PURDUE EXTENSION

FRUIT AND VEGETABLE FARMER SURVEYS

Characteristics of Indiana Vegetable Farming Operations

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The U.S. Department of Agriculture updated the 2012 Census of Agriculture results in July 2015. Although the census reported that vegetables are only a small fraction of agriculture farm sales in Indiana, vegetable operations are vital to our communities' economic development.

This publication focuses on the responses from a Purdue survey of Indiana vegetable growers. We also provide an overview of the responses of the 2012 USDA Census of Agriculture.

Our Survey

We conducted an online survey in 2012 of fruit and vegetable growers who participate in the Food Industry MarketMaker database in 16 states and Washington, D.C.: Alabama, Arkansas, Florida, Georgia, Iowa, Illinois, Indiana, Kentucky, Michigan, Mississippi, Nebraska, New York, Ohio, Pennsylvania, and South Carolina. Our survey received responses from 1,559 farmers, which represents a 36 percent response rate.

Most of the farmers in our sample (58 percent) were from the Midwest (Iowa, Illinois, Indiana, Michigan, Nebraska, Ohio, and Kentucky). About 15 percent of the respondents were from the South (Florida, Georgia, and South Carolina), 6 percent were from the Delta (Alabama, Arkansas, Mississippi, and Louisiana), and 20 percent were from the Northeast region (New York and Pennsylvania).

For the purposes of this publication, we are only going to examine the responses of the 89 vegetable farmers in Indiana who participated in the survey — these farmers represent 13 percent of the Midwest farmers in the survey. From these 89 farmer responses we can provide in-depth information about Indiana vegetable farms. However, because the survey was voluntary and the sample is mainly composed of small- and medium-size operations, our results may not be representative of all Indiana vegetable farms. Below we provide our survey results, and when possible, we compare them with the 2012 USDA Census of Agriculture results.

Characteristics of Indiana Vegetable Farms

Farm Sizes and Sales

Like the USDA, we categorize farm sizes based on their annual gross sales:

- Small = annual gross sales <$10,000
- Medium = annual gross sales between $10,000 and $250,000
- Large = annual gross sales >$250,000

Here is the breakdown of Indiana vegetable farmers who responded to the survey:

- Small = 25 percent
- Medium = 61 percent
- Large = 14 percent

Figure 1 shows the distribution of Indiana vegetable farm sizes in terms of annual gross sales. In contrast, in the 2012 Census of Agriculture, small farms accounted for 35 percent of overall Indiana vegetable sales, medium farms 44 percent, and large farms 21 percent.

Acres Rented and Acres Owned

The survey also asked farmers how much land they rent and own. The results illustrate the number of acres these farmers own or rent, but they do not specify how much land they dedicate to growing only vegetables.

The survey results show that the average Indiana vegetable operation has 238 acres — the smallest farm is 1 acre and the largest has 5,000 acres. The average small farm has 28 acres — and farmers own most of those acres (27 acres). The average medium farm has 115 acres — and farmers own 95 of those acres. The average large farm has 1,188 acres — and farmers only own 553 of those acres.

Figure 2 shows the percentages of owned and rented land across farm size (bars). The green line illustrates the average number of total acres in small, medium, and large operations.

Size of Indiana Vegetable Farms

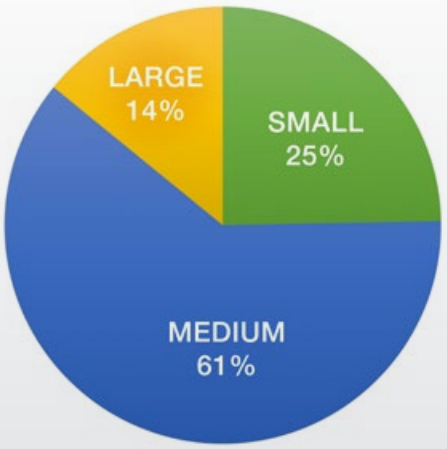


Figure 1. This graph illustrates the sizes of the Indiana vegetable farms included in the Purdue online survey. Most Indiana vegetable farms are categorized as small or medium in size.

WHAT DOES THIS MEAN?

Most Indiana vegetable farms report less than $250,000 in annual gross sales.

Owned, Rented, and Total Land

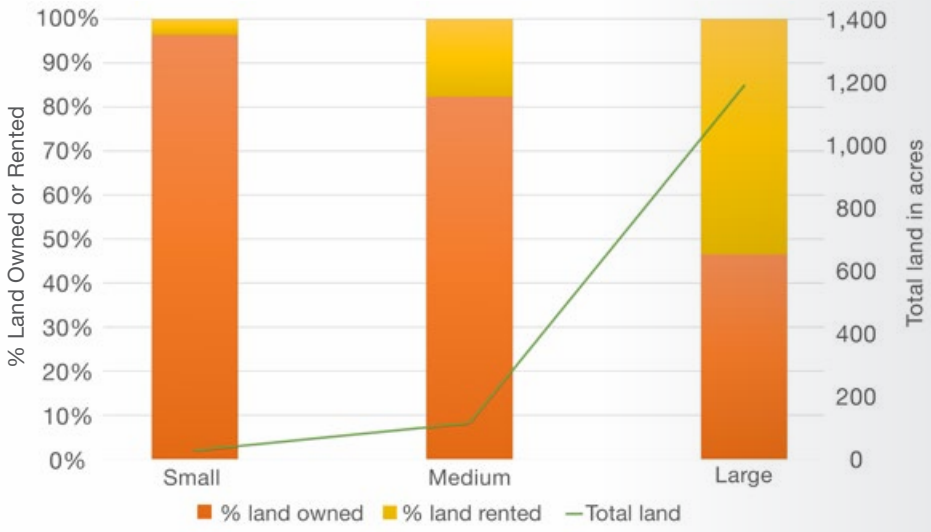


Figure 2. This graph shows the amount of owned, rented, and total land held by Indiana vegetable growers. The number of acres that Indiana vegetable growers rent and own vary across size.

WHAT DOES THIS MEAN?

Farms with lower annual sales tend to have fewer acres. As vegetable farms increase in sales or acres, so does the amount of land they rent.

Forms of Ownership

Almost 52 percent of the Indiana vegetable farms in our sample are sole proprietorships, 23 percent are limited liability corporations (LLC), 7 percent are S-corporations, 12 percent are corporations, and 7 percent are partnerships.

Figure 3 displays the legal structures of Indiana vegetable farms across size. The figure shows that most small and medium vegetable farms are sole proprietorship, and the most common legal structure for large farms is corporation. The 2012 Census of Agriculture reports that 87 percent of Indiana vegetable and nonvegetable farms are individual- or family-owned, 6 percent are partnerships, and 6 percent are corporations.

▸ *Legal Structures of Indiana Vegetable Farms*

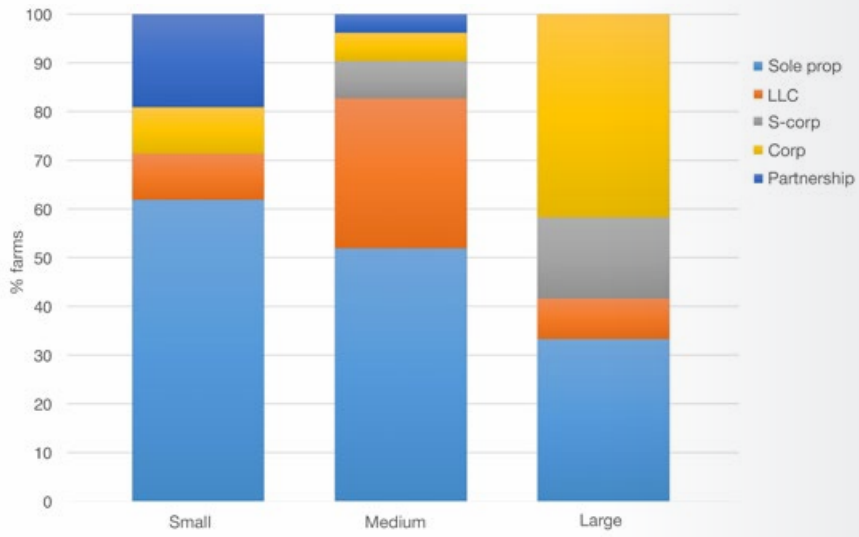


Figure 3. This graph shows the legal structures of Indiana vegetable farms. The form of ownership varies with farm size.

WHAT DOES THIS MEANS?

Sole proprietorship is the most common form of ownership for smaller farms. Corporation is the most common form of legal structure for large farms. Most LLC farms are medium-size.

Family and Nonfamily Labor

We also asked farmers about family (including themselves) and nonfamily labor. On average, vegetable farms in Indiana employ 11 individuals. Of those, three are family members and eight are nonfamily members.

Figure 4 displays the number of family, nonfamily, and total labor for Indiana vegetable farms. On average, small farms in Indiana employ three people, medium farms six, and large farms 35. Moreover, the number of family members working on the farm remains similar across small and medium farms (about two family employees), and increases for large farms (over four family employees).

▸ *Indiana Vegetable Farm Labor by Farm Size*

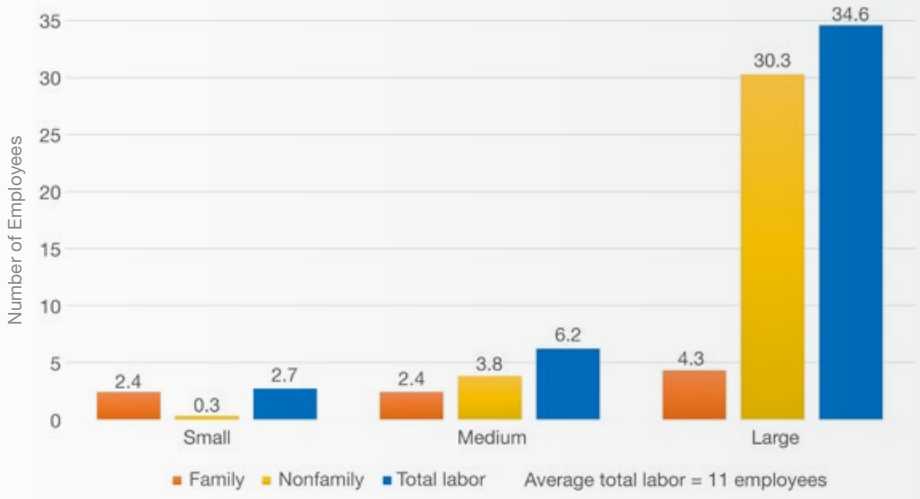


Figure 4. This graph shows the labor used on Indiana vegetable farms by farm size. Indiana vegetable farms rely on family labor.

WHAT DOES THIS MEANS?

The number of a farm's employees increases as the farm increases in size. Indiana vegetable farms rely on family labor.

Production Practices

The Purdue survey also asked vegetable farmers about their production practices. Figure 5 displays the proportion of land under conventional, certified organic, transitioning, and noncertified organic production practices across size.

The percentage of land under organic or conventional practices varies by farm size. Almost 70 percent of the land of small farms is noncertified organic, while the rest is conventional. On the other hand, larger vegetable operations are mainly conventional (99 percent of land). All certified organic and transitioning vegetable farms in our survey are medium in size.

▸ *Indiana Vegetable Farm Production Practices*

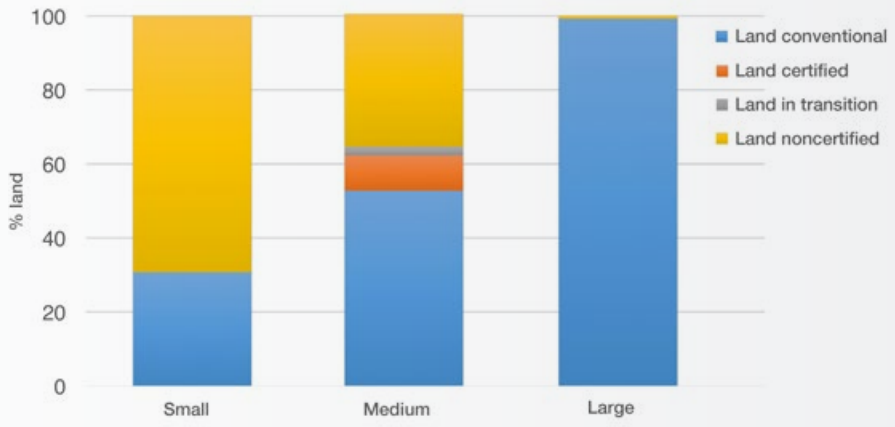


Figure 5. This graph shows the production practices of Indiana vegetable farms. Farming practices vary across farm size.

WHAT DOES THIS MEAN?

Most of the land in small farms follow organic practices but are not certified. Certified organic land is mainly owned by medium farms. Large farms grow vegetables using conventional practices.

What Do Indiana Vegetable Farmers Grow?

Indiana vegetable farmers grow a diversity of crops. Based on our survey, Indiana farmers grow an average of 19 vegetable crops.

The greatest diversification is on small and medium vegetable farms. Small farms grow an average of 22 crops, medium farms grow an average of 19 crops, and large farms grow an average of 15 crops.

Almost 45 percent of Indiana vegetable farmers in our survey grow their vegetables using some means of extending the growing season (such as a hoop house or greenhouse). The survey indicates 45 percent of small farms extend the growing season, medium farms 40 percent, and large farms 58 percent.

The most commonly grown vegetables are:

1. Tomatoes — grown by 77% of farmers
2. Sweet peppers — 67%
3. Cucumbers — 64%
4. Zucchini — 61%
5. Beans — 61%

The least grown vegetables in Indiana are:

- Rutabagas — grown by 6% of farmers
- Shallots — 12%
- Fennel — 14%
- Asian greens — 18%
- Collards — 20%

Other vegetables grown in Indiana include garlic, onion, heirloom tomatoes, lettuce, sweet corn, summer squash, winter squash, cherry tomatoes, and hot peppers.

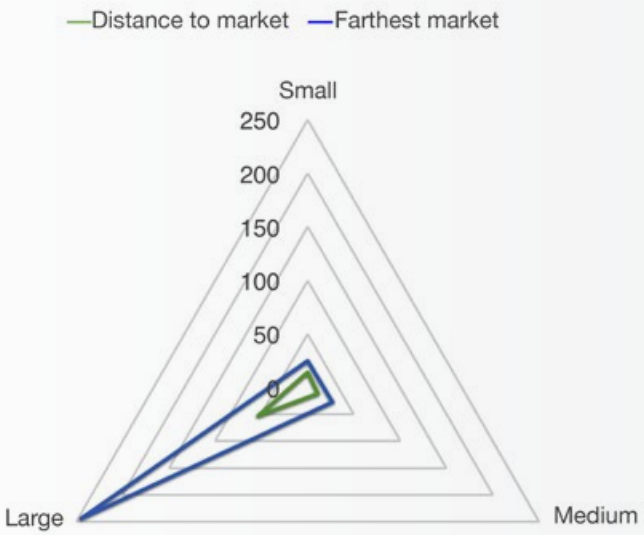
Where Do Indiana Vegetable Farmers Sell Their Produce?

The survey asked farmers to report the average distance (in miles) and longest distance to their markets. The average distance to markets for Indiana vegetable growers is 18 miles. The longest distance to market is 61 miles.

Figure 6 illustrates the average and longest distance to markets by farm size on the left (small, medium, and large) and by production practices on the right (conventional, certified organic, transitioning, and noncertified organic). The figure shows that small and medium vegetable farms reported similar average distance to markets (about 12 miles) and similar longest distance to market (about 26 miles). Large farms tend to sell to markets that are farther away.

The figure shows that there are similar trends when we categorize farms by production practices. Conventional farms have a larger average distance to market (22 miles) and longest distance to market (104 miles) compared to certified, transitioning, and organic noncertified operations.

▸ *Distance to Market (miles) by Farm Size*



▸ *Distance to Market (miles) by Production Practices*

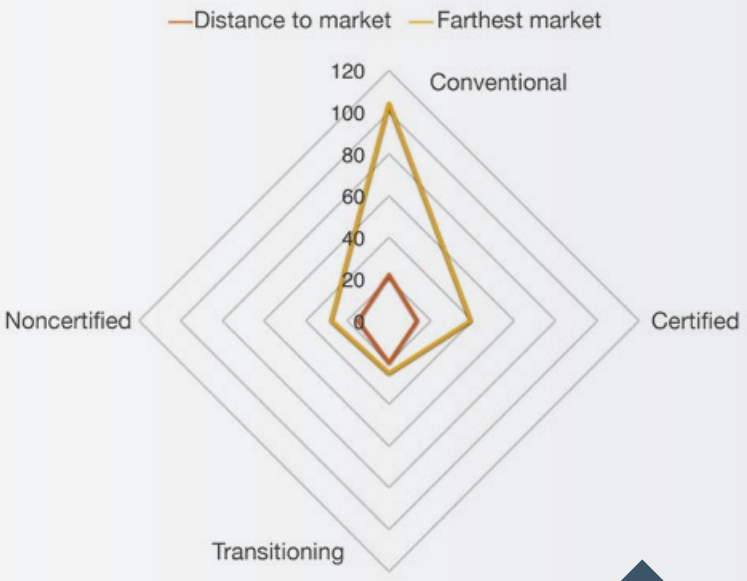


Figure 6. These graphs show the distance to markets by farm size in miles (left) and distance to markets by production practices in miles. Both graphs show the average and longest distance to markets for Indiana vegetable farmers.

WHAT DOES THIS MEAN?

Large and conventional vegetable farms sell to more distant markets.

Almost 96 percent of vegetable farmers in our survey sell some of their produce through Direct-to-consumer (DTC) market channels. DTC outlets are channels where the farmer makes direct contact with customers to make a sale. Such channels include farmers markets, on the farm, community supported agriculture (CSA), cooperatives, online sales, delivery, word-of-mouth, roadside stands, festivals, exchanges, and friends.

Conversely, only 52 percent of Indiana farmers in our sample sell their produce through wholesale channels. Such channels include wholesalers, processors, restaurants, retailers, schools, and wineries.

The survey indicates that 47 percent of vegetable farmers sell through both DTC and wholesale channels. On average, vegetable farms sell their produce through three market outlets. We did not find major differences in the number of market channels across farms sizes.

Figure 7 illustrates the percentage of farmers who reported using each market channel and illustrates the most and least used market channels. The survey indicates that 74 percent of vegetable farmers sell produce at the farm, 63 percent sell through farmers markets, and 39 percent sell through wholesalers. On the other hand, only 2 percent of farmers reported selling their vegetables from roadside stands, while 5 percent sell through retailers, and 7 percent directly to processors.

▸ *Farmers Using Market Channels*

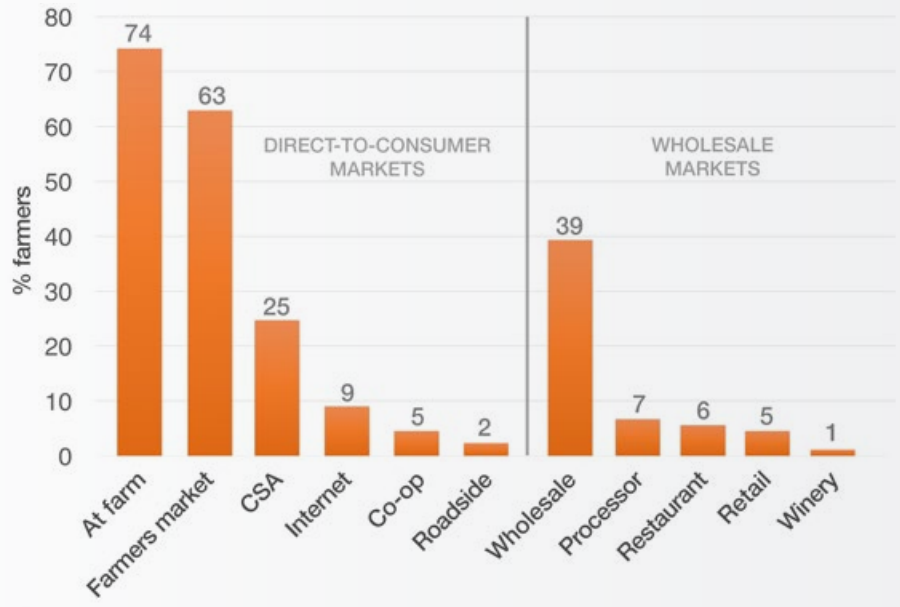


Figure 7. This graph shows the market channels used by Indiana vegetable farmers.

WHAT DOES THIS MEAN?

Selling at farms and farmers markets are the most common markets for Indiana vegetable growers. Direct-to-consumer market channels are the most common outlets for vegetables. Less than half of farmers sell to wholesalers.

Summary

The online survey shows that Indiana vegetable farms include a wide variety of sizes, sales, forms of ownership, crops, land, labor, market access, and types of markets. As opportunities arise for specialty crop growers, we hope this publication helps beginning and current farmers understand the market channels, crop diversification, and main production activities on a variety of vegetable operations.

Resources

The 2012 Census of Agriculture. United States Department of Agriculture-National Agricultural Statistics Service (USDA-NASS), *www.agcensus.usda.gov*.

"Ag and Food Statistics: Charting the Essentials." United States Department of Agriculture-Economic Research Service (USDA-ERS), *www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials*.

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