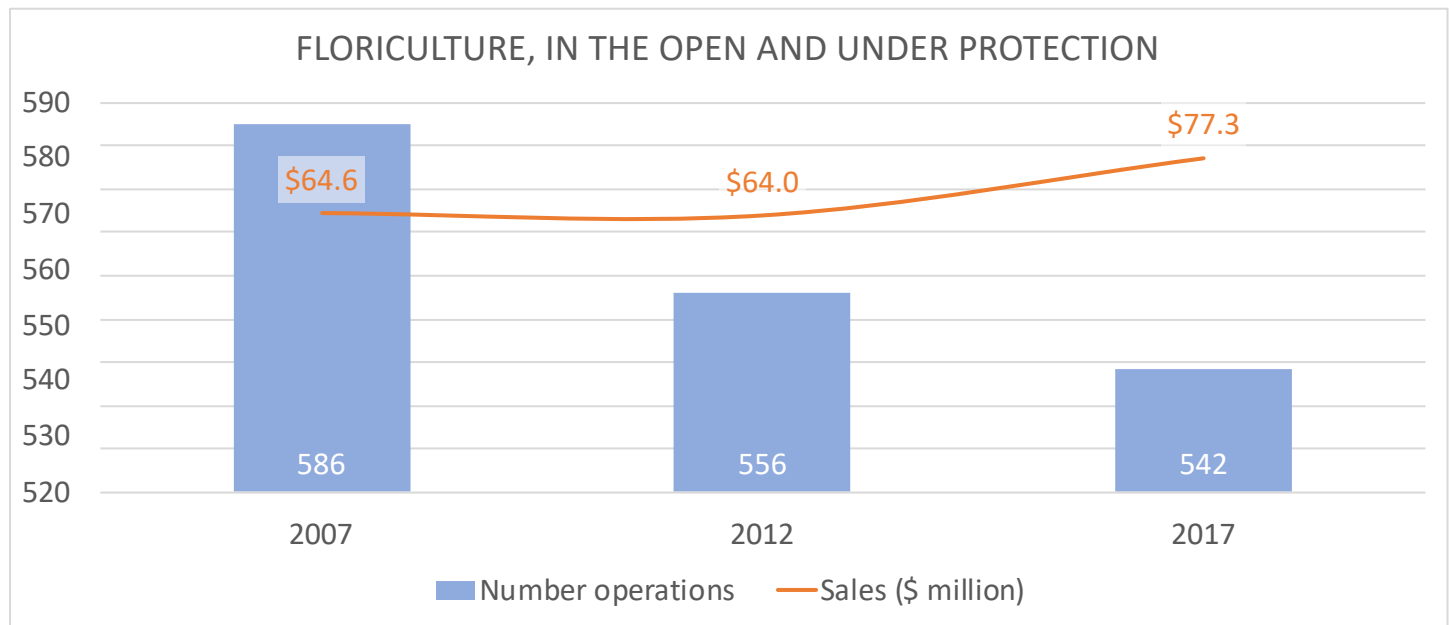


Figure 11. Sales of floriculture crops have increased by 20%, while the number of operations has decreased by 7% in the last decade.

Figure 12 shows the number of operations growing and total sales of cut Christmas trees and short-term woody crops. Sales of Christmas trees and woody crops reached \$2.9 million in 2017, its highest level since 2002, while the number of farms growing these crops fell to 151, a 43 percent decrease since 2002. Higher total sales may be the result of larger farms being able to capture higher premiums for their cut trees and woody crops.

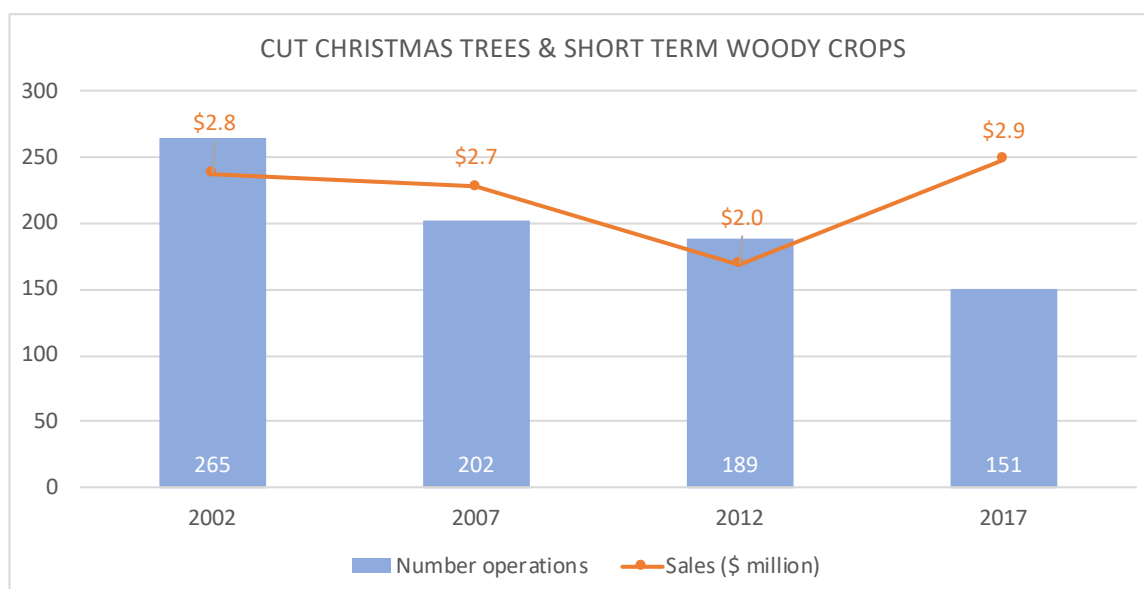


Figure 12. Sales of cut Christmas trees and woody crops have risen sharply since 2012.

Other specialty crops noted in the 2017 Census of Agriculture include hops, mint, and popcorn. A total of 29 operations grew 102 acres of hops in Indiana; 87 acres were irrigated. Total production of hops was 26,703 pounds in 2017. A total of 30 mint producers harvested 11,486 acres of mint for oil; 5,120 acres were irrigated. Total production of mint in 2017 reached 622,070 pounds of oil. When comparing 2017 production to 1997 levels, the census reported that the number of mint operations has decreased by 75 percent, farmland decreased by 63 percent, and pounds of mint oil decreased by 54 percent. Lastly, a total of 249 popcorn growers harvested over 79,000 acres in 2017, which yielded 352.3 million pounds of popcorn.

The Top Vegetables in Indiana

There were 1,429 operations harvesting vegetables from 40,148 acres. Of them, 93 percent of farms harvested vegetables for fresh market from a total of 19,999 acres. The remaining operations and acres were used for processing vegetables.

Data from the 2017 Census of Agriculture shows the top vegetables grown in Indiana by number of operations and acreage. Based on the number of farms growing vegetables, tomatoes (598 farms), sweet corn (447 farms), pumpkins (432 farms), snap beans (396 farms), bell peppers (387 farms), squash (378 farms), cucumbers (353 farms), watermelon (313 farms), summer squash (285), and potatoes (268) were the top 10 vegetables grown by most Indiana farmers in 2017 (Figure 13). Interestingly, most of the farmers growing tomatoes (88 percent) sell them for fresh market, but fresh market tomatoes occupy only 10 percent of the total acreage dedicated to this crop (754 acres).

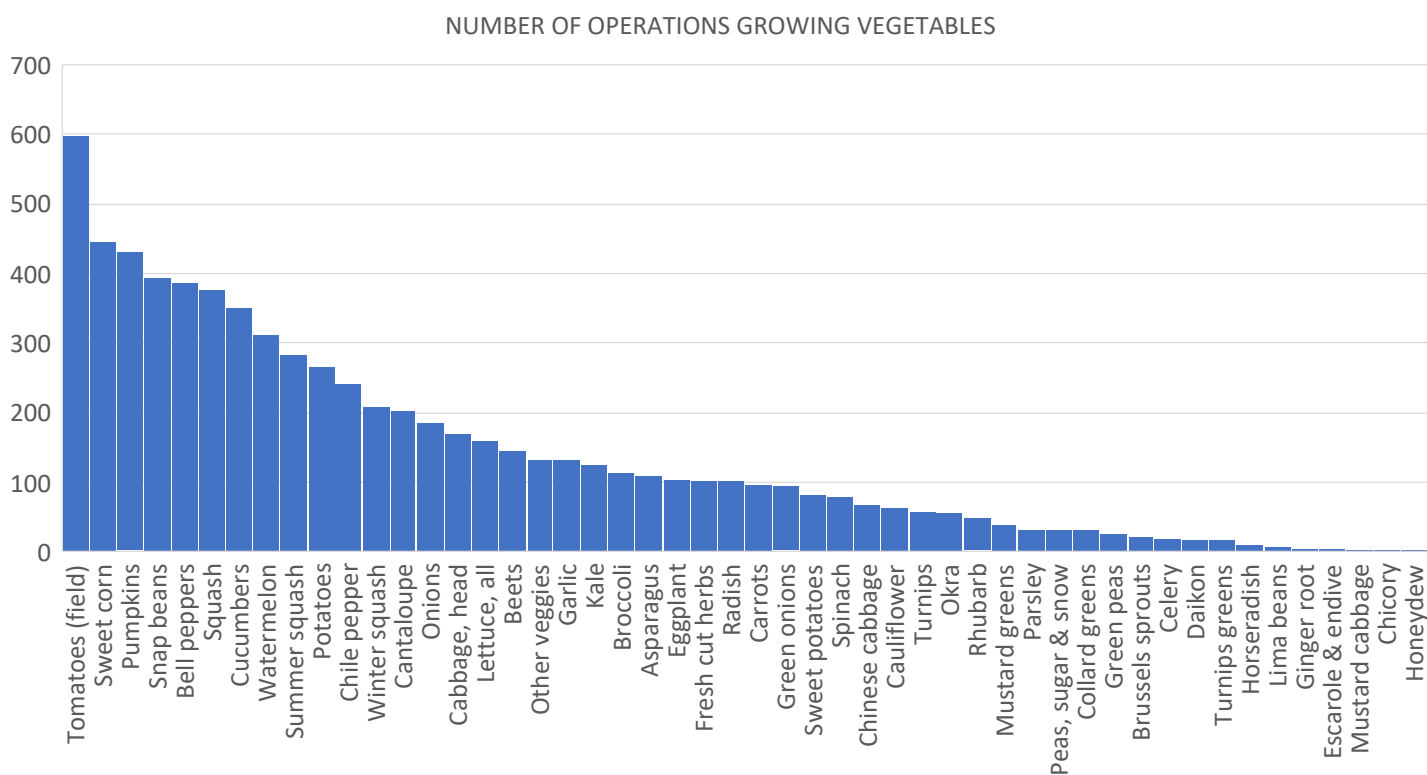


Figure 13. Tomatoes, sweet corn, and pumpkin were the top 3 vegetables grown by most Indiana farmers.

Figure 14 highlights the acreage used to grow the top 10 vegetables (by area) in Indiana. Ninety percent of land used for growing vegetables was occupied by potatoes (8,647 acres), tomatoes in the open (7,867 acres), watermelon (6,240 acres), pumpkins (5,330 acres), sweet corn (3,614 acres), cucumbers (2,470 acres), and snap beans (2,232 acres) in 2017. Interestingly, 94 percent of the operations grew 11 percent of potatoes acreage sold in fresh markets, while the rest of vegetable production was sold for processing. On the contrary, 89 percent of operations grew 10 percent of tomatoes for fresh markets.

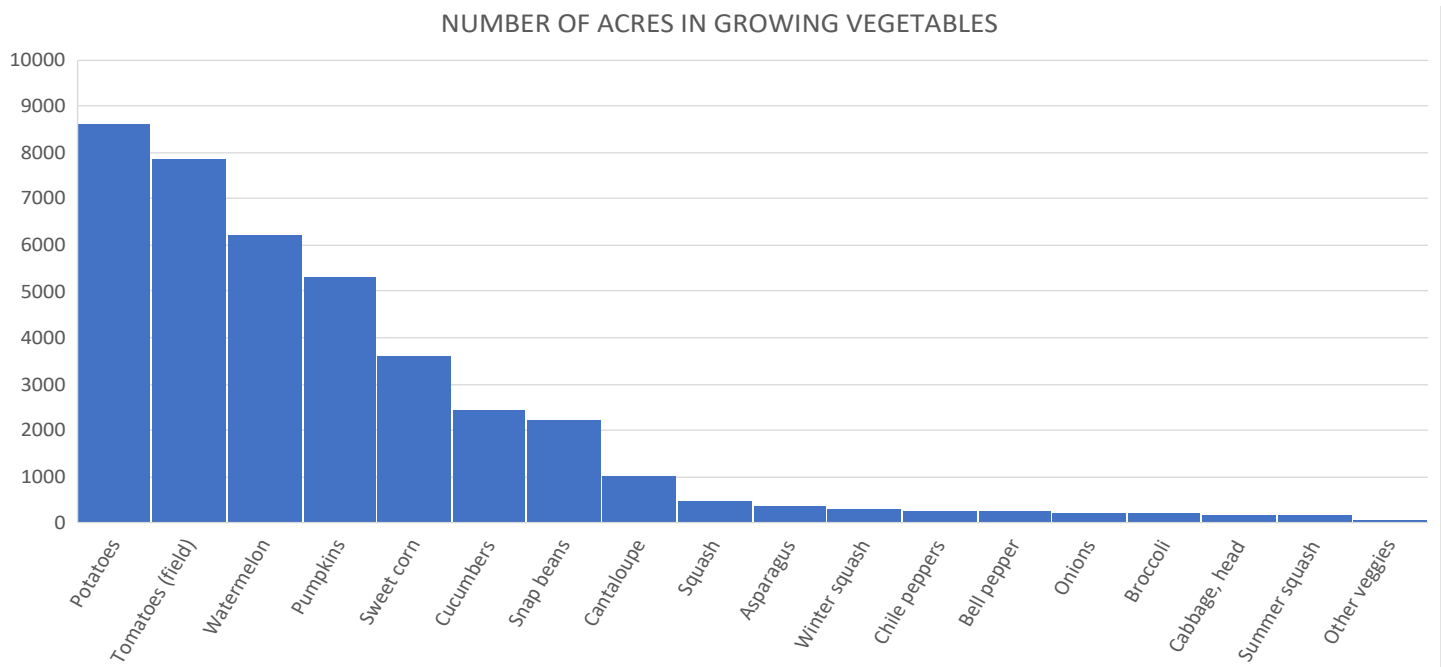


Figure 14. Potatoes, tomatoes, watermelon, pumpkin, sweet corn, cucumber, and snap beans occupied 90 percent of Indiana farmland used for vegetable production.

Other vegetables grown in Indiana include winter and summer squash, bell and chili peppers, dry onions, broccoli, cabbage, lettuce, garlic, eggplant, kale, cauliflower, sweet potatoes, beets, green onions, carrots, radishes, fresh cut herbs, rhubarb, spinach, sugar and snap peas, okra, mustard greens, parsley, lima beans, Brussels sprouts, celery, daikon, turnip greens, horseradish, escarole and endive, honeydew melons, green peas, chicory, and turnips.

The Top Fruits and Tree Nuts in Indiana

Data from the 2017 Census of Agriculture shows the top fruits and tree nuts grown in Indiana by number of operations and acreage. The Census of Agriculture does not specify how fruits and tree nuts were sold and through which market. Based on the number of farms growing fruits, apples (402 farms), grapes (252 farms), blackberries (234 farms), strawberries (199 farms), peaches (195 farms), blueberries (171 farms), pears (142 farms), tart cherries (82 farms), black raspberries (76 farms), and red raspberries (74 farms) were the top 10 fruits grown by farmers in Indiana (Figure 15).

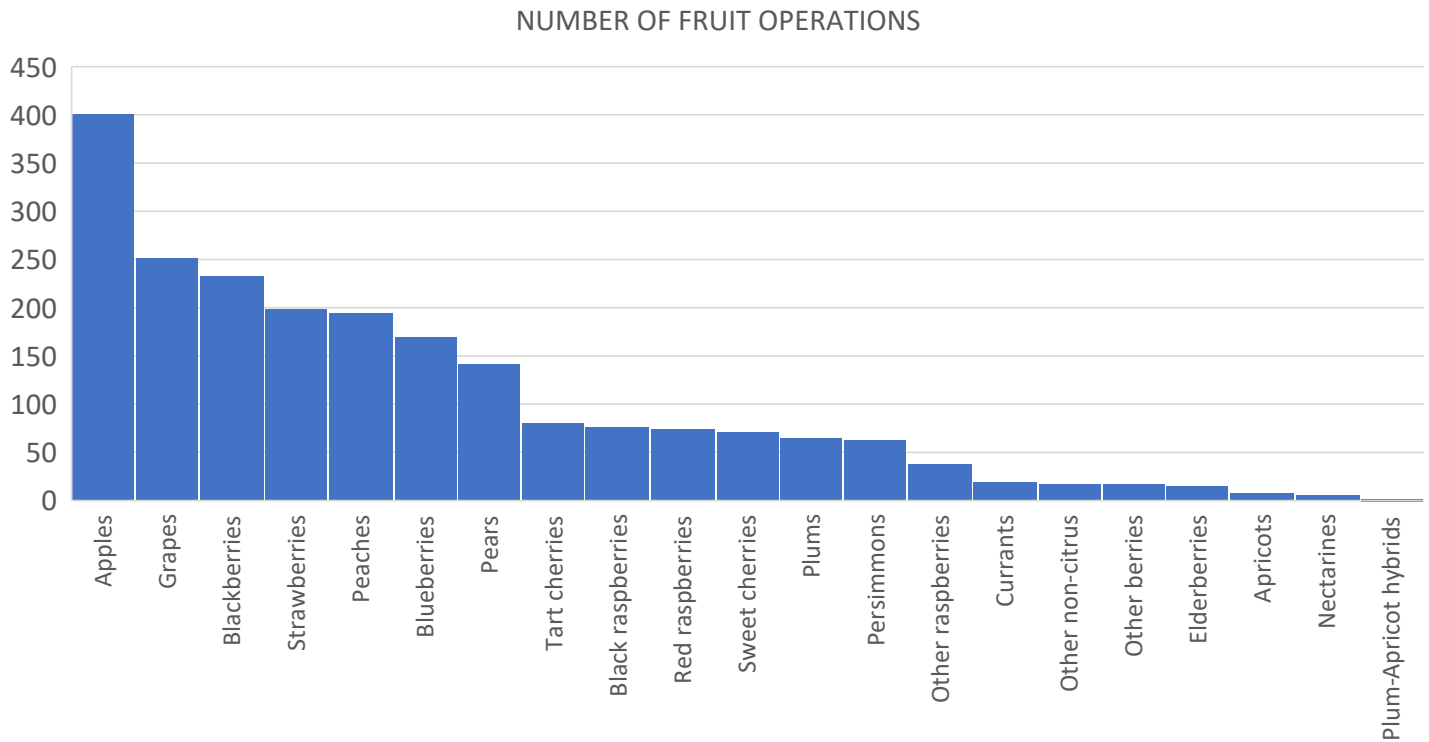


Figure 15. Apples, grapes, and blackberries were the top 3 fruits grown by most Indiana farmers.

Figure 16 reports on the acreage used to grow the top 10 fruits (by area) in Indiana. Apples (1,749 acres), blueberries (684 acres), grapes (587 acres), peaches (357 acres), and strawberries (254 acres) occupied 90 percent of the Indiana farmland dedicated to growing fruits in 2017.

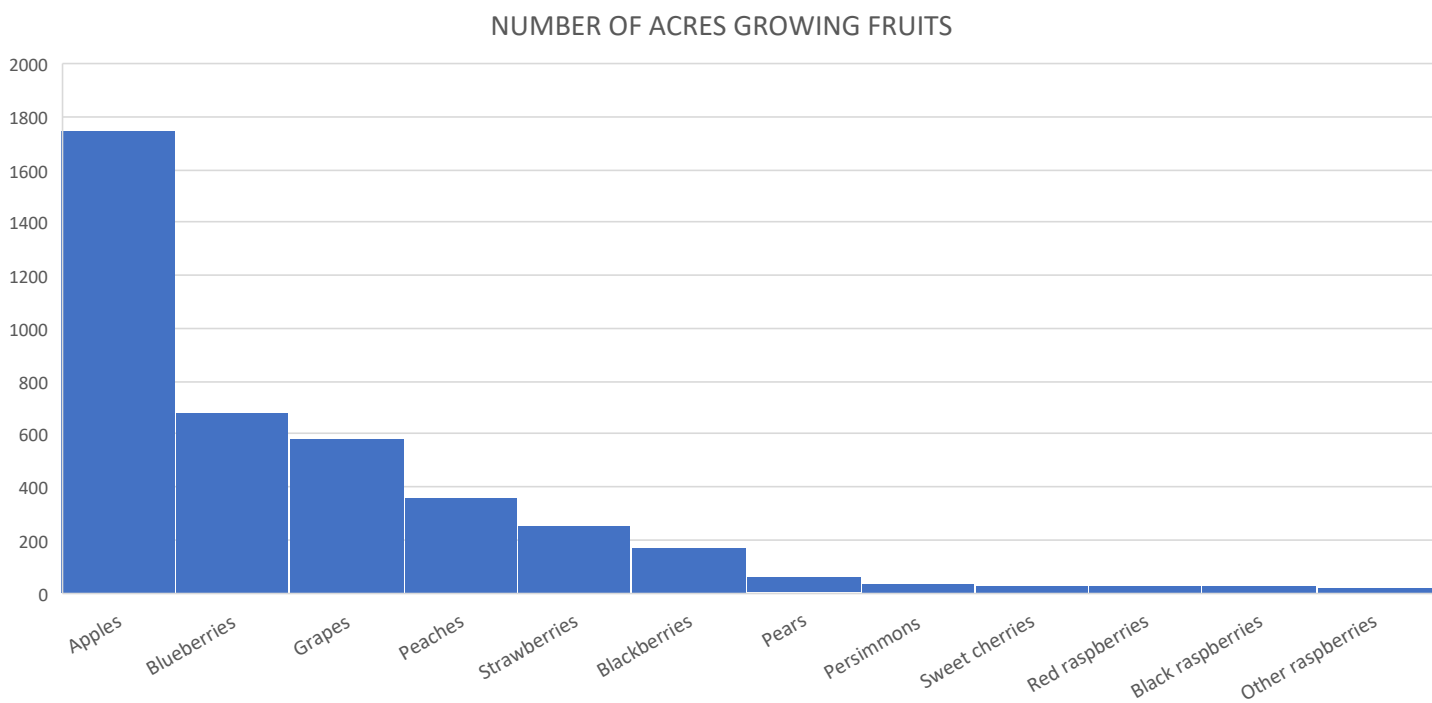


Figure 16. Apples, blueberries, grapes, peaches, and strawberries occupied 90 percent of Indiana farmland used for fruit production.

Figure 17 illustrates the number of operations and acres growing tree nuts in Indiana. Walnuts (51 farms), other tree nuts (49 farms) and pecans (48 farms) were the top 3 nuts grown by most farmers and using the highest amount of farmland in Indiana. A good portion of walnut production is for wood (veneer).

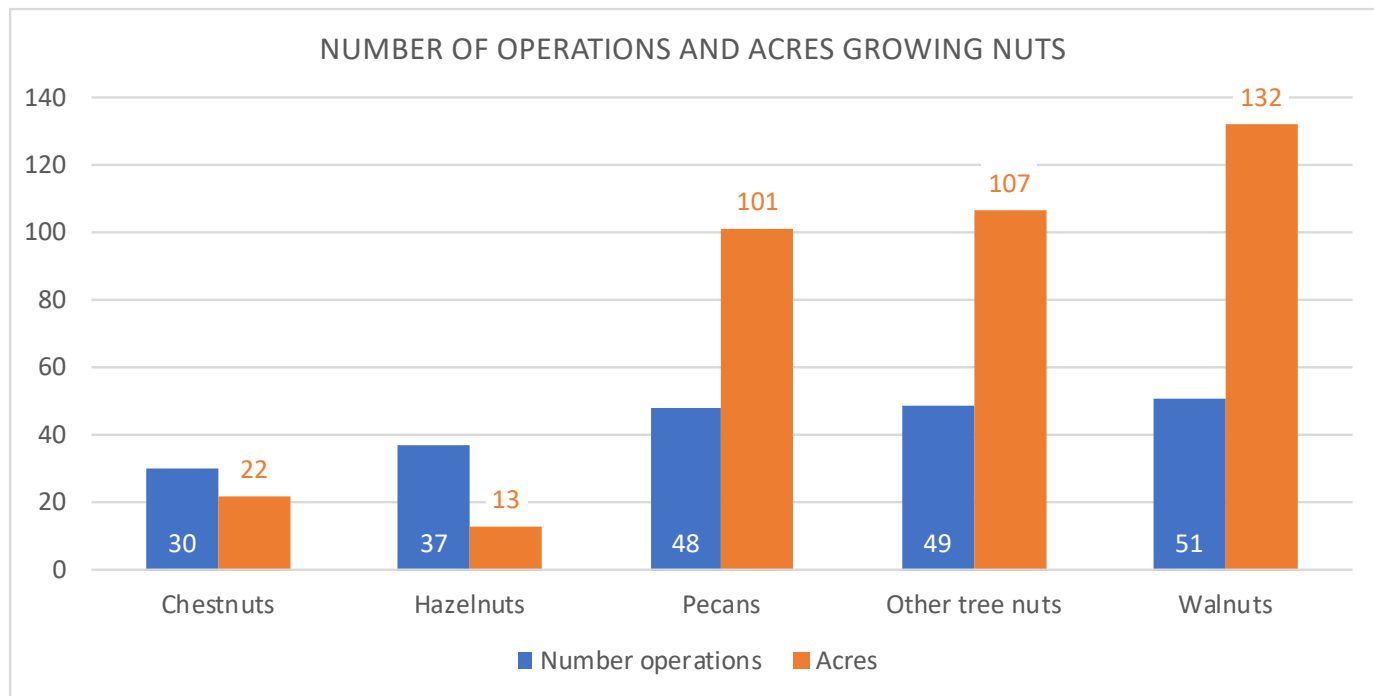


Figure 17. Walnuts, pecans, and other tree nuts were the top 3 nuts grown in Indiana.

Conclusions

Indiana agriculture seems to be adapting to the changing economic climate. On one hand, the total number of medium/large size farms has decreased in the past 20 years. These larger farms seem to be farming a larger number of acres and producing higher value of commodities sales, which is likely to offer economies of scale advantages to encourage farmers to specialize in fewer crops. On the other hand, the number of smaller operations has been increasing over time. This increase may be a response to the local foods movement, an increase in number of farmers markets and other local outlets, and the consumer demand for fresh and high-quality produce, as these smaller farms often produce fruits and vegetables for fresh consumption. Yet, sales of smaller operations represent a small portion of all agricultural sales.

Consumer demand for local produce seems to have positively influenced the specialty crops industry, which reported increasing sales and number of operations for vegetables, fruits, tree nuts, and horticulture crops. Among the top vegetables, tomatoes (in the open), watermelon, pumpkins, sweet corn, snap beans, and cucumber are highly popular among farmers and occupy most of the farmland used in vegetable production. Apples, blueberries, grapes, and strawberries are the top fruits in the state of Indiana in 2017.

The 2017 census reported a positive outlook for the Indiana organic certified industry. Increasing sales and number of certified, exempt, and transitioning operations seems to couple the increasing demand of organic certified products nationwide.

For the complete 2017 Census of Agriculture report, please visit www.nass.usda.gov