RESULTS OF THE IOWA COMMERCIAL HORTICULTURE FOOD CROPS SURVEY

2023 RESULTS COMPILED FOR RELEASE SUMMER OF 2025

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TABLE OF CONTENTS

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Summaries were derived using data collected in the 2022 Census of Agriculture and the 2023 Iowa Commercial Horticulture Survey for Food Crops by NASS. Any interpretations and conclusions derived from the data represent author viewpoints and are not necessarily those of NASS.

Due to the NASS confidentiality pledge, the data underlying this report cannot be shared publicly. Secure access of NASS data may be obtained by agreement and sworn status only; restrictions apply.

EXECUTIVE SUMMARY

The 2023 Iowa Commercial Horticulture Survey for Food Crops Survey (Hort Survey), released in the summer of 2025, confirmed a trend that was first noted in a survey conducted in 2015. Both surveys showed that despite increasing interest in locally produced foods among consumers, the number of commercial-scale edible specialty crop farms has largely remained steady over the last two decades. This survey revealed that Iowa's edible crop producers are largely entrepreneurial at heart, embracing edible food crop production as a primary occupation or using smaller-scale specialty crop production to supplement incomes and diversify their farms or acreages.

The COVID-19 pandemic, which emerged in the United States in March 2020, has had impacts far beyond those related to public health. Supply chain disruptions, business realignments, closures but also success stories, inflationary pressures, and government local food programs, were all part of the picture during the pandemic and post-pandemic years. Some farms lost sales during the pandemic - while others saw unprecedented growth, especially those providing home delivery or the opportunity to pick your own. Did that lead to a permanent shift in how consumers acquire food? Has it led to a long-term increase in sales for edible specialty crop producers?

Home-scale food production rose dramatically during the pandemic. The effect of people staying at home, and the realization that the global supply chain was not able to meet needs during the initial months of the crisis, led many to plant gardens for the first time or the first time in a long time. Did any of these home gardeners accidentally become vegetable farmers? Did the realization that "I can grow this myself" cause people to step away from buying from their local farmer? The 2023 Iowa Commercial Horticulture Survey for Food Crops was designed to answer these questions, using the 2015 and earlier surveys as a baseline.

A paper survey was sent to producers of vegetables, fruits, berries, nuts, honey, maple syrup, herbs, mushrooms, all pumpkins, or ornamental gourds. A total of 1,856 unique responses were received to the 2023 Hort Survey and the response rate was 51 percent. Out of these responses, 857 (1,680, weighted) indicated they grew and sold the crops of interest in 2023. In addition, several variables from the 2022 Census of Agriculture (COA) were received to supplement the 2023 Hort Survey dataset. Census of Agriculture variables were received for 1,504 respondents (2,886 weighted), 711 (1,380, weighted) of whom qualified for the Hort Survey. Here is a summary of the results:

FARM CHARACTERISTICS

- In total, edible specialty crop farms covered 11,650 acres in 2023. Median farm size was 2.8 acres and average farm size was 7.8 acres.
- The number of edible specialty crop farms appears to have dropped between 1989 and 2000 from 1,400 farms to 938 but has since rebounded to 1,680 farms in 2023.
- The total number of farms producing every category of edible specialty crops has increased since 2007. These categories include: vegetables, melons, potatoes, and sweet potatoes; fruits and nuts; berries; maple syrup; honey; greenhouse vegetables and fresh cut herbs; mushrooms; and greenhouse fruits and berries.
- The largest number of edible specialty crop farms was classified as fruit, tree nuts, and berries, followed by vegetables, melons, potatoes, and sweet potatoes.

RESPONDENT CHARACTERISTICS

- The highest number of responses came from Polk County and Linn County, with 26 or more unweighted responses.
- The average age of all operators who responded to the horticulture survey (and for whom we have 2022 COA data) was 57.2 years, which is similar to the average age of all Iowa farmers, 57.6 years.
- Nearly half (48 percent) of edible specialty crop farmers started farming under the age of 35 years.
  - Those whose primary product is grain, greenhouse crops, or livestock (but also produce edible specialty crops) began at the youngest ages (median of 30 years or younger).
  - Vegetable growers tended to begin farming at a younger age (median of 34.1 years) than fruit, nut, and berry producers (median of 41.9 years).
- Nearly a third (30 percent) of edible specialty crop farmers are beginning farmers. Over half (56 percent) of edible specialty crop growers have been producing edible specialty crops for 10 years or less.
- Over time, the number of edible specialty crop growers who derive one percent or less of their household income from the sale of edible specialty crops declined from 238 in 1989 to 181 in 2000 but has since greatly increased to 550 producers in 2023.
- The number of producers deriving between 71 and 100 percent of their household income from the sale of edible specialty crops fell from 196 in 1989 to 38 in 2000, but may be rebounding, because it was up to 90 in 2023.

LABOR

- Most (65 percent) edible specialty crop growers have an off-farm job; 37 percent have a full-time off-farm job.
- Twenty-four percent of operations indicated that it has been harder to find and pay labor since March 2020 when the COVID-19 pandemic started. Another 18 percent indicated their operation has always had challenges with finding and paying labor.
- When asked which challenges, if any, growers have experienced in accessing paid labor, most (1,146 of 1,680, weighted) did not identify any challenges. Among those who did experience challenges, the most common challenge was not being able to afford paid labor (310 respondents).
- Unpaid family members, friends, neighbors, and volunteers were the labor source used by the greatest number of edible specialty crop farms (42 percent of reporting farms).
- Twenty-six percent of farms indicated they employed workers who worked less than 150 days on the operation in a year. Ten percent employed workers who worked 150 days or more per year. Only 2 percent of farms employed migrant labor.
- Growers largely indicated reliance on unpaid labor has not changed since the start of the COVID-19 pandemic.

CROP SALES AND MARKETING

- Total sales of all edible specialty crops increased by 73 percent from $45,677,976 in 2012 (adjusted for inflation to 2022 dollars) to $79,069,194 in 2022. There was also an increase in the number of edible specialty crop producers during that time.
- A small portion (12.5 percent) of respondents indicated they purchased edible specialty crops to resell, usually selling less than $1,000 worth of product.
- Edible specialty crop growers rarely used crop insurance for those crops; only four percent indicated their crops were covered by insurance.
- Edible specialty crop farms sold an estimated $11.3 million in value-added products in 2023. Sales were highest of red and white wine, but canned and jarred goods were made by the most respondents.
- Fifty-six of 1,380 edible specialty crop farms received income from agritourism, reporting a total of $6.6 million in income.

MARKET CHANNELS

- On-farm sales/stores and farmers markets were the market channels most used by edible specialty crop growers.
- From 2015 to 2023 there was a slight shift away from selling at farmers markets, decreasing from 43 percent in 2015 to 30 percent in 2023. There was also a decrease in selling to processors (from 15 percent to five percent) and auctions (from nine percent to five percent). There was an increase in the proportion of producers who sell through roadside stands from eight percent of respondents in 2015 to 25 percent in 2023 and online sales (one percent to six percent).
- In 2023, 52 percent of specialty crop farms sold exclusively through direct-to-consumer outlets, while 17 percent sold exclusively through wholesale and intermediated markets. The remainder (31 percent) sold products through both types of channels. This was largely unchanged when compared with 2015.
- Average and median farm sales tended to be highest to large-volume buyers, even though these buyers often pay less per unit of product.
  - Median sales were highest to auctions ($9,730).
  - Of direct-to-consumer markets, Community Supported Agriculture had the highest median sales, $4,859.
  - Total sales were highest to retail stores and groceries, $8.6 million, but the median was only $2,364.
- Of the 90 respondents who indicated they sold to a processor, only 13 indicated they had a contract.
- Most (71 percent) edible specialty crop growers use some form of advertising, with word of mouth (used by 56 percent of respondents) and social media (32 percent) being the most common.
- Most edible specialty crop farmers do not participate in any food access program, but among those who do, donating food to food banks, pantries, or other community entities is the most common way to do so.

ECONOMIC IMPACT OF EDIBLE SPECIALTY CROP PRODUCTION

- An input-output model showed that in 2022 edible horticulture crop farms supported $130 million in economic output.
- An output (or sales) multiplier of 1.58 in 2023 and 1.65 in 2022 showed that for every dollar of horticulture sales, edible horticulture crop farmers support roughly an additional $0.60 in output in the rest of the Iowa economy.

PRODUCTION PRACTICES

- On average, edible specialty crop farms produce 3.8 distinct specialty crops. Those who market at farmers markets or through Community Supported Agriculture tend to grow more crops than average (average of 6.4 crops and 9.6 crops, respectively).
- The top five edible specialty crops, in terms of the number of people growing them, were honey (1,229 producers), peppers (542), apples (498), tomatoes (445), and lettuce (419).
  - The number of people growing each edible specialty crop, except for six crops, has increased from 1997 (or the earliest year data is first available) to 2022.
  - According to COA data, the number of operations that reported producing honey in Iowa has dramatically increased, from 194 in 1997 to 1,229 in 2022, making it the most common edible specialty crop produced in Iowa.
  - The number of operations with non-bearing chestnuts (163) eclipses the number with bearing chestnuts (82). Assuming plantings of non-bearing chestnuts (662 acres) are successfully maintained and brought to a bearing age, the number of acres in chestnuts will quadruple in the next few years to 871 acres.
- Fruit and vegetable growers are more likely to use cover crops (126 of 590 farms, 21 percent) than the general population of Iowa farmers (10 percent).
  - Cereal rye was the most popular cover crop on edible specialty farms, with 57 percent of respondents who use cover crops planting rye.
  - Cover crops were most often planted by edible specialty crop farmers in the fall.

- In 2023, 35 percent of edible specialty crop producers indicated they used irrigation.
  - Irrigation was used more often on vegetable farms (60 percent of farms) than fruit, nut, and berry farms (33 percent).
  - Drip irrigation was used more often than overhead irrigation (73 percent of respondents versus 45 percent; some respondents used both).
  - The most common sources of irrigation water are bored/drilled wells (64 percent of those who used irrigation) and municipal water (27 percent), which are generally considered to be the safest types of water sources.
- Nineteen percent of edible specialty crop growers reported growing something under glass or protection, such as a greenhouse or high tunnel.
- Most (430 of 569) fruit and vegetable farms used at least one product to control pests or diseases or manage fertility.
  - Chemical fertilizer was the most used product (328 of 569 growers) followed by insecticides (327) and herbicides (309).
  - Forty-seven percent of those who spray something implement a pesticide spray schedule.
- Six hundred forty-nine of 1,208 edible specialty crop growers used soil testing. Plant tissue testing and plant sap testing were used much less often (110 and 51 respondents, respectively).
  - Farms classified as fruit, nut, and berry farms or vegetable farms have adopted the use of soil testing more than other edible specialty crop farms.
  - Vegetable farms tend to test soil more frequently than fruit, nut, and berry farms.
  - Soil testing has been adapted most widely among those who apply organic fertilizers (approximately 80 percent who apply organic fertilizers use soil testing), followed by those applying commercial fertilizers (66 percent) and manure (60 percent).
- Eight percent (100 of 1,300) of edible specialty crop farms in Iowa indicated they produced organic products.

ON-FARM INFRASTRUCTURE, EQUIPMENT, AND WHOLESALE READINESS

- Somewhat surprisingly, nearly half of respondents (792 of 1,665, or 48 percent) indicated they use none of the crop production technologies listed in the survey.
  - Two hundred two of 590 (34 percent) growers from farms classified as fruit or vegetables farms indicated they used none of the listed technologies.
  - For those who do use technology, small volume sprayers were the most commonly used technology, used by 464 respondents, followed by drip irrigation (332 respondents), and mechanical cultivators (314 respondents).
- Most (1,100 of 1,400 or 79 percent) edible specialty crop farms have at least one tractor.
- In total, 17 percent of edible specialty crop farms indicated they had an on-farm packing facility. Farms producing something under protection (i.e. greenhouses, high tunnels) were the most likely to have an on-farm packing facility (27 of 95 farms).
- Half of respondents had liability insurance and participated in pre-season planning. A third understood USDA grade standards and standard packaging requirements and had an on-farm food safety plan.
- Finally, the top reason for declining to take the survey was that potential respondents grew edible specialty crops, but did not sell them.

INTRODUCTION

Iowa is known for being a top producer of corn, soybeans, and hogs. Its deep, prairie soils are among the most fertile in the world. And while driving in the countryside one might see corn and soybeans as far as the eye can see, Iowa's soil and rainfall support specialty crop production, too.

The 2015 Iowa Commercial Horticulture Survey for Food Crops (Hort Survey) showed that many people were entering into production of fruits, vegetables, nuts, honey, and maple syrup. However, it also showed that the scale of these farms was often very small, meaning that edible specialty crop production is often more of a side business than something that provides a full-time livelihood.

The COVID-19 pandemic, which started in spring of 2020, was a turning point for many lives and industries. Early in the pandemic, schools, restaurants, and other gathering places closed to reduce the spread of the virus. Out of necessity, people ate at home more often, and news stories showed empty supermarket and grocery store shelves, as eating at home increased. On the other hand, foods that had been destined for institutional or restaurant use went to waste with some farmers needing to plow under fields of unharvested vegetables.

Some local food businesses were able to fill the gap, with farms offering Community Supported Agriculture (CSA) shares, food hubs offering multi-farm food boxes, and pick your own operations experiencing high demand during the summer and fall of 2020. For example, the Decorah Farmers Market partnered with the Iowa Food Hub to open an online marketplace with contactless home delivery and curbside pickup. Meanwhile, some farmers markets closed, leaving producers who depended on those markets to shift to other outlets.

In response to disruptions triggered by the pandemic, federal and state government agencies responded with programs to help diversify food chains and relieve families and businesses struggling with loss of income. The Iowa Department of Agriculture and Land Stewardship (IDALS) gave mini-grants to four farmers markets to support their efforts to respond to market shifts during the pandemic (Iowa Department of Agriculture and Land Stewardship, 2020). IDALS also offered the Local Produce and Protein Program (LPPP) in the fall of 2020. This program offered three types of grants, including equipment grants to fruit and vegetable farmers, equipment grants for food hubs, and grants to schools for purchasing equipment and local foods (Koether & Enderton, 2021). In addition, the U.S. Small Business Administration offered two rounds of Paycheck Protection Program (PPP) forgivable loans to small businesses to help pay employees, which some edible specialty crop farms in Iowa may have taken advantage of.

Finally, the United States Department of Agriculture Agricultural Marketing Service (USDA AMS) launched sister programs called the Local Food for Schools Cooperative Agreement (LFS) and the Local Food Purchase Assistance Cooperative Agreement Program (LFPA) to improve supply chain resiliency by providing funds to purchase local foods for use in schools and emergency food access points. Over $6 million was awarded to Iowa for these two programs to be used from July 2022 through March 2025.

The COVID-19 public health emergency declaration ended on May 11, 2023 (Centers for Disease Control and Prevention, 2023). However, the effects of the pandemic have been far reaching and continue to be felt at the time of this writing, in May 2025. During the months and years following the pandemic, inflation reached the highest level in decades, supply chain disruptions made accessing goods more difficult, and the cost of labor increased.

Questions remain on how the pandemic has affected edible specialty crop farms in Iowa. Have consumer shifts toward local food experienced in 2020 had a long-term impact on farms? How has access to and the cost of labor shifted? Did the pandemic have any impact on the previously observed trend of people entering local food production for the first time?

This report seeks to answer these questions, utilizing data collected from Iowans commercially producing fruits, nuts, vegetables, honey, maple syrup, pumpkins, or gourds in 2023. It is compared to similar data collected in 2015 and earlier from this same industry.

METHODS

Growers of fruits, vegetables, nuts, berries, honey, maple syrup, pumpkins, and gourds were invited to complete a paper survey.

A survey was developed in collaboration with partners from Iowa State University Extension and Outreach, Iowa Department of Agriculture and Land Stewardship, the National Agricultural Statistics Service (NASS), the Iowa Fruit and Vegetable Growers Association, and University of Iowa. Some survey questions were repeated from the same survey conducted in 1989, 2000, and 2015, while others were novel. The survey was developed from November 2022 through January 2023 and was approved by the United States Office of Management and Budget.

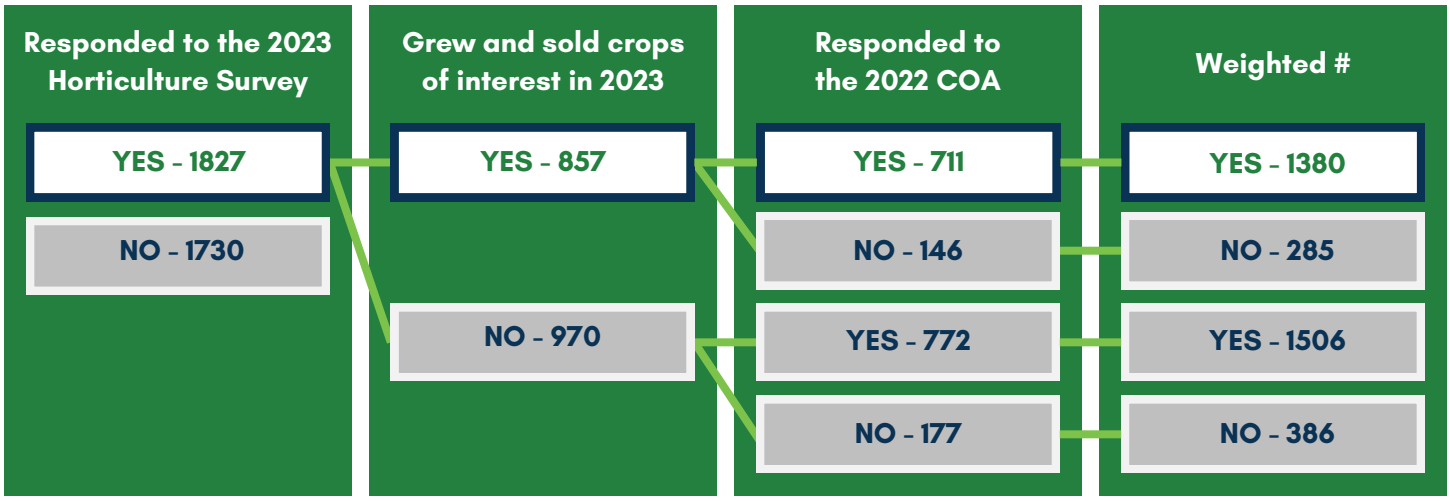
NASS sent the survey to their contact list of growers who in the past have indicated they grew the crops of interest, or for whom NASS had reason to believe might be producing these crops. The survey was conducted on paper and was sent to 3,557 people in January 2024. A second request to complete the survey was sent in February 2024 to those who had not yet completed the survey. Follow-up phone calls were made to those who did not respond to either of the first two requests.

A total of 2,084 responses were received. Of these, 228 were duplicates and 29 were blank. Therefore, a total of 1,827 unique responses were received and the response rate was 51 percent. Out of these responses, 857 indicated they grew and sold the crops of interest in 2023. These individuals were directed to complete the remainder of the survey. Those who indicated they did not grow and sell the crops of interest in 2023 were directed to complete one final question, which asked reasons for not qualifying for the survey.

Most analyses are from those who grew and sold crops of interest in 2023; additional analyses are available for those who also responded to the 2022 Census of Agriculture.

In addition, several variables from the 2022 Census of Agriculture (COA) were received. To qualify for inclusion in the COA data set, a producer needs to sell at least $1,000 total in agricultural products or in a normal year would have sold at least $1,000. Respondents were instructed not to include home gardens in their reporting. The COA data set received for this project was matched with the Hort Survey data set, case by case. Census of Agriculture data were received only for people who responded to the Hort survey. Therefore, some respondents to the survey had no data for the COA questions. However, we did not receive data for any respondents who completed the COA, but not the Hort Survey. Census of Agriculture variables were received for 1,483 respondents, 711 of whom qualified for the Hort Survey. Figure 1 shows a diagram of how respondents fit into the dataset according to which surveys they completed.

Figure 1: Schema of response numbers and survey qualification



Number of unweighted responses, except in rightmost column.

The response rate was 51 percent in 2023, a decrease from previous surveys.
The response rate to the Hort Survey has declined over time, shown in Table 1. This is consistent with a general trend in survey research.

Table 1: Iowa Commercial Horticulture Survey for Food Crops Response Rates by Year

	1989	2000	2015	2023
Total invited	3150	3601	4676	3557
Total unique responses	2520	2180	2566	1827
Response rate	**80%**	**61%**	**55%**	**51%**
Total respondents who grew and sold crops of interest	1400	572	882	857

A description of how weights were applied and of analysis techniques is included in Appendix A.
The survey sampling technique did not account for under coverage, over coverage, nor misclassification, which is a limitation of this survey.

RESULTS

FARM CHARACTERISTICS

FARM SIZE

In total, edible specialty crop farms covered 11,650 acres in 2023. Median farm size was 2.8 acres and average farm size was 7.8 acres.

Median farm size was 2.8 acres, meaning half of respondents produced on fewer than 2.8 acres, and half produced on more than 2.8 acres. This was an increase from 2015 when the median was 2.0. There was a slight shift in 2023 away from the very smallest farm size category (0-1 acres) to larger (yet still small) farms (1.1 to 10 acres). Figure 2 shows the distribution of farm size over time.

The average farm size was reported at 7.8 acres. The average is greater than the median, because of the contribution of some larger farms.

Figure 2: Total acreage in edible specialty crop production

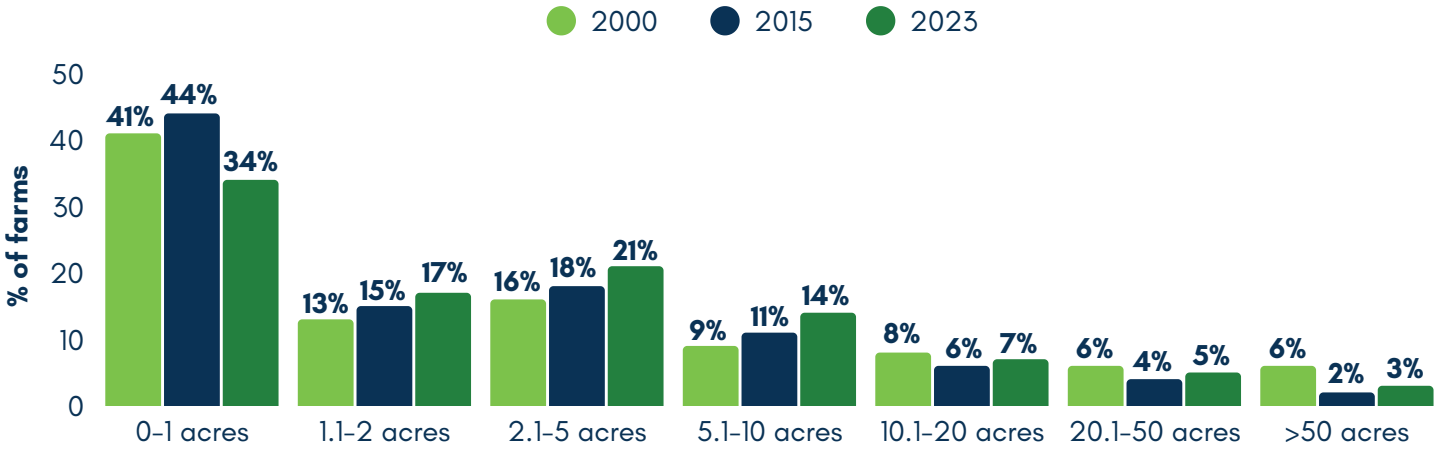
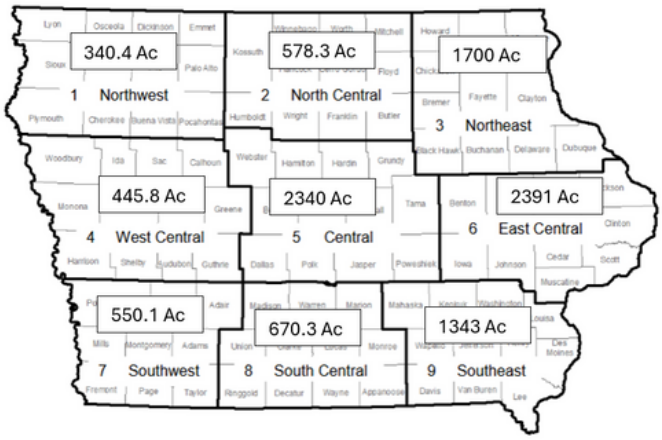


Figure 3 shows where these acres are located in the state, divided into nine USDA regions. The highest acreage is reported in the East Central region, with 2,391 acres, followed by the Central region, with 2,340 acres. Not all respondents provided their location via the COA, so the location of 1,294 acres of specialty crop production is unknown.

Figure 3: Acres of edible specialty crop production by region.



Note: The location of 1,294 acres is unknown, because respondents who farm these acres did not complete the 2022 Census of Agriculture.

NUMBER OF FARMS

The number of edible specialty crop farms dropped between 1989 and 2000 but has since rebounded.

The Hort Survey response rate can be used to estimate the number of edible specialty crop producers and how that has changed over time. It shows that in 1989 there were an estimated 1,400 edible specialty crop producers. This appears to have dropped by 33 percent to 938 producers in 2000. However, the number of specialty crop producers appears to have rebounded to 1,604 by 2015 and increased slightly to 1,680 by 2023, shown in Table 2.

Table 2: Estimated number of edible specialty crop farmers in each Hort Survey year

	1989*	2000	2015	2023
# of survey respondents who grew and sold crops of interest	1400	572	882	857
Hort Survey response rate	80%	61%	55%	51%
Estimated total # of edible specialty crop producers	**1400**	**938**	**1604**	**1680**

** 1989 survey methodology section indicates all those who did not respond to the survey had either passed away or moved. It was explained that this was a true census, having received a response from all producers. Thus, the respondent number and the estimated total number of producers are equal.*

The total number of farms producing every broad category of edible specialty crops has increased since 2007.

To add clarification regarding the number of edible specialty crop farms in Iowa, COA estimates of the total number of farms producing each class of specialty crop are shown in Table 3. (The table goes back to 2007, because data prior to that was organized differently, making comparison impossible.) The categories are not mutually exclusive, meaning many farms likely produced multiple crop categories. Thus, the numbers in Table 3 cannot be added to generate a total.

Nevertheless, the data in Table 3 is useful for understanding the trend in number of farms producing edible specialty crops since 2007. It shows that for all classes of specialty crops the number of farms has increased. The increase is consistent with Hort Survey data in Table 2, showing an increase in the number of edible specialty crop farms from 2000 to 2023, the time period that most closely overlaps with that of the COA data in Table 3.

Table 3: Number of farms producing each crop category from Census of Agriculture published reports

	2007*	2012	2017	2022
Vegetables, potatoes and melons	855	978	1119	1073
Honey	362	446	926	1229
Fruits and nuts	735	422	684	732
Berries		212	455	490
Greenhouse vegetables and fresh cut herbs	106	210	263	216
Maple syrup	53	38	53	87
Greenhouse fruits and berries	4	12	20	16
Mushrooms	-	5	4	14

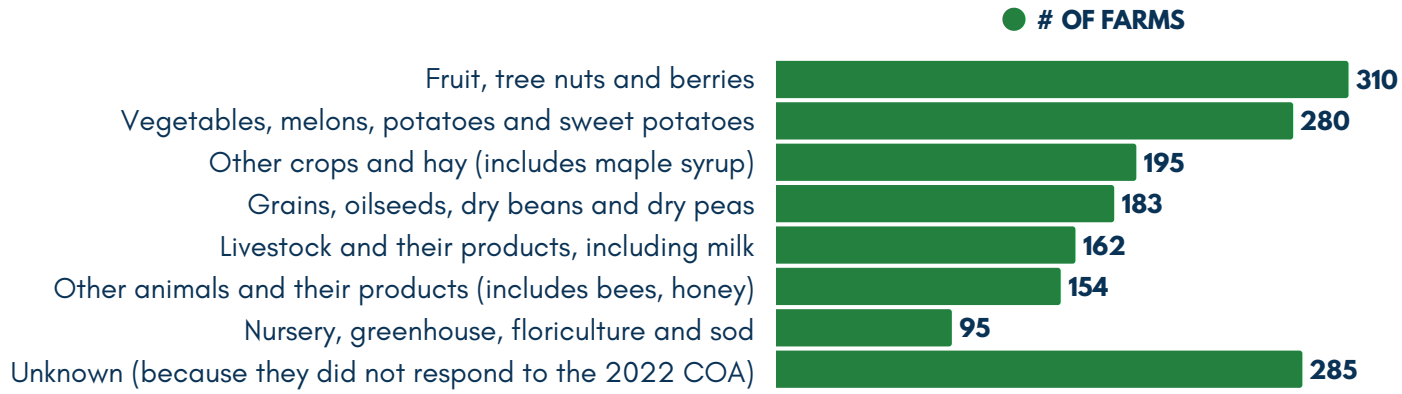
** Fruits and nuts and berries were combined in 2007.*

FARM TYPE

The largest number of edible specialty crop farms was classified as fruit, tree nut, and berry farms, followed by vegetable, melon, potato, and sweet potato farms.

The COA provided a variable that categorized farms which took both the COA and the 2023 Hort Survey into unique farm types. The category to which each farm is assigned is based on which farm enterprise yielded the highest gross sales in 2022. Figure 4 shows that respondents were most commonly categorized as fruit, nut, and berry farms, followed by vegetable, melon, potato, and sweet potato farms. However, a large number were also categorized as other crop producers (which includes maple syrup), grain farms, livestock producers, other livestock producers (which includes honey production, which is of interest to the survey), and greenhouse producers. These data show that edible specialty crop farming is occurring on all types of farms and may indicate that specialty crop farms are diversified.

Figure 4: Census of Agriculture farm type of edible specialty crop farms in 2023.



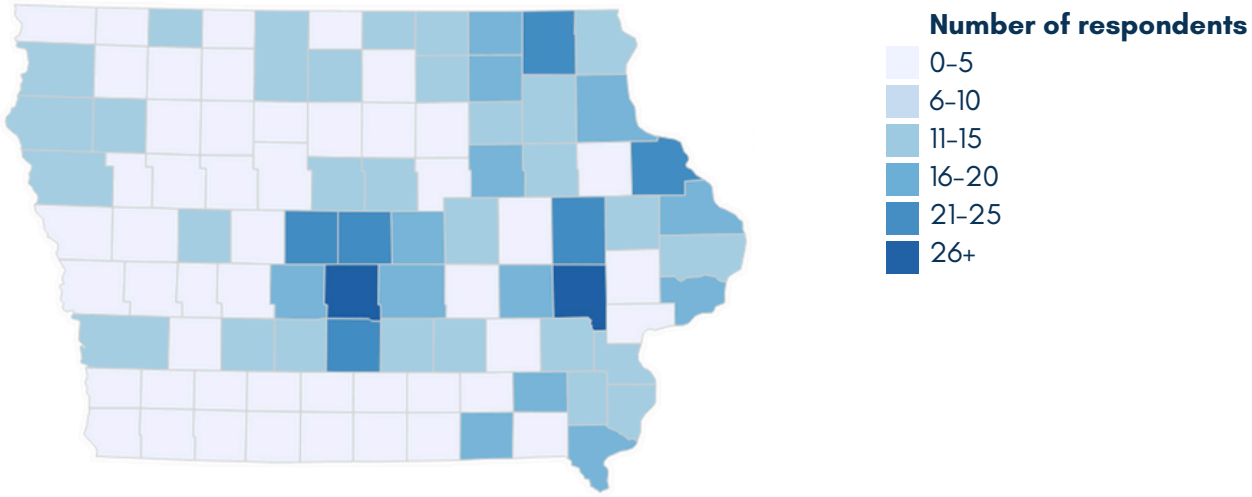
COUNTY

The highest number of responses came from Polk County and Johnson County.

Figure 5 shows the number of respondents from each county in Iowa. The highest number of responses came from Polk County, which is the most populous county in Iowa, and Johnson County, the home of Iowa City, the University of Iowa and adjacent to Linn County, the second most populous county in Iowa. In general, the western part of Iowa had few responses, which is not surprising given it is a less populous part of the state. Unlike commodity farms, edible specialty crop farms tend to be located closer to population centers, due to the direct-to-consumer marketing strategy that many of these farms use.

Based on their knowledge of specialty crop production in the state, collaborators on the 2023 Hort Survey planning team expected the fewest responses to be from the Northwest region, rather than the Southwest. This expectation was based on their knowledge of farms in the state, and the understanding that there are fewer local food farms in northwest Iowa. The responses to this survey may show that there are edible specialty crop farms in northwest Iowa that are not known to support organizations in the state, or it could mean that the response rate was higher in northwest Iowa than southwest Iowa for an unknown reason.

Figure 5: Total raw (unweighted) respondents by county*



**The county of 285 respondents is unknown, because they did not respond to the 2022 COA.*

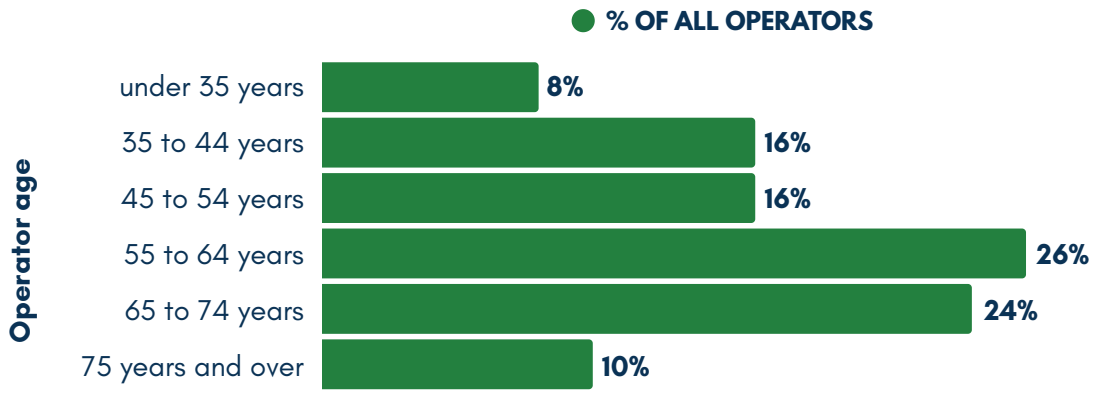
RESPONDENT CHARACTERISTICS

AGE

Half of edible specialty crop growers are between the ages of 55 to 74 years.

The average age of all operators who responded to the Hort Survey (and for whom we have 2022 COA data) was 57.2 years, which is similar to the average age of all Iowa farmers, 57.6 years. Ten percent of all Iowa producers are considered young (under the age of 35 years) (United States Department of Agriculture , 2024). Specialty crop farmers were not much different, with 8 percent considered young. Figure 6 shows the age distribution of edible specialty crop farmers.

Figure 6: Percent of all edible specialty crop farm operators by age

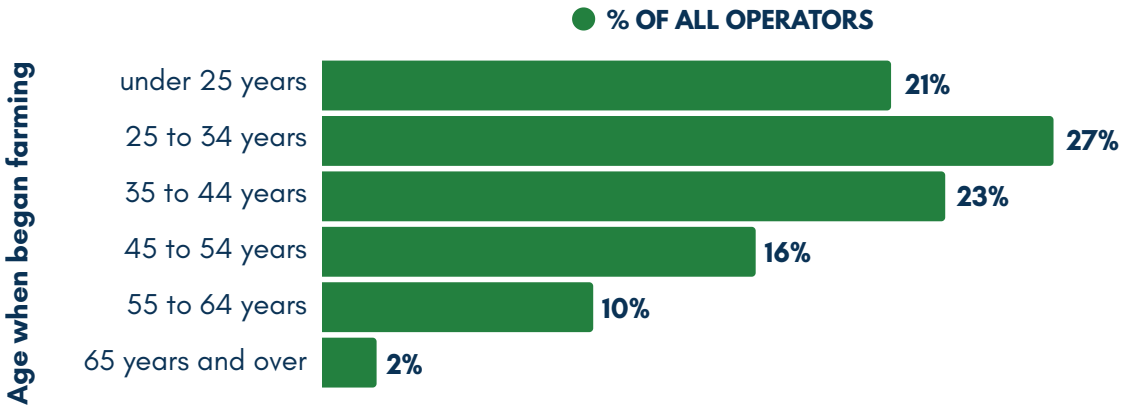


AGE WHEN BEGAN FARMING

Nearly half of edible specialty crop farmers started farming under the age of 35 years.

Nearly half of edible specialty crop farmers began farming under the age of 35, shown in Figure 7. Interestingly, the data showed that 12 percent of specialty crop farmers began farming at the age of 55 or older, which may indicate that specialty crop farming is a post-retirement occupation for some.

Figure 7: Age at which all specialty crop farmers began farming



Age when edible specialty crop growers began farming differed by primary farm product.

Table 4 shows the median and average age at which farmers began farming according to their farm type (i.e., the highest dollar grossing product on their farm). Those whose primary product is grain, greenhouse crops, or livestock began at the youngest ages (median of 30 years or younger). Vegetable growers tended to begin farming at a younger age (median of 34.1 years) than fruit, nut, and berry producers (median of 41.9 years). Perhaps this is due to the high physical labor requirements of vegetable growing, which may discourage older individuals from pursuing this type of farming. Alternatively, the up-front cost of planting a perennial crop may prevent younger people from entering fruit, nut, and berry production, whereas older individuals may have had more time to save or gain access to credit that would allow for this type of farm to be purchased or planted.

Table 4: median and average age when edible specialty crop farmers began farming by farm type

FARM TYPE (HIGHEST DOLLAR GROSSING FARM PRODUCT CATEGORY)	MEDIAN AGE IN YEARS WHEN BEGAN FARMING	MEAN AGE IN YEARS WHEN BEGAN FARMING
Grains (includes corn, soybeans, etc.)	27.7	30.6
Nursery, Greenhouse, Floriculture, and Sod (including mushrooms, greenhouse tomatoes)	28.6	32.3
Livestock and their products including milk	30	32.8
Vegetables, Melons, Potatoes, and Sweet Potatoes	34.1	35.2
Other Crops and Hay (includes maple syrup)	37.8	39
Other Animals and Other Animal Products (includes bees, honey)	41.5	40.3
Fruit, Tree Nuts, and Berries	41.9	41.7

YEARS FARMING

Nearly 1/3 of edible specialty crop farmers are beginning farmers.

On average, edible specialty crop farmers have been farming for fewer years than the larger population of farmers in Iowa. On average, edible specialty crop growers have been growing for 21.6 years, whereas the 2022 COA data showed that, on average, all Iowa farmers have been operating a farm for an average of 26.2 years, shown in Table 5 (United States Department of Agriculture, 2024).

Table 5: Compilation of statistics regarding years farming, years on current operation, and years producing edible specialty crops

	MEAN	MEDIAN	SOURCE OF VARIABLE	COMPARISON TO MEAN OF ALL IOWA FARMERS
Years farming	21.6	18	COA	26.2 years
Years on current operation	19.4	15	COA	23.8
Years producing edible specialty crops	10	13.8	2023 Hort Survey	NA

Figure 8 shows the distribution of years farming of Hort Survey respondents for whom we have COA data. It shows that 30 percent have been farming 10 years or fewer; they meet the definition of a beginning farmer. Similarly, 27 percent of all Iowa farmers are considered beginning farmers (United States Department of Agriculture , 2024).

Some edible specialty crop farmers began their operations with some other crop or agricultural product and later added edible specialty crops.

Over half (56 percent) of edible specialty crop growers have been producing edible specialty crops for 10 years or less, shown in Figure 9. This is similar to the results of the 2015 Hort Survey (59 percent). These results showed that edible specialty crop growers are somewhat inexperienced in Iowa, and there is high interest in beginning these types of operations. However, the lack of more experienced growers may point to high turnover among specialty crop growers in Iowa.

Putting these two measures together (years farming any crop and years growing edible specialty crops) implies that many farms began producing a crop other than edible specialty crops and later added edible specialty crops to their operation.

Figure 8: years edible specialty crop farmers have been farming

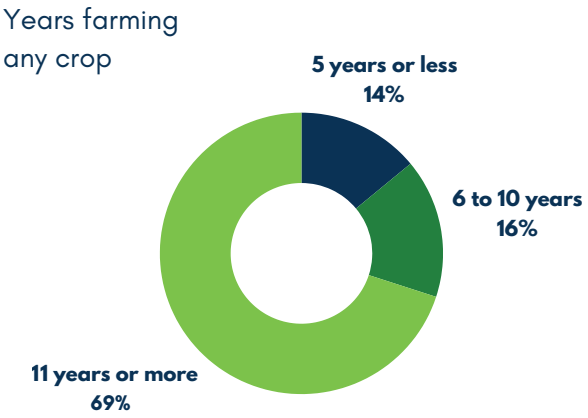
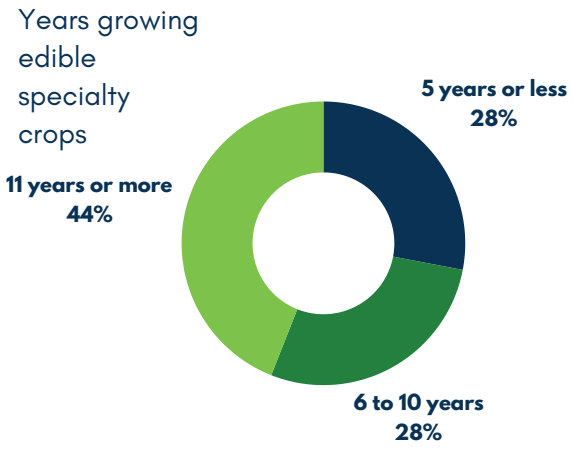


Figure 9: years edible specialty crop farmers have been growing edible specialty crops



HOUSEHOLD INCOME

The number of producers deriving all or most of their household income from the sale of edible specialty crops fell between 1989 and 2000 but may be rebounding.

From 1989 to 2023 the number of producers deriving one percent or less of their income from the sale of specialty crops greatly increased, while the number of producers in the other categories shrank from 1989 to 2000 and appear to have rebounded or remain steady, shown in Table 6.

Table 6: Number of growers by percent of household income derived from the sale of edible specialty crops

% OF HOUSEHOLD INCOME DERIVED FROM SALE OF EDIBLE SPECIALTY CROPS	NUMBER OF GROWERS, ADJUSTED FOR NONRESPONSE			
	1989	2000	2015	2023
1% or less	238	181	547	550
2 to 5%	532*	173	227	250
6 to 10%		143	171	150
11 to 20%	140	83	129	100
21 to 40%	154	90	129	80
41 to 70%	140	60	85	60
71 to 100%	196	38	53	90

**In 1989, the categories of 2 to 5% and 6 to 10% were combined.*

LABOR

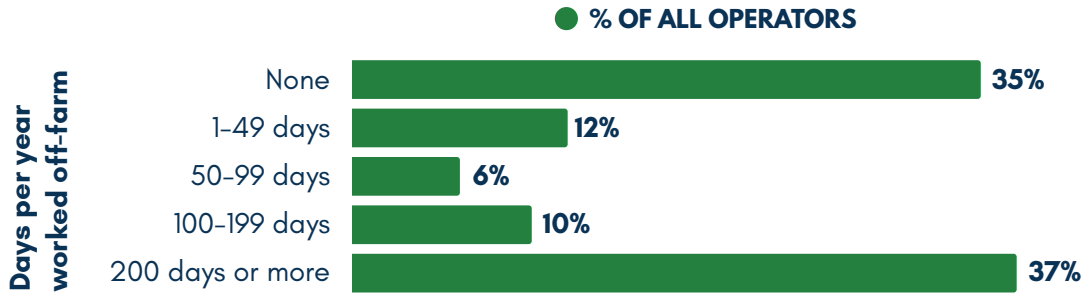
PRIMARY OCCUPATION

Most edible specialty crop growers have another job.

Forty-four percent of Hort Survey respondents cited farming as their principal occupation. This is identical to that of all farmers in Iowa (United States Department of Agriculture , 2024).

Thirty-five percent of edible specialty crop farmers did not work any days off the farm in 2022, shown in Figure 10. This is slightly lower than that of all Iowa farmers, of whom 40 percent did not work any days off the farm in 2022 (United States Department of Agriculture , 2024).

Figure 10: Days worked per year off farm by edible specialty crop operators

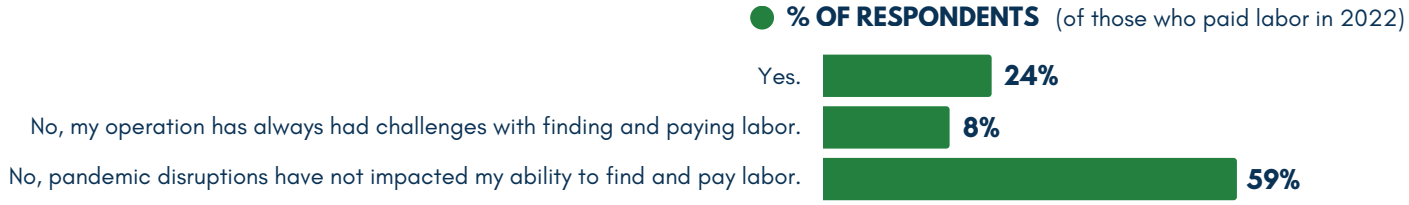


HIRED WORKERS

About 1 in 4 operations indicated that it has been harder to find and pay labor since March 2020 when the COVID-19 pandemic started.

The 2023 Hort Survey asked growers whether the pandemic and its associated disruptions had affected their ability to find and pay labor. Twenty-four percent of respondents indicated the pandemic made it more difficult to find and pay labor, and another 18 percent indicated that it had not made it more difficult to find and pay labor, because their operation had always had challenges doing so, shown in Figure 11. (This analysis includes only those who indicated on the 2022 COA that they paid labor.)

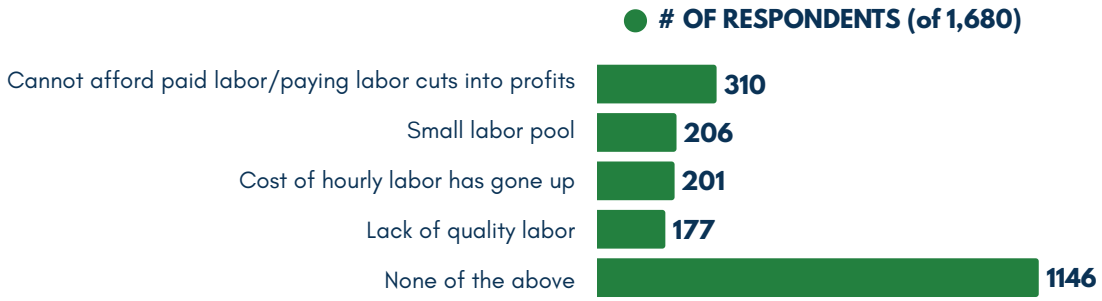
Figure 11: impact of the COVID-19 pandemic on farmers' abilities to find and pay labor
Since the COVID-19 pandemic has it been more difficult to find and pay labor?



Most edible specialty crop growers experienced no challenges accessing paid labor.

When asked which challenges, if any, growers have experienced in accessing paid labor, most did not identify any challenges. However, among those who did identify challenges, the most common was not being able to afford to pay labor or that paying labor cuts too much into profits, selected by 310 weighted respondents, shown in Figure 12.

Figure 12: Challenges growers have experienced in accessing paid labor
Which challenges, if any, have you experienced in accessing paid labor?



Unpaid family members, friends, neighbors, and volunteers were the labor source used by the greatest number of edible specialty crop farms.

Responses from people who responded to the 2023 Hort Survey and the 2022 COA were analyzed to understand the types of labor used on these farms. Of the various sources of labor that could work on an edible specialty crop farm, unpaid workers were found on the greatest proportion of farms (42 percent). Unpaid workers may include family, friends, neighbors, or volunteers who donate their time to the farm. Twenty-six percent of edible specialty crop farms employed workers who worked less than 150 days on the operation and 10 percent employed workers who worked 150 days or more on the operation per year. The reliance on seasonal labor is not surprising given the seasonal nature of edible specialty crop production.

The percent of farms employing migrant workers was quite low in 2022, two percent, but the average number of migrant works per farm (5.7) was higher than for other types of workers. While farms indicate that it is difficult to access paid labor, it appears that migrant labor may not be an appropriate solution. The reason for this could be the impression that migrant labor available through the H2A program is expensive or doesn't fit their needs, such as needing part-time, rather than full-time, labor.

Table 7: Number of workers employed by edible specialty crop farms by worker type

	% OF FARMS EMPLOYING THIS TYPE OF WORKER (OF 1380)	MEDIAN # WORKERS PER FARM	AVERAGE # WORKERS PER FARM
Unpaid workers	42%	2	3.1
Workers who worked less than 150 days on the operation	26%	2.9	4.9
Workers who worked 150+ days on the operation	10%	2	4.7
Migrant workers	2%	*	5.7

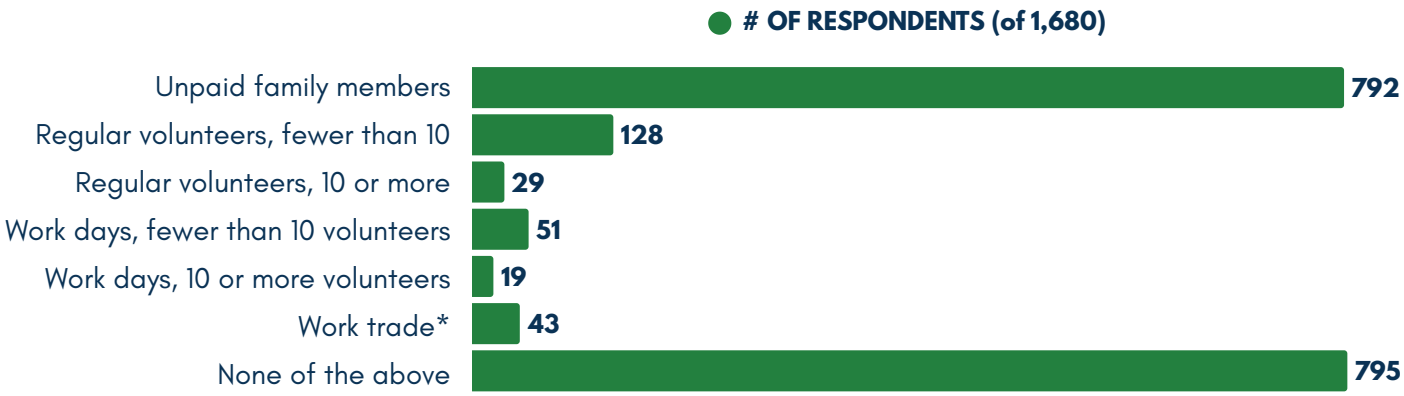
**This analysis was not performed.*

UNPAID WORKERS

Unpaid labor on farms was most often provided by family members.

Figure 13 shows the ways farms accessed unpaid labor in 2023. The most common source of unpaid labor, by far, was family members on 792 of 1,680 farms. Several (128 farms) also had regular volunteers working on the farm, usually fewer than 10 of them.

Figure 13: Forms of unpaid labor on specialty crop farms
Did you utilize any of the following forms of unpaid labor on your farm in 2023?



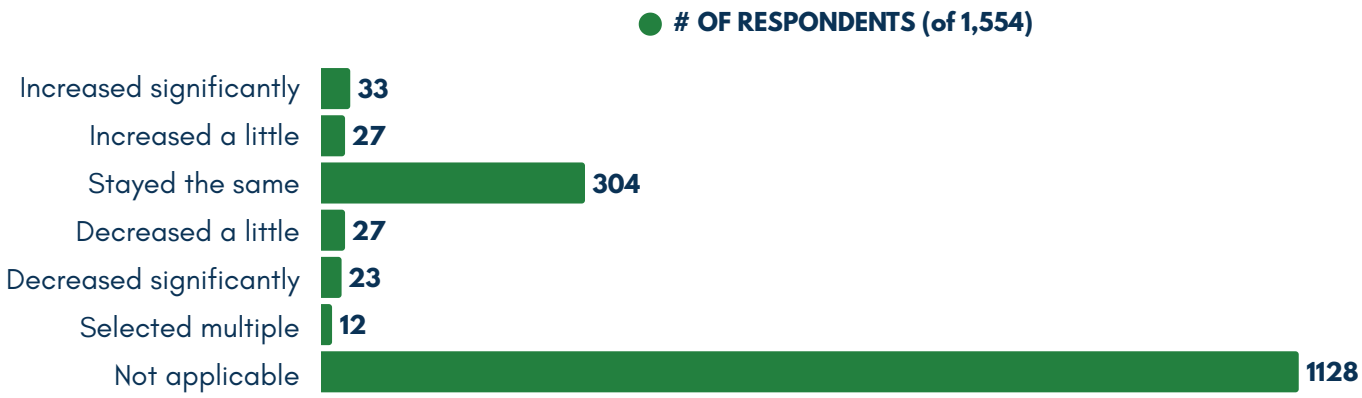
**Such as trading labor with other farmers or exchanging farm products for labor.*

Growers largely indicated reliance on unpaid labor has not changed since the start of the COVID-19 pandemic.

For the most part, growers indicated their reliance on unpaid labor has not changed compared with pre-COVID (304 of 414 respondents to whom the question applied), shown in Figure 14. A small number (60) indicated their dependence on unpaid labor had increased, but nearly as many (50) indicated it had decreased. It is notable, however, that reliance on unpaid labor is high among edible specialty crop growers.

Figure 14: How reliance on unpaid labor on edible specialty crop farms changed since the start of the COVID-19 pandemic

How has your reliance on unpaid labor changed compared with pre-COVID prior to March 2020?



CROP SALES AND MARKETING

GROSS SALES FROM THE 2022 CENSUS OF AGRICULTURE

Total sales of all edible specialty crops have increased by 73 percent from $45.7 million in 2012 (adjusted for inflation) to $79 million in 2022.

Table 8 shows sales from 2007 to 2022 for eight specialty crop categories, using COA published reports (United States Department of Agriculture , 2024). Table 9 shows the values adjusted for inflation to the equivalent of December 2022 dollars.

Sales in 2022 were highest for vegetables, potatoes, and melons grown outdoors ($25,100,000 followed by vegetables produced in greenhouses or high tunnels ($20,708,741), of which tomatoes are the most common. Sales of berries grown outdoors ($14,114,000) eclipsed sales of fruits and nuts ($12,782,000) for the first time in 2022, although sales of fruits and nuts have also increased significantly over time.

The final column of Table 9 also shows the percent change in sales from 2012 to 2022. (The calculation does not begin with 2007, because several changes were made between 2007 and 2012 in how crop sales were categorized, making comparison difficult.) Total sales of all edible specialty crops have increased by 73 percent from $45,677,976 in 2012 (adjusted for inflation) to $79,069,194 in 2022.

For most specialty crop categories, sales have increased over time, and in some cases, substantially. Sales of berries increased by 1,478 percent from 2012 to 2022. While maple syrup remains a minor specialty crop in Iowa, sales have increased nearly 10 times from $43,951 (adjusted for inflation) in 2012 to $413,000 in 2022. Sales of vegetables, potatoes, and melons have remained steady from 2012 to 2022.

This general increase in sales was accompanied by an increase in the number of people who grew these crops during that time frame.

Table 8: Edible specialty crop sales, not adjusted for inflation

	2007*	2012	2017	2022
Vegetables, potatoes and melons	$16,310,000	$19,699,000	$20,253,000	$25,100,000
GH vegetables and fresh cut herbs	$7,570,534	$7,353,301	$9,815,025	$20,708,741
Berries	$7,371,000	$692,000	$3,938,000	$14,114,000
Fruits and nuts		$2,976,000	$6,931,000	$12,782,000
Honey	-	$4,462,000	$3,717,000	$5,485,000
Mushrooms	-	$120,003	$93,816	$421,286
Maple syrup	-	$34,000	$163,000	$413,000
GH fruits and berries	$12,470	D	$93,374	$45,167
Total	**$31,264,004**	**$35,336,304**	**$45,004,215**	**$79,069,194**

**Fruits and nuts and berries were combined in 2007. Sales not available for maple syrup, honey, and mushrooms. D - data suppressed to protect respondent confidentiality. GH - greenhouse or covered production.*

Table 9: Edible specialty crop sales, adjusted for inflation to December 2022 dollars

	2007*	2012	2017	2022	% CHANGE FROM 2012 TO 2022
Vegetables, potatoes and melons	$23,047,283	$25,464,193	$24,383,142	$25,100,000	-1%
GH vegetables and fresh cut herbs	$10,415,789	$9,505,349	$11,816,578	$20,708,741	118%
Berries	$10,415,789	$894,524	$4,741,066	$14,114,000	1478%
Fruits and nuts		$3,846,969	$8,344,421	$12,782,000	232%
Honey	-	$5,767,868	$4,474,998	$5,485,000	-5%
Mushrooms	-	$155,124	$112,948	$421,286	172%
Maple syrup	-	$43,951	$196,240	$413,000	840%
GH fruits and berries	$17,621	D	$112,416	$45,167	NA
Total	**$44,178,439**	**$45,677,976**	**$54,181,808**	**$79,069,194**	**73%**

**Fruits and nuts and berries were combined in 2007. Sales not available for maple syrup, honey, and mushrooms. D- data suppressed to protect respondent confidentiality. GH- greenhouse or covered production.*

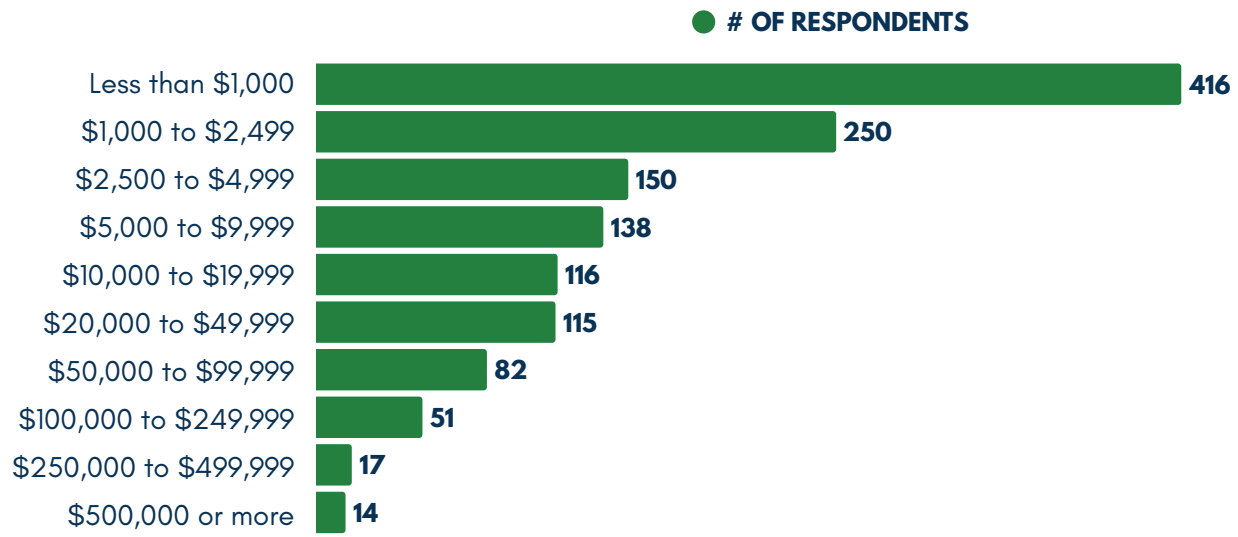
GROSS SALES BY SIZE CATEGORY IN 2023

Figure 15 shows gross farm sales of edible horticulture crops by gross sales category. Similar to 2015, a high number of respondents reported very low sales. The most common sales category in 2023 was less than $1,000, followed by sales between $1,000 and $2,499.

In 2023, the state of Iowa experienced an ongoing and deepening drought. In addition, a late frost in 2023 caused many fruit producers to lose their crop. There were numerous hail events in 2023 as well. Any of these conditions may have contributed to low farm-level sales of edible specialty crops, although farm scale is likely a contributor.

While this survey did not ask about profitability, these sales numbers make one question whether growers selling less than $2,500 in gross sales intend to make a profit from their edible specialty crop enterprise.

Figure 15: 2023 gross sales of edible specialty crops by sales category

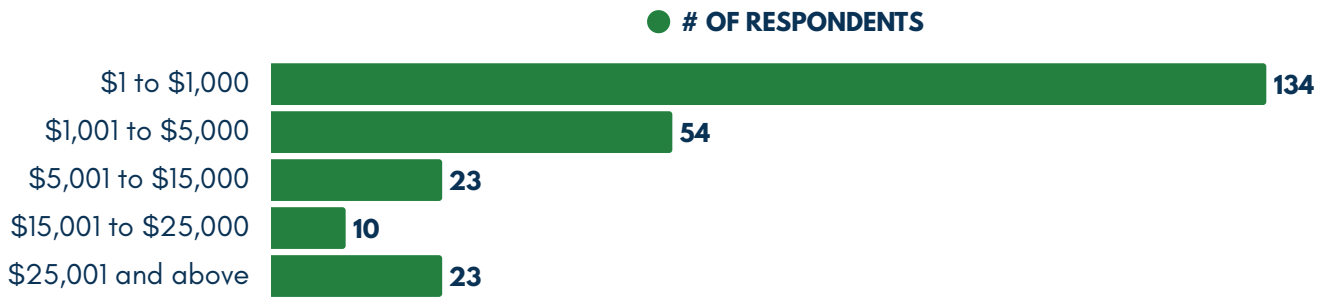


RESALE OF CROPS

A small portion (12.5 percent) of respondents indicated they purchased specialty crops to resell, usually selling less than $1,000 worth of product.

A small portion (12.5 percent) of respondents indicated they purchased specialty crops to resell. This might be a strategy used to supply on-farm stores or stands if farm production falls short or to provide products that one does not grow on their own farm. Figure 16 shows the dollar value of crops which were purchased to resell. Respondents most often purchased and resold less than $1,000 worth of edible specialty crops, occurring on 134 farms.

Figure 16: Dollar value of crops purchased to resell



CROP INSURANCE

Edible specialty crop growers rarely used crop insurance for those crops; only four percent indicated their crops were covered by insurance.

Four percent of 2023 Hort Survey respondents indicated their edible specialty crops were covered by crop insurance in 2023. Despite efforts of the USDA to create crop insurance options that are better suited to specialty farms (U.S. Department of Agriculture Risk Management Agency, 2025), the survey shows that there has not been widespread adoption in Iowa. Corroborating the 2023 Hort Survey, the United States Department of Agriculture Risk Management Agency (USDA RMA) reported that in 2023, four percent of apple acres in Iowa were covered by crop insurance (U.S. Department of Agriculture Risk Management Agency). Anecdotal evidence suggests that farmers find the record keeping necessary to attain crop insurance to be onerous and the experience of making a claim is not as straightforward with specialty crops as with corn and soybeans. There may also be a lack of awareness among edible specialty crop producers that crop insurance is available to them. Other growers believe that their diversity is their insurance, because when one crop fails another may thrive.

VALUE ADDED PRODUCTION

Edible specialty crop farms sold an estimated $11.3 million in value-added products in 2023. Sales were highest of red and white wine, but canned and jarred goods were made by the most respondents.

In 2023, 17 percent of edible specialty crop farms indicated they produced and sold processed or value-added products from their own production. This could include things such as preserves, cider, baked goods, and salsa.

Table 10 shows the median, average, and total value of various value-added products which farms processed themselves or which someone else custom processed for them. In total, the sales of value-added products generated $11,280,000 in sales. Sales were highest of red and white wine and "other" processed products.

Canned and jarred goods were the most common value-added products, but median sales of these products were the lowest ($663).

Table 10: 2023 Sales of value-added products made and sold by edible specialty crop farms

	MEDIAN	MEAN	TOTAL	# OF FARMS
White wine	$71,570	$95,220	$2,787,000	29
Red wine	$39,750	$53,540	$1,776,000	33
All baked goods	$2,718	$22,610	$1,544,000	68
Hard cider	D	$114,600	$1,341,000	12
Apple juice and cider	$3,390	$25,060	$831,100	33
Other fruit wines	D	$48,600	$474,100	10
Canned and jarred goods	$663	$3,803	$443,300	117
All other goods	$939	$18,860	$2,087,000	111
Total of all products	**$1,790**	**$40,800**	**$11,280,000**	**277**

D - Data suppressed to protect confidentiality.
**In some cases, the mean multiplied by the total # of farms does not equal the total, because not all farms reported the value of their sales.*

AGRITOURISM

Fifty-six edible specialty crop farms received income from agritourism, reporting a total of $6.6 million.

Although agritourism was implemented on a small number of specialty crop farms, it was a significant source of income for them. The median income from agritourism showed that half of specialty crop farms with agritourism earned more than $7,150 and half earned less than that amount in 2022, shown in Table 11. The average agritourism income was $118,200. The average was much higher than the median, which indicates a few edible specialty crop growers earned a substantial income from agritourism.

The 2023 Hort Survey planning team was expecting to see more farms indicating that they participate in agritourism. This calls into question how this is measured on the COA. Might some farms with agritourism activities underreport, because the activities did not generate income? Might farmers and researchers define agritourism differently? Are farmers familiar with the term "agritourism?"

Table 11: 2022 Agritourism income on edible specialty crop farms

# OF FARMS RECEIVING AGRITOURISM INCOME	56
Median income	$7,150
Average income	$118,200
Total income	$6,633,000

MARKET CHANNELS

On-farm sales/stores and farmers markets were the market channels most used by edible specialty crop growers.

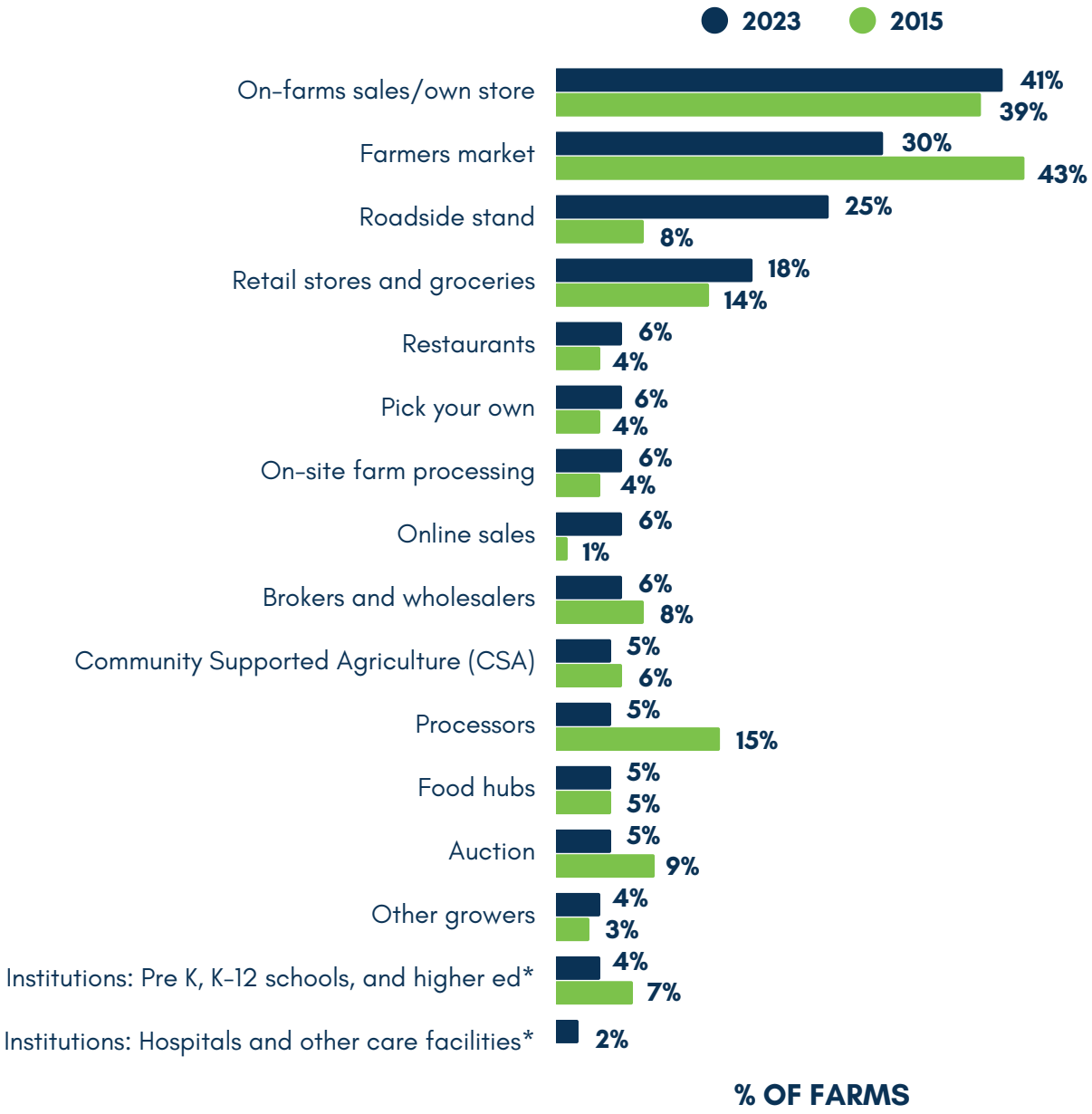
On average, edible specialty crop farmers sold through 1.9 distinct market channels. Figure 17 shows the markets through which respondents sold their edible specialty crops. On-farm sales/stores and farmers markets were, by far, the most commonly used marketing channels, followed by roadside stands.

From 2015 to 2023 there was a slight shift in the prevalence of selling at farmers markets to several other market channels.

When compared with the marketing channels used in 2015, the use of farmers markets declined from 43 percent of producers selling at them to 30 percent.

There was also a notable decrease in the proportion of respondents selling to processors, which may be due, at least partially, to the closure of a key processor in 2019. Concurrently, there was a great increase in the percent of producers selling at roadside stands.

Figure 17: Markets used by edible specialty crop growers in 2015 and 2023



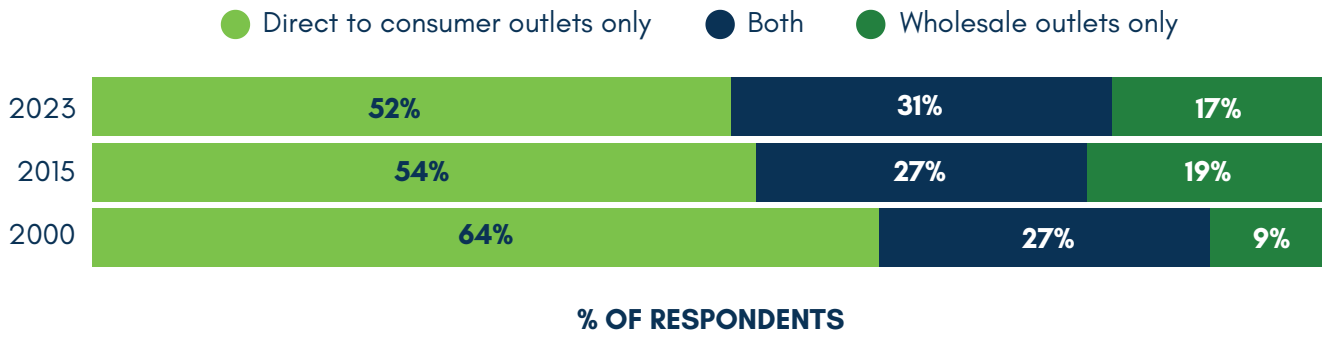
** The two institutional categories were combined in 2015.*

About half of edible specialty crop growers sold exclusively through direct-to-consumer outlets in 2023.

In 2023, 52 percent of specialty crop farms sold exclusively through direct-to-consumer outlets, while 17 percent sold exclusively through wholesale and intermediated markets. The remainder (31 percent) sold products through both types of channels.

While the change in the percentage of specialty crop growers who market through farmers markets was substantial, Figure 18 shows that the market mix which farms use has not changed from 2015 to 2023. Although there was a noticeable change from 2000 to 2015.

Figure 18: Market mix used by growers over time



Median and average farm sales tended to be highest to large-volume buyers, even though these buyers often pay less per unit of product.

Table 12 shows the median, average, and total farm sales through each type of marketing outlet. Not surprisingly, median and average sales through wholesale and intermediated market outlets tended to be higher than direct-to-consumer outlets, with a few exceptions. Community Supported Agriculture is a direct-to-consumer marketing strategy that tended to yield high sales. Sales to food hubs, which are an intermediated market, tended to be a little bit lower than other wholesale type markets, which could be a function of the food hubs in Iowa being relatively young businesses that are working to scale up. Median sales to retail stores and groceries were relatively low, but due to the number of farms selling through this outlet and the high average sales, total sales to retail stores and groceries are the highest of all markets. (The average was much higher than the median, indicating there were some outliers, meaning some growers sold a lot to retail stores and groceries.)

Despite direct-to-consumer markets being known for providing the best price to farmers, average and median sales through these methods tended to be lower, likely due to low-volume sold through these channels.

Table 12: Average, median, and total farm sales by marketing outlet

MARKETING OUTLET Green highlighted lines = direct-to-consumer Clear lines = wholesale or intermediated market Blue highlighted line = neither	MEDIAN FARM SALES	MEAN FARM SALES	TOTAL FARM SALES	# OF FARMERS CONTRIBUTING DATA, WEIGHTED
Auction	$9,730	$23,150	$1,692,000	73
Processors	$5,035	$22,640	$1,700,000	75
Community Supported Agriculture (CSA)	$4,859	$17,590	$1,418,000	81
Institutions: hospitals and other care facilities	$4,693	$9,363	$264,900	28
Brokers and wholesalers	$4,533	$36,420	$3,748,000	103
Institutions: Pre K schools, K through 12 schools, and universities/colleges	$3,768	$14,190	$705,900	50
Pick your own	$2,961	$14,560	$1,277,000	88
Farmers market	$2,380	$10,940	$4,259,000	389
Retail stores and groceries	$2,364	$36,520	$8,598,000	235
Restaurants	$2,288	$11,270	$1,029,000	91
Food hubs	$1,637	$7,288	$522,600	72
Other growers	$1,494	$7,288	$396,600	54
Roadside stand	$886	$7,441	$1,204,000	162
On-farm sales/own store	$877	$6,724	$3,879,000	577
Online sales	$858	$6,168	$526,100	85
On-site farm processing	$654	$17,000	$1,449,000	85

PRODUCTION ON CONTRACT

Most growers who sold to a processor did so without the use of a contract.

The 2023 Hort Survey asked those who sell to a processor whether they had a contract with that processor. Of the 90 respondents who indicated they sold to a processor, only 13 indicated they had a contract. This could include producing fruits or vegetables for canneries, freezing companies, fresh cut processors, wineries, or juice producers. This low number of respondents who have a production contract may indicate these transactions were made using 'handshake' agreements. The lack of these contracts could also indicate products were not initially intended for sale to a processor.

ADVERTISING

Most edible specialty crop growers use some form of advertising, with word of mouth and social media being the most common.

Table 13 shows the percentage of specialty food crop growers who used each advertising method over time. Word of mouth was the most common in 2023, selected by 56 percent of respondents, although one might argue this is not actually a form of advertising, and this may have impacted the responses. Thirty-two percent of 2023 respondents used Facebook or other social media outlets.

Not surprisingly, the use of newspapers, brochures, radio, television, and direct mail have declined with time, while online advertising, social media, and e-mail have increased in use. Interestingly, while business websites became more common in 2015, their use decreased slightly in 2023. This could be because businesses have found social media to be more effective or more user friendly than websites.
Approximately a third of growers didn't use any form of advertising in 2023. Some wrote in the comments that they sell wholesale or through an auction. This brings to light that advertising is only needed by growers who sell directly to consumers.

Table 13: Advertising methods used by edible specialty crop growers

	2000	2015	2023
Word of mouth*	-	23%	56%
Facebook or other social media outlet*	-	23%	32%
None*	-	38%	29%
Point of sale signage*	-	28%	17%
Product labeling*	-	11%	12%
Business website	6%	11%	8%
Newspaper/Magazine	40%	15%	5%
Brochures	11%	7%	4%
Other**	12%	13%	4%
Radio	13%	6%	3%
Email	-	1%	1%
Television	5%	1%	1%
Direct mail	6%	3%	1%
Internet***	6%	-	-

**These advertising methods were added to the survey in 2015.*
***Other includes repeat customers, telephone, roadside signs, events, and non-specified.*
****Internet was included in 2000, but not in 2015 nor 2023.*

PARTICIPATION IN FOOD ACCESS PROGRAMS

Most edible specialty crop farmers do not participate in any food access program, but among those who do, donating food to food banks, pantries, or other community entities is the most common way to do so.

Figure 19 shows the majority of specialty crop farmers do not participate in any programs designed to increase food access for populations that may otherwise have difficulty accessing fresh fruit, vegetables, nuts, and honey. Reasons for not participating could be that the farm does not qualify to participate in a program or that the farm scale is too small to warrant the time spent enrolling in such programs.

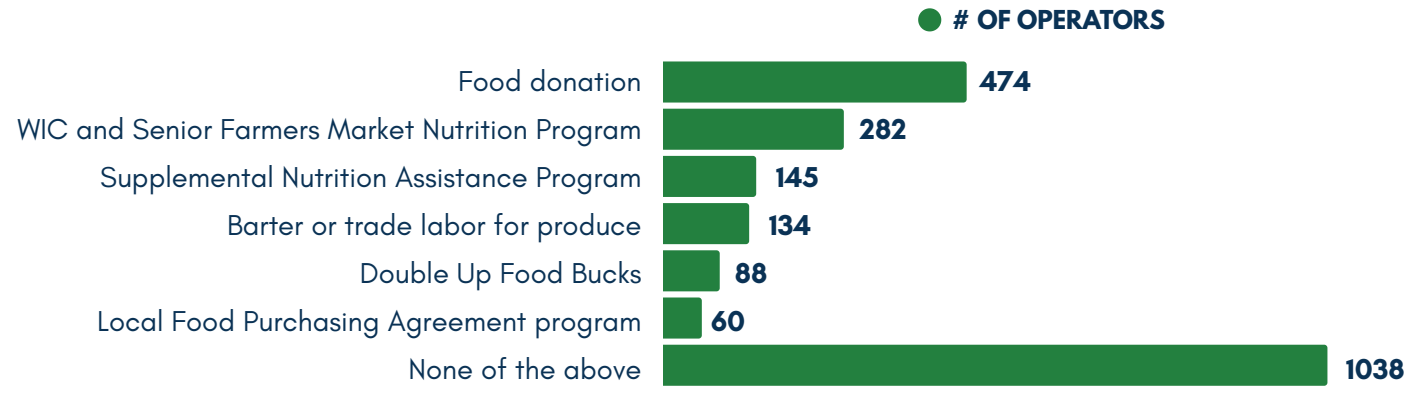
However, that is not to say that participating in a program is the only way to contribute to community food security. The survey asked about donating to food pantries and food banks as well as allowing low-income people to barter or trade labor for produce. These are actions that a farmer can take outside of any program. In fact, of those who do something to increase access to fresh fruits and vegetables, donating to food banks or food pantries is the most common action, with 474 respondents indicating they do this.

The most common program to participate in was the Farmers Market Nutrition Program, with 282 respondents indicating they participate. In this program, participants in Women, Infants, and Children (WIC) and seniors receive $5 vouchers, which can be used to purchase locally-grown fresh fruits and vegetables at participating farmers markets and farm stands. Seniors can also use their checks to purchase honey. (WIC participants cannot purchase honey, because it is recommended that honey not be fed to babies under one year of age. Honey can contain spores of Clostridium botulinum, bacteria which can cause botulism in infants.)

Several (145) respondents also indicated they accept Supplemental Nutrition Assistance Program (SNAP), also known as food stamps as payment. SNAP can be used to purchase any type of food from any approved vendor, such as grocery stores, supermarkets, and convenience stores. The Iowa Department of Health and Human Services (Iowa HHS) operates a program through which farmers markets and qualifying farm stands can obtain a wireless Electronic Benefits Transfer (EBT) machine, which can be used to accept SNAP. At the time of this writing, 164 locations in the state were participating in the program (Iowa Health and Human Services, 2025).

A few respondents indicated they participated in the Local Food for Schools or Local Food Purchasing Agreement Program. These programs provided funds to schools and emergency food access points to purchase locally produced fruits, vegetables, meat, and dairy. The Iowa programs were designed to prioritize purchasing from socially disadvantaged farmers, including farmers who identified as immigrant or refugee, LGBTQIA+, persons of color, veterans, women, and beginning farmers. The programs were federally funded for three years between 2022 and 2025, with Iowa receiving $7.8 million. An executive order in 2024 expanded the program to $11.3 million for the state of Iowa over the course of three years (from 2025 to 2028) to also include childcare centers (USDA Press, 2024). However, the executive order was rescinded in March 2025 (Eller, 2025). Therefore, by the time of this publication those programs had ended.

Figure 19: Food assistance program participation among edible specialty crop growers



ECONOMIC IMPACT OF EDIBLE SPECIALTY CROP PRODUCTION

Economic impact analysis was completed for edible horticulture production using two different sets of data. These were the 2022 USDA Census of Agriculture (COA) and the 2023 Iowa Commercial Horticulture Survey for Food Crops (Hort Survey).

DATA SOURCES

The 2023 Iowa Commercial Horticulture Survey for Food Crops along with published reports from the 2022 Census of Agriculture were used to calculate the economic impact of the edible horticulture crop industry in Iowa.

Published reports from the 2022 Census of Agriculture were used to calculate 2022 sales of edible specialty crops. The data collected by the COA is reviewed for consistency and completeness and for missing data, imputation methods are used to account for non-responses. Due to these methods, the COA is considered to be a comprehensive source of agricultural data. This data is summarized at the national level but is also available by state.

The 2023 Iowa Commercial Horticulture Survey for Food Crops was used to collect data about sales of edible specialty crops.

RESULTS FROM THE 2023 IOWA HORTICULTURE SURVEY

In 2023, farms reported spending $5.4 million on labor, supporting 150.1 farm worker equivalents.

Survey respondents were questioned about how many acres they had in horticulture production in 2023. Non-zero acre values were reported by 1,485 weighted respondents (765 unweighted), similar to the 794 unweighted respondents from 2015. Excluding those reporting zero acres, average acres per respondent were 7.8, which was consistent with the results from 2015, when the average reported acreage was also 7.8. Among those indicating land in production, 1,475 reported gross sales totaling $41.95 million. On average then, all Iowa farms (vegetables and melons, plus fruit, berry and nut) averaged sales of $28,441. This compares to the average of $25,773 reported in the 2015 survey.

As for labor, there were only 179 vegetable and melon operations reporting labor costs in 2023, and these employees were paid a total of $2.41 million during the year. This is in comparison to the 635 vegetable farms reporting labor costs of $1.56 million in 2015.

For fruit, berry, and nut growers there were an additional 172 farms who reported paying for outside help in 2023, and these workers grossed $2.99 million. In 2015, 624 growers paid fruit, berry, and nut employees $636,000.

In total labor costs were $5.40 million for 2023, more than double the $2.196 million from 2015. According to the Bureau of Labor Statistics, in 2024, the median national farm worker wage was $35,980. Dividing $5.40 million by $35,980, the result is 150.1 farm worker equivalents in the state of Iowa in 2023.

DATA FROM 2022 CENSUS OF AGRICULTURE

2022 COA data showed Iowa edible horticulture crop farms had nearly $80 million in sales.

The 2022 COA shows that Iowa's horticulture producers reported gross sales of $79,069,194 in 2022[1]. Responses from the 2022 COA can include data from more than one category. For example, respondents can choose to report data in any of these categories:

- Vegetables, potatoes, and melons
- Fruits and nuts
- Berries
- Maple syrup
- Honey
- Greenhouse vegetables and fresh cut herbs
- Mushrooms
- Greenhouse fruits and berries

Since the respondents can choose to report data into several categories, we cannot determine the number of unique responses. In total, however, we know that Iowa farmers reported data in the various sales categories a total of 3,421 times. There were 1,073 reporting data for vegetables, potatoes, and melons, with sales of $25.1 million in 2022, shown in Table 8 in the previous section. These Iowa growers averaged $23.4k in sales. Greenhouse production of vegetables and herbs are classified separately and had total sales of more than $20.7 million from just 216 producers for an average of $96k. There were 490 reporting in the berries category and these had $14.1 million total revenue. This was an average of $28.8k per farm. Those selling fruits and nuts had sales of $12.8 million and an average of $17.5k for 732 farms.

The remaining categories with somewhat lesser sales volume were honey with $5.5 million, maple syrup and mushrooms with just more than $0.4 million each, and greenhouse fruits and berries with $45k.

By way of comparison, according to the national COA there were sales in excess of $34 billion for fruits, nuts, and berries and $28 billion for vegetables, potatoes, and melons in 2022. The national average for fruit, nut, and berry farms came to $308,368 and the vegetable, potato, and melon farms reported an average of $400,527.

CALCULATING ECONOMIC IMPACT

In 2023, $41 million in edible horticulture crop sales supported $66.5 million in statewide economic output and $42.4 million in value-added, of which $29.9 million was labor income paid to 367 jobholders.

To determine economic impact of the industry in Iowa, we used an input-output (I-O) software model to impute the results (see "Understanding Economic Modeling" on page 33 of this report for a more detailed description). In its simplest form, this software attributes values to other economic variables. For example, a certain percentage of employee wages are assumed to be spent within a certain geographic area, thus increasing economic activity in that vicinity.

[1] The total sales of edible horticultural crops measured in 2023 was considerably lower than what was measured by the Census of Agriculture in 2022. There was considerable discussion about this fact by members of the horticultural survey planning team. The team concluded that sales decreased in 2023 from a combination of a switch away from pandemic-style shopping coupled with weather events that hit large parts of the state throughout the growing season (frost, drought, and hail). There was also broad consensus that the 2023 sales figure was an undercount. The team noted that not all those who took the survey shared sales values. Because they did not share sufficient answers to other questions to allow researchers to impute sales values, these missing figures were not imputed for all respondents. The result was lower sales figures than had all participants completed the question or if there had been sufficient data from all respondents to impute a value for their sales.

In this case we have two separate sources of data to analyze. We will start with the responses from the Iowa Commercial Horticulture Survey for Food Crops. In this survey, respondents are asked for sales of fruits, vegetables, berries, nuts, honey, maple syrup, herbs, mushrooms, pumpkins, and ornamental gourds. While there are minor differences, this list is similar to that used for data gathered for the National COA.

These survey results were used to estimate the economic contribution of these horticulture products on the Iowa economy. The estimates are made with the input-output models described in this document. The models are coupled with estimates of household-level demands for goods and services in light of the availability of goods and services locally. They allow us to project what happens if industrial output, government spending, or household consumption levels change.

As shown in Table 14, total horticulture sales of $41.9 million were generated by 226.0 jobholders who earned a total of $22.1 million in labor income. Those businesses required $8.8 million in inputs (labor and value-added), which in turn supported 45.5 jobs earning $2.9 million in labor income. When the direct and indirect jobholders then spend their income, they induce $15.8 million in additional output. This then supports 95.5 jobs and $4.9 million in labor income. In total, the survey respondents supported $66.5 million in statewide output and $42.4 million in value-added, of which $29.9 million was labor income paid to 367 jobholders.

Table 14: 2023 edible commercial products economic values for Iowa Horticulture Survey Respondents

	JOBS	LABOR INCOME	VALUE-ADDED	OUTPUT
Direct	226.0	$22,135,717	$27,838,506	$41,950,000
Indirect	45.5	$2,909,525	$4,951,961	$8,778,052
Induced	95.5	$4,881,738	$9,567,509	$15,757,736
Total	367.0	$29,926,980	$42,357,976	$66,485,788

In 2022, total sales of $79.1 million supported $130.2 million in statewide output and $56.1 million in value-added, which included labor income of $31.7 million in support of 514.7 jobholders.

When considering the data reported from the 2022 COA, we find, in Table 15, total sales of $79.1 million were generated by 252.2 jobholders who amassed a total of $17.4 million in labor income. These farms required inputs of $33.0 million, supporting 154.6 jobs and $9.0 million in labor income. When the direct and indirect jobholders use the labor income to pay for household expenses, they induce $18.2 million in additional output, they support 107.9 jobs and $5.4 million in labor income. In total, these farms supported $130.2 million in statewide output and $56.1 million in value-added, which included labor income of $31.7 million in support of 514.7 jobholders.

Table 15: 2022 Edible Horticulture Products Economic Values for Iowa Census of Agriculture

	JOBS	LABOR INCOME	VALUE-ADDED	OUTPUT
Direct	226.0	$22,135,717	$27,838,506	$41,950,000
Indirect	45.5	$2,909,525	$4,951,961	$8,778,052
Induced	95.5	$4,881,738	$9,567,509	$15,757,736
Total	367.0	$29,926,980	$42,357,976	$66,485,788

We can also evaluate the benefit of this agricultural production by considering the multipliers implicit in Tables 14 and 15. Below we have Table 16, which shows the multipliers for the Iowa Horticulture Survey respondents (Table 14). This is followed by Table 17 and the multipliers for the Ag Census.

Table 16: Edible Horticulture Crops Multipliers for Iowa Horticulture Survey Respondents

	TOTAL MULTIPLIER	MULTIPLIER PER MILLION DOLLARS IN DIRECT SALES
Outputs	1.58	1,584,882
Value-added	1.52	1,009,725
Labor income	1.35	713,396
Jobs	1.62	9

Table 17: Edible Horticulture Crops Multipliers for Iowa Census of Agriculture

	TOTAL MULTIPLIER	MULTIPLIER PER MILLION DOLLARS IN DIRECT SALES
Outputs	1.65	1,646,843
Value-added	1.93	709,835
Labor income	1.83	400,668
Jobs	2.04	7

UNDERSTANDING ECONOMIC MODELING

Several important pieces of data from an I-O analysis are reported in Tables 16 and 17. Direct values are those that describe the industry we are studying. The direct data for our analysis appear in the first row of Table 16. They represent the activity that occurs on the farm. Indirect values are a measure of the value of linkages that the direct firm has with the local economy, such as fuel providers, implement dealers, farm accountants, etc., to support the operation of that farm. Farmers require inputs and services, so their operations indirectly influence the local economy since inputs that can be purchased locally tend to be purchased locally. These data are in the second row of Table 16. The last piece of data reported refers to induced values. Induced values, sometimes called household values, accrue in a region when workers in the direct (the farms) and indirect (the suppliers/service providers) industries spend their earnings locally. When workers spend their paychecks, they spur an additional round of economic transactions as household goods and services are provided (row three of the table). When we sum all of these values together, we get a total accounting of transactions that are potentially attributable to the industry that we are measuring (the last row).

I-O analysis also provides several measures of economic activity. The first is industrial output. Industrial output normally refers to the current value of gross production of the firm that we are assessing. Here we are using gross sales as the measure of output. The next value is value-added. Value-added is composed of all employee compensation as measured by labor income, to which are added normal returns to sole proprietors, returns to investors (dividends and rents), and indirect tax payments to governments (sales, use, property, and excise taxes). Value-added is the same thing as regional Gross Domestic Product (GDP), the preferred measure of the size of economic activity in a jurisdiction. The third measure is labor income, which is composed of the wages, salaries, and the value of normal benefits that accrue to workers in the industry that we are measuring. It also includes returns to management for sole proprietors. When assessing the basic economic importance of an industrial activity to a region, it is generally preferable to pay particular attention to the value of labor income. Labor income, earned and (most likely) spent locally, is the portion of value-added that communities are best able to capture. The last measure is jobs. The modeling system counts the annualized value of jobs in industries, both full-time and part-time, not the number of full-time equivalences. As many people have more than one job, there are always more jobs in an economy than persons employed.

For every dollar of horticulture sales, farmers support roughly an additional $0.60 in output in the rest of the Iowa economy in 2022 and 2023.

The Output (or sales) multiplier of 1.58 in Table 16 and 1.65 in Table 17 means that for every dollar of horticulture sales, farmers support roughly an additional $0.60 in output in the rest of the Iowa economy. A value-added multiplier of 1.52 for Hort Survey respondents means that for every dollar of value-added generated by farming, an additional $0.52 in value-added is generated in Iowa. For those participating in the COA that figure was $0.93. The labor income multipliers of 1.35 and 1.83 indicate that every dollar of labor income earned from farming (by the farmer and the farmers' help) supports $0.35 (respondents from Hort Survey) or $0.83 (COA) in labor income in the remainder of Iowa's economy. Finally, from the Hort Survey respondents, the jobs multiplier of 1.62 means that for every farmer and farm-labor job producing edible horticultural crops, another 0.62 jobs are supported elsewhere. For the COA the multiplier of 2.04 means these farmers are supporting another 1.04 jobs.

Total multipliers on a per million-dollar basis (see Tables 16 & 17) are also useful for understanding the contribution of this sector to the Iowa economy. For Hort Survey respondents, each million dollars in farmer sales supports $1.58 million total sales in Iowa's economy, $1.0 million in value-added, $713,396 in labor income, and nine jobs. For the COA, those figures demonstrate that a million dollars in horticulture sales supports $1.65 million total sales in Iowa's economy, $709,835 in value-added, $400,668 in labor income, and seven jobs.

Finally, the statewide values in Table 14 or Table 15 can be used to project the economic impact of various developments in the short run. Using Table 15, for example, one can say that if local food production (or sales after adjusting for inflation) in Iowa grew by five percent by some future date, we can project that this would support an additional 514.7 x 5% = 25.7 jobs and $31.68 million x 5% = $1.58 million in labor income. This logic could be applied to the other values in Tables 14 and 15.

PRODUCTION PRACTICES

CROPS

On average, edible specialty crop farms produced 3.8 distinct specialty crops. Those who market at farmers markets or through Community Supported Agriculture tended to grow more crops than average.

On average, edible specialty crop growers produced 3.8 distinct specialty crops (honey and maple syrup were also included as distinct crops). The median number of crops grown was one, meaning half of respondents produce only one type of specialty crop, and the other half produce one or more.

Certain specialty crops were more likely than others to be produced alone than others. Honey was the most common crop to be produced alone, with just over half of those producing honey not producing any other type of edible specialty crop. Other crops likely to be growing as the sole crop included apples, aronia berries, chestnuts, maple syrup, pumpkins, strawberries, sweet corn, and tomatoes.

On average, those who produced vegetables produced 5.6 types of vegetables. This is not surprising, given that in small-scale vegetable production growing many types of vegetables on the same piece of land is common. In contrast, those who produce fruits, nuts, and berries produced 1.8 species, on average.

The number of crops produced also varied with the type of market a person sold at. On average, those selling in a farmers market produced 6.4 crops, which is significantly higher than those who did not sell at farmers markets (2.0). This difference is statistically significant ($p<0.001$). In 2015 it was found that farmers market vendors produced 10 crops on average, compared with three crops, on average, of other edible specialty crop farms. The same was true of those selling through Community Supported Agriculture compared with those not selling via a CSA (9.6 crops, on average, compared with 3.2 crops, respectively). These results are similar to what was found in 2015, during which CSA farmers produced, on average, 13 distinct crops, compared with five distinct crops of non-CSA farms.

The top five edible specialty crops in 2022, in terms of the number of people producing them, were honey, peppers, apples, tomatoes, and lettuce.

The total number of farms producing every crop is published every five years by the COA. Therefore, the 2023 Hort Survey was not designed to collect this information, although previous iterations of the survey were. Figure 20 shows the top five edible specialty crops in 2022, including honey, peppers, apples, tomatoes (grown outdoors; greenhouse tomatoes are in their own category), and lettuce and how the number of farms producing them has changed over time. This does not mean that honey was the top selling specialty crop, but that it was the product produced by the highest number of producers.

Figure 20: The number of operations producing the top five edible specialty crops by year.

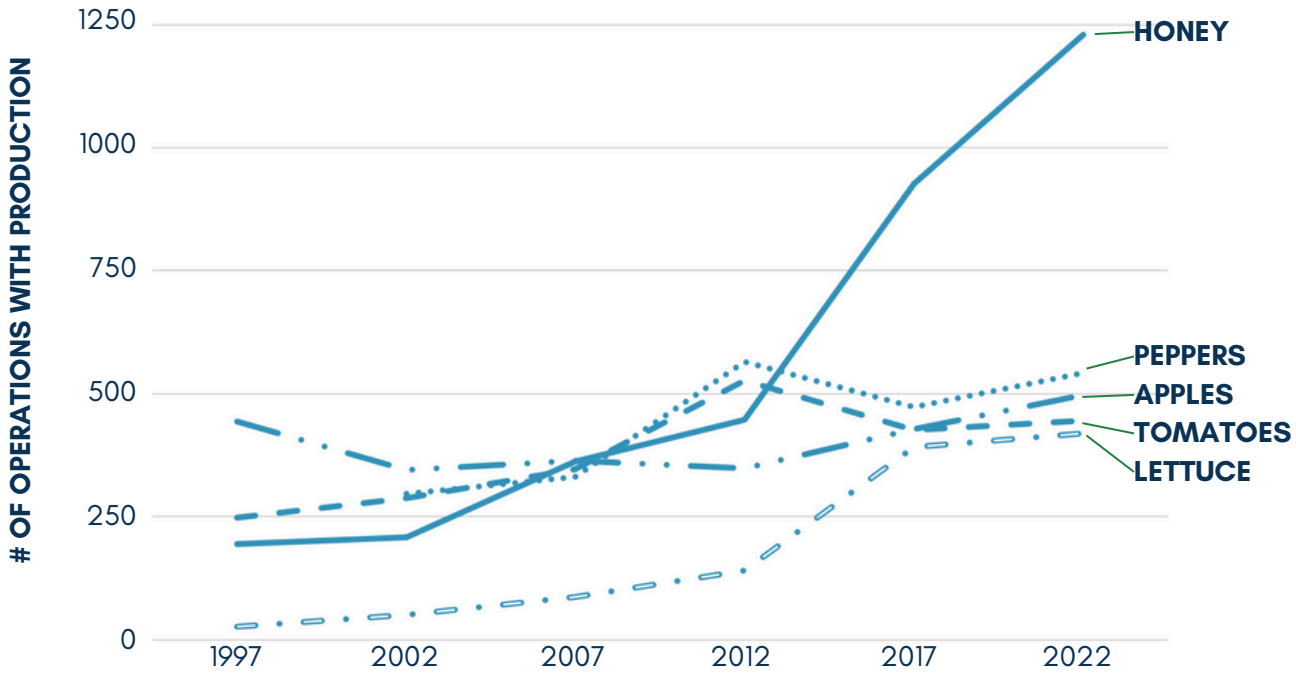


Table A in Appendix B shows the total number of farms growing 59 unique edible specialty crops of interest from 1997 to 2022. The table also shows the percent change in the number of farms producing each crop from 1997 (or the earliest year for which data on that crop is available) to 2022. All but six crops saw an increase in the number of farms producing them. (Aronia berries, black berries, boysenberries, raspberries, strawberries, and sweet corn were the crops that saw a decrease in the number of producers growing them.)

ARONIA BERRY PRODUCTION AND MARKETING

Aronia berry production has decreased not due to production concerns, but due to difficulty marketing them.

Aronia berries are one of the few edible specialty crops produced in Iowa that have decreased in the number of farms producing them. According to the Census of Agriculture, 250 farms in Iowa produced aronia berries in 2022, a decrease from 280 in 2017, shown in Figure 21. The number of acres in Iowa has held steady from 2017 to 2022, with 1,023 acres and 1,196 acres, respectively, shown in Figure 22. Dean DuVal Ph.D., a member of the American Aronia Berry Association board of directors and an aronia berry grower on five acres in western Iowa, shared thoughts on why aronia berries have an opposite trend than most other crops (D. Duval, personal communication, April 11, 2025).

Dean DuVal, aronia berry grower and member of the American Aronia Berry Association board of directors.

He explained there was an explosion in the number of farms that planted the crop in the 2010s due to several factors. Native to the eastern U.S., aronia plants are relatively easy to grow and maintain. The berries are relatively easy to produce and susceptible to few pests or diseases. Reports of high profits among pioneer aronia berry growers encouraged others to follow suit. Initially, a few aronia berry producers were able to sell their product for $10 per pound. New growers were lured by potential earnings, but the $10 per-pound days were short lived. According to DuVal, at its peak, the American Aronia Berry Association (formerly the Midwest Aronia Berry Association) had about 400 members; today it has around 25.

Marketing and processing pinch points have hampered the growth of Aronia sales.

Marketing a relatively unknown product requires a message that resonates with the target audience, something that has not yet been developed for aronia berries. DuVal estimates that only 2 to 5 percent of American consumers have heard of this crop. And while extensive research has shown positive health benefits to consuming aronia berries and processed aronia products, aronia berries are astringent and not very desirable for fresh consumption. They are usually processed into something else, such as jam or juice.

This leads to the need for processing, and although Iowa is the largest producer of aronia berries in the nation (about half of all U.S.-grown aronia berry acres are in Iowa, shown in Figure 22), opportunities for aronia berry processing are limited in the state. Two large scale processors which handled aronia berries have closed.

Dr. DuVal reports that he and others continue to work to create a market for aronia berries, and they have identified aronia powder and juice as the aronia berry products with the greatest potential for sales, especially to food companies. A processing plant in Iowa, the center of aronia production, would be critical for creating a viable supply of these market-ready products.

“If you have a new-to-the-world product, you need to drive awareness, which will drive demand, and at the same time, be able to deliver quality, end-products that consumers will buy,” reports DuVal. At this point, aronia berries do not have any of these critical pieces of the puzzle in place, but Dr. DuVal hopes to make headway before more growers give up and stop growing the berries.

Figure 21: Number of aronia berry farms in Iowa and the nation.

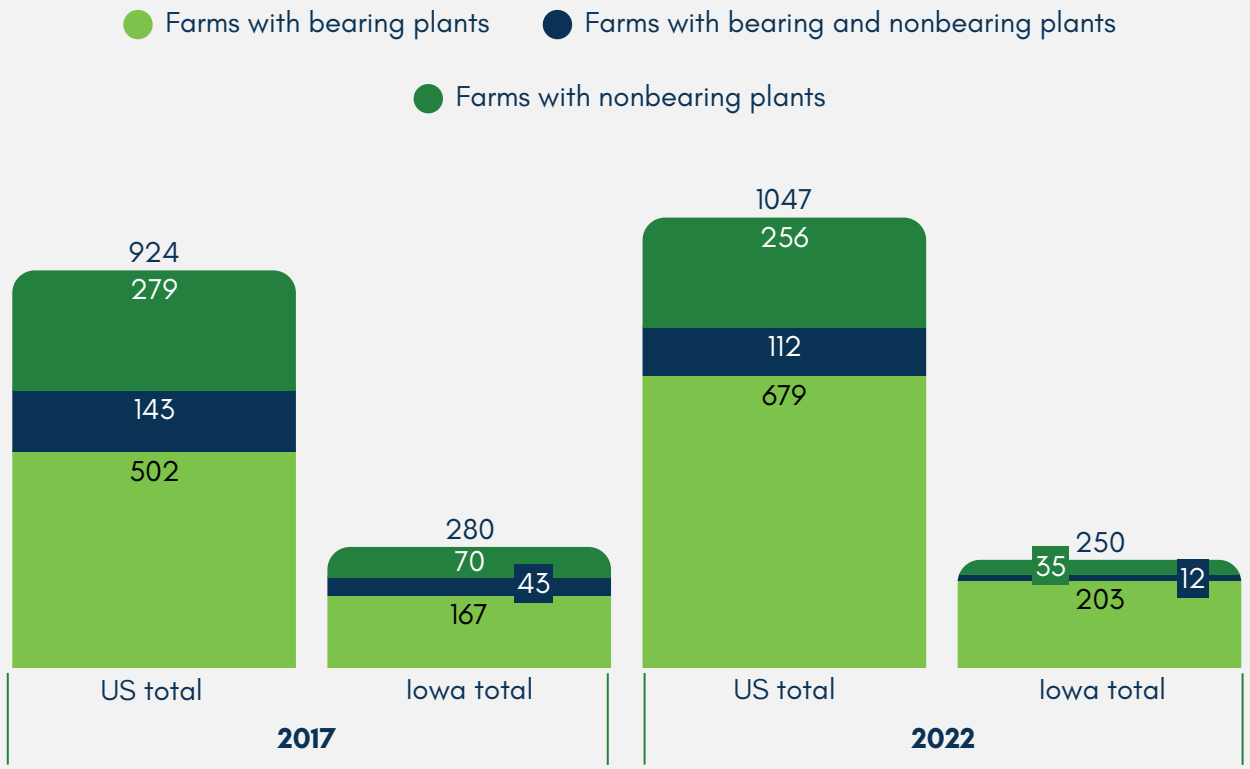
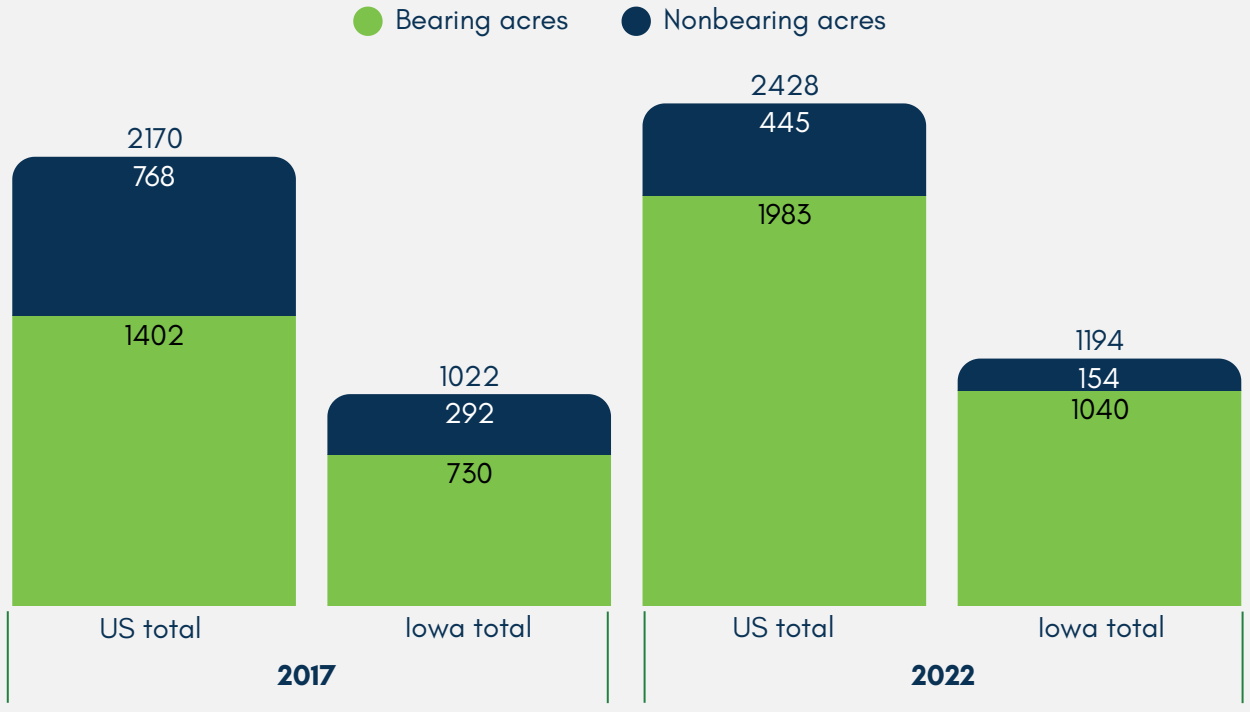


Figure 22: Aronia berry acreage in Iowa and the nation.



HONEY

There was a marked increase in the number of farms reporting producing honey from 1997 to 2022.

According to COA data, the number of operations that reported producing honey in Iowa has substantially increased, especially from 2012 to 2022, making it the most common edible specialty crop being produced in Iowa. Yet, Table 18 shows that while the number of operations producing honey has increased, many did not have sales of honey. Honey sales, when adjusted for inflation, have remained flat (although sales data is only available from the three most recent COA publications). Total honey production in pounds has decreased slightly from 1997 to 2022, even while the number of operations has steadily grown.[2]

Table 18: Census of Agriculture honey production data from 1997 to 2022.

	1997	2002	2007	2012	2017	2022	% Change from 1997-2022	% Change from 2012-2022
Production in lbs.	2,514,850	2,219,477	2,111,391	2,098,870	1,982,563	2,104,054	-16%	0%
Operations with production	194	208	362	446	926	1,229	534%	176%
Operations with sales	-	-	-	370	614	793	-	114%
% of farms producing with sales	-	-	-	83%	66%	65%	-	
Sales in $	-	-	-	$4,462,000	$3,717,000	$5,485,000	-	23%
Sales in $, adjusted for inflation to Dec. 2022	-	-	-	$5,767,868	$4,474,998	$5,485,000	-	-5%

Somewhat counterintuitively, Andy Joseph, state apiarist at the Iowa Department of Agriculture and Land Stewardship, explains that interest in beekeeping seems to have increased because of greater awareness of colony collapse disorder, a mysterious phenomenon where bees die off in winter. In 2006, beekeepers in Pennsylvania were featured in national news voicing concern that they were seeing rapid die off in bee colonies (Penn State/College Of Agricultural Sciences, 2007). This stimulated research into colony collapse disorder and much media attention.

Andy Joseph, State Apiarist of Iowa (Photo: www.iowahoneyproducers.org)

[2] The state of Iowa does not keep a registry of beekeepers, but one informed estimate places that number between 4,500 and 5,000 (Joseph, Andy; State Apiarist with the Iowa Department of Agriculture & Land Stewardship). As of December 2024, the Iowa Sensitive Crops Directory through the DriftWatchTM registry lists over 19,800 hives and over 3,000 apiaries in the state.

While research still has not determined what is causing colony collapse disorder, it is known that Varroa, a parasitic mite which feeds on and spreads viruses among bees, has made beekeeping difficult. Some colonies collapse because of Varroa, and the mite has led to decreased honey yield. Varroa, along with other causes of colony collapse disorder, has led to winter losses of bee colonies climbing through the years. Today it is common for beekeepers to lose between 22 and 24 percent of their bees every winter (A. Joseph, personal communication, February 18, 2025).

Says Joseph, "The attention on how this is the worst time to keep bees, pulled people into it." As a result, there has been a shift in who keeps bees. When Joseph began as a state apiarist in 2008, the people who attended beekeeper meetings were primarily older, white men. Today, there is more diversity in the beekeeping community, including families, women, people of color, and young people.

In addition to a greater diversity among beekeepers, the scale of beekeeping operations has changed. Beekeepers are generally classified into one of three categories outlined below. However, there is no consensus on how many hives one must have to belong to each classification.

- **Commercial producers** – These beekeepers keep bees as their full-time job. They have at least 500 to 1,000 hives; many have more than 1,000 hives.
- **Sideliners** – Honey sales supplement these beekeepers' incomes, rather than provide their full income. These producers may have anywhere from 50 to 500 or even 1,000 hives.
- **Hobbyists** – These producers usually have fewer than 50 hives. Most of their honey is sold to friends and neighbors, if sold at all.

Most of those who have entered honey production in the last 20 years are sideliners or hobbyists, according to Joseph. Hobbyists usually begin with two hives and may add a few more over time. A hive yields approximately five gallons of honey per year. If a beginning hobbyist sells their honey, the money they make will be about enough to pay for the hobby itself. Purchasing two hives plus the minimal equipment needed to begin beekeeping costs about $1,000. This does not include purchasing any extraction equipment.

The number of commercial honey producers in Iowa has remained steady, with around 20 operations in Iowa, although Joseph is concerned that the number of commercial operations may be decreasing. Most of these large-scale operations are operated by people who are aging. Some are facing challenges in passing their businesses to the next generation. In addition, they face financial barriers to expanding their businesses and are experiencing decreased yields, and thus decreased financial return, due to Varroa and colony collapse disorder. Joseph explains that it takes thousands of hobbyists to replace one commercial operation that closes.

Although the COA data may be incomplete, it reflects the story that shows there has been a great increase in the number of small-scale honey producers. Colony collapse disorder has likely negatively impacted honey yield in the state, but the large increase in the number of beekeepers has helped maintain honey production.

CHESTNUTS

The number of operations with non-bearing chestnuts eclipses the number with bearing chestnuts. Assuming plantings of non-bearing chestnuts are successfully maintained and brought to a bearing age, the number of acres in chestnuts will quadruple in the next few years.

2023 Hort Survey data shows that several respondents did not complete the survey, because they have planted novel specialty crops, which are not yet producing, especially chestnuts. Chestnuts are an attractive crop, because they may require less labor than other specialty crops and can be sold in bulk. They are not susceptible to as many pests or diseases when compared to other specialty crops, so they often need minimal pest management. There are also some newer cultivars which are gaining interest. Census of Agriculture data shows that the number of operations growing chestnuts has increased from around 16 with chestnuts of bearing age in 2007 to 82 in 2022, shown in Figure 23. In 2022, 163 operations had planted chestnuts that are not yet bearing. (Although some operations may have both chestnuts that are bearing and non-bearing, meaning that the number of operations is not mutually exclusive.)

Total acres of bearing age chestnuts increased from 48 acres in 2007 to 209 acres in 2022, shown in Figure 24. The number of non-bearing age acres in 2022 was 662, meaning that chestnut production is on track to increase greatly in the coming years, if these trees come to bearing age. Because chestnuts are a novel crop in Iowa, only time will tell to what degree farms are able to successfully produce and market these new chestnut plantings.

Figure 23: Chestnut farms in Iowa

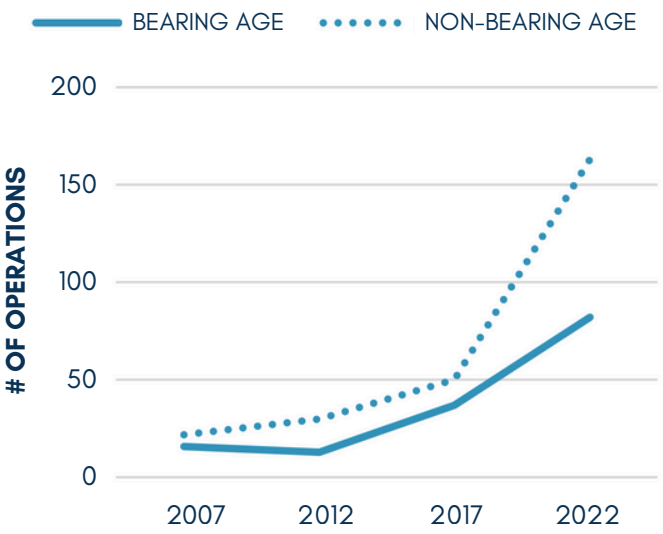
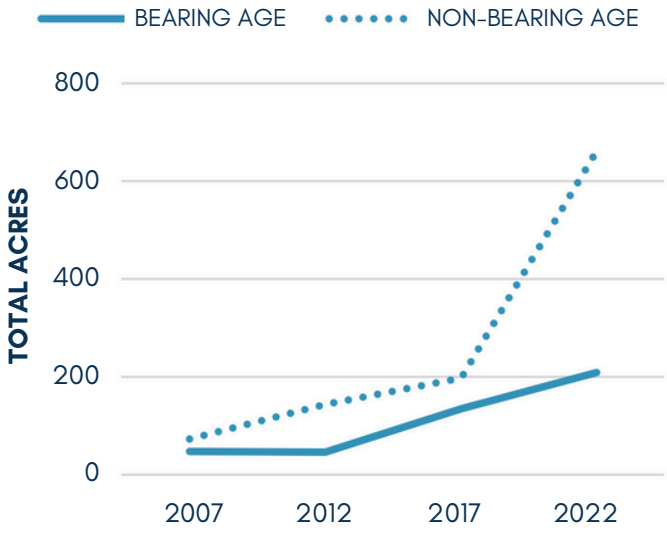


Figure 24: Chestnut acres in Iowa



COVER CROPS

Fruit and vegetable growers are more likely to use cover crops than the general population of Iowa farmers.

In total, 126 of 590 farms (21 percent) classified as a fruit or vegetable farm (based on the COA farm type) indicated they had planted cover crops on the 2022 COA, with 32 percent of all their land planted to a cover crop. In contrast, 10 percent of all Iowa farms planted cover crops, with five percent of all acres planted to cover crops (United States Department of Agriculture , 2024).

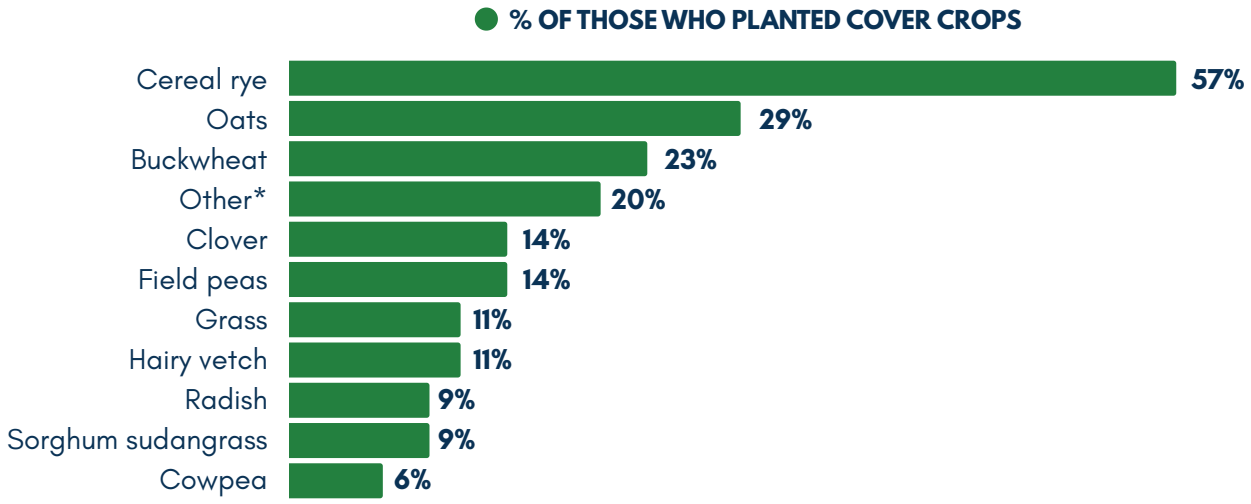
The 2023 Hort Survey showed 370 edible specialty crop growers planted cover crops (this includes all farm types, which is why this number is higher than that reported in the paragraph above).

Cereal rye was the most popular cover crop on edible specialty crop farms.

Figure 25 shows the cover crop species growers planted in 2023. Cereal rye was the most planted cover crop, with over half of respondents who use cover crops planting it. This cover crop is usually planted in the fall to provide ground cover during the winter and early spring. Other popular cover crops included oats and buckwheat. A small number of respondents indicated they planted cowpea. This is a summer cover crop, which is likely seeded June through August, to provide ground cover between a spring and fall vegetable crop.

The "other" category included several cover crops including fescue, kale, mustard, rapeseed, soybeans, turnips, rutabagas, and winter wheat. It also includes several respondents who indicated they are using some sort of mulch. While mulch is not a cover crop, this result shows that growers understand that mulch, like cover crops, is meant to protect the soil and suppress weeds.

Figure 25: Cover crops planted by edible specialty crop producers



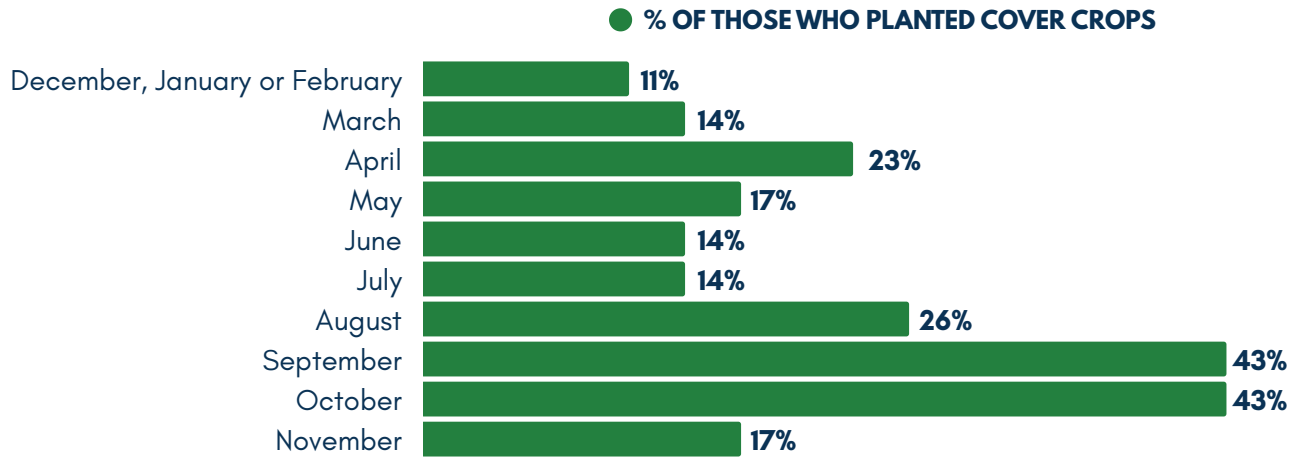
**Other includes fescue, kale, mustard, rapeseed, rutabagas, soybeans, triticale, turnips, and winter wheat.*

Cover crops were most often planted in the fall.

Figure 26 shows the month during which cover crops were established. It appears this question was not worded clearly. The intention was to learn in which month(s) cover crops were planted, meaning the months when the seeds were placed in the ground. However, responses showing cover groups were "established" in January or February, when the ground is frozen, may indicate that the wording was also interpreted to mean which months was a cover crop growing or covering the ground, even during dormancy.

Despite the potentially unclear wording of the question, Figure 26 does show the most common months when cover crops were "established" were in the fall, followed by spring (April and May). A few established a cover crop in the summer (June and July). The Iowa State University Extension and Outreach Sustainable Vegetable Production Lab has been encouraging growers to consider using cover crops in the middle of the summer, between a spring and fall crop, to suppress weeds and increase organic matter. These data, along with data showing that cowpea was planted, show growers may be adopting this practice.

Figure 26: Months when cover crops were established



IRRIGATION

Approximately one in three edible specialty crop farms used irrigation. Irrigation was used more often on vegetable farms than fruit farms.

In 2023, 35 percent of edible specialty crop producers indicated they used irrigation. (In comparison, 37 percent of respondents indicated they used irrigation in 2015.) This may seem low, given that Iowa was in drought conditions in 2023. However, irrigation would not be appropriate for those who produce only honey or only maple syrup.

To better understand the use of irrigation, excluding farms which would never use irrigation, the analysis was repeated looking at the use of irrigation by farm type. This analysis showed 60 percent of farms that were classified as a vegetable, melon, potato, or sweet potato farm (meaning those crops were the highest grossing in dollars), indicated they used irrigation, whereas 33 percent of farms classified as fruit, nut, or berry farms did so. Therefore, irrigation use was more common on vegetable farms than fruit farms.

Drip irrigation was used more often than overhead irrigation.

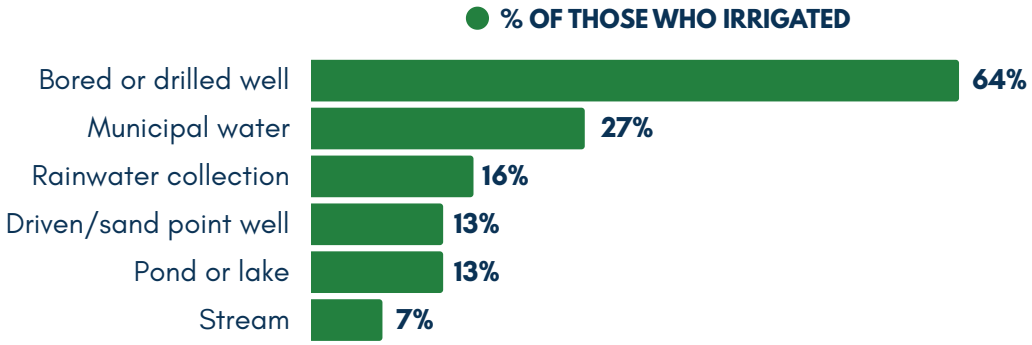
Among those who indicated they used irrigation, drip irrigation was used more often than overhead irrigation (73 percent of respondents versus 45 percent; some respondents used both). Drip irrigation uses water more efficiently by placing the water directly onto the soil near each plant. Drip irrigation is often used with row covers, which suppress weeds and reduce evaporation, thus preventing loss of water.

The most common sources of irrigation water are bored/drilled wells and municipal water, which are generally considered to be the safest water sources.

The source of water used for irrigation is important for food safety, especially if the water comes into contact with the edible portion of the plant. Contact between water and fecal matter increases the risk of contamination by human pathogens, which can be transferred to edible crops. Municipal water is generally considered to be the safest, because it is treated to remove pathogens. Groundwater is also considered to be relatively safe, although wells can become contaminated, especially if the wellhead is in a pit, as is common in older wells, if the well is deteriorating, or if fecal matter or contaminated water is near the well. There is also a difference between types of wells. Driven or sand point wells typically rely on a shallow water table and are usually shallower than bored or drilled wells. Sandpoint wells are generally easier and less costly to install, but may be more likely to go dry during times of drought and more likely to access water contaminated with nitrates, bacteria, or other pollutants. Surface water, such as ponds, lakes, and rivers are at the greatest risk of contamination with fecal matter, whether that be from humans, livestock, or wildlife. Finally, rainwater collection is considered high risk as well. Although rain does not contain pathogens when it falls, it is difficult to keep rainwater collection systems sanitary. For example, fecal matter from birds could easily be on the roof of a building, and rainwater is generally collected from roofs.

Figure 27 shows most (64 percent) respondents who irrigate get their water from a bored or drilled well. On most farms this is the safest water source available, given that municipal water is often not available in rural places where many farms are located. The next most common water source was municipal water (used by 27 percent of those who irrigate), which is the lowest risk water source of all. Therefore, specialty crop farms are most often using the safest types of water sources for irrigation. Rainwater collection was used by 16 percent of respondents. An equal number of respondents used a pond or lake or a driven/sand point well for water. Streams were the least commonly used source of irrigation water.

Figure 27: Source of irrigation water



Note: Respondents could select more than one irrigation source.

HIGH TUNNEL AND GREENHOUSE PRODUCTION

Nearly one in five specialty crop growers grow something in a greenhouse or high tunnel.

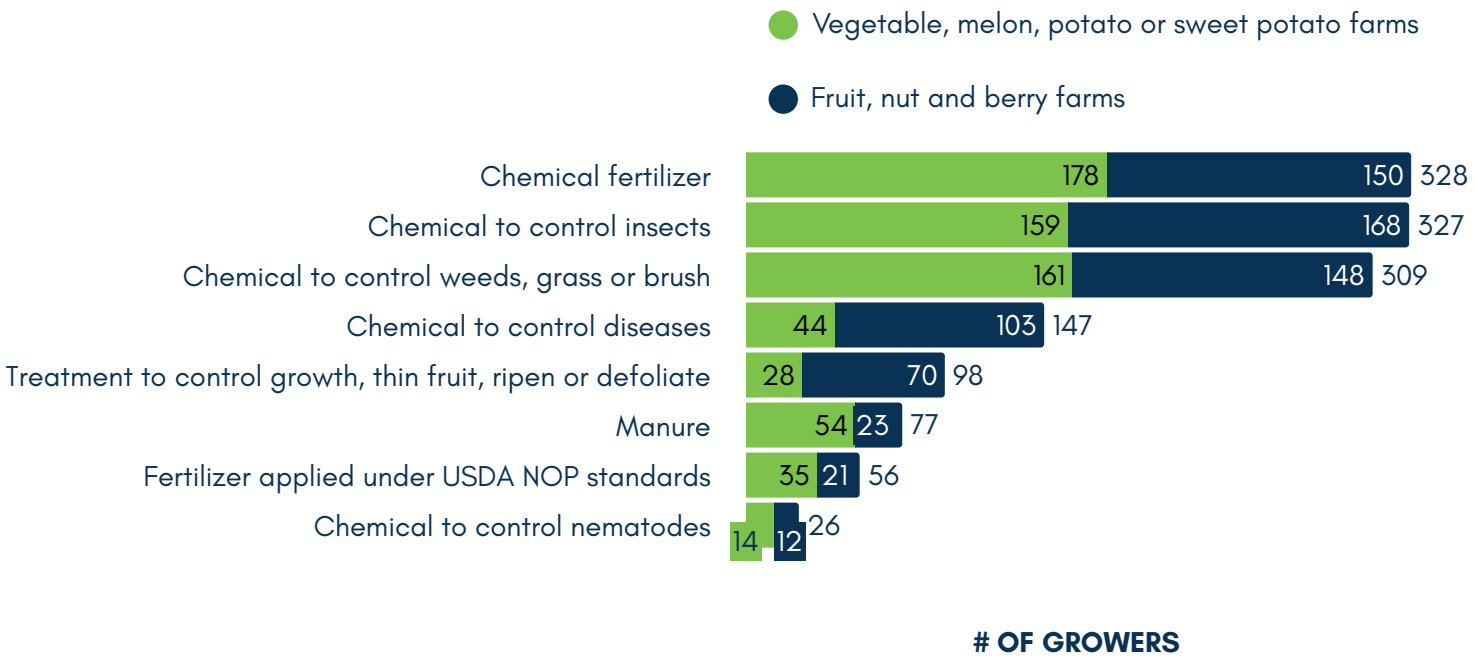
In total, 19 percent of specialty crop growers who responded to our survey reported growing something under protection, such as in a greenhouse or high tunnel. However, because this question was derived from the COA, it includes any crop that might be grown in a high tunnel or greenhouse, not just edible specialty crops. The 2022 COA showed that tomatoes were the most common edible specialty crop grown in a high tunnel or greenhouse in Iowa, with 160 producers. Unfortunately, due to an error, the variable that would allow the analyst to calculate how many greenhouse tomato growers responded to the 2023 Hort Survey was not requested.

CHEMICAL AND MANURE USE

COA data on the use of chemicals and manure on farms showed that edible specialty crop farms primarily used chemicals for nutrient management, insect management, and weed suppression.

Most (430 of 569) fruit and vegetable farms used at least one product to control pests or diseases or manage fertility. Figure 28 shows the frequency at which fruit and vegetable farms used various products, including fertilizers, manure, pesticides, and chemical thinners. Fruit and vegetable farms primarily used chemicals for nutrient management, insect control, and weed suppression. Commercial fertilizer was a more popular fertilizer on both fruit and vegetable farms than manure.

Figure 28: Use of chemicals and manure on fruit and vegetable farms



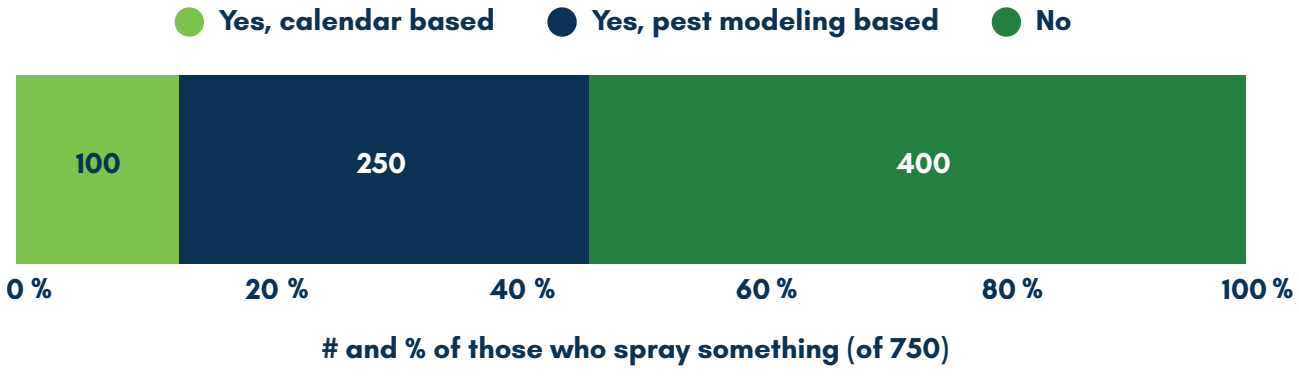
SPRAY SCHEDULES

Just under half of growers who sprayed something had implemented a spray schedule.

The 2023 Hort Survey asked respondents if they implemented a pesticide spray schedule in 2023. This question gives insight into how respondents make the decision of when to spray. First, only respondents who indicated on the 2022 COA that they spray something were selected for this analysis. That means that some respondents who likely did spray something were excluded from the analysis if they did not complete the 2022 COA.

It was found that just under half (47 percent) of those who sprayed something implemented a pesticide spray schedule, shown in Figure 29. Approximately 1 in 3 (33 percent) edible specialty crop growers used integrated pest management, which was indicated in the survey by selecting they used a pest modeling-based spray schedule. Another 13 percent used a calendar-based pesticide spray schedule. These results indicate there may be room for improvement in helping edible specialty crop growers use more sophisticated pest management practices to enable them to better target pests at the optimal time and to reduce waste by spraying only when necessary. Alternatively, the wording of the question, by using the word "schedule" and using the term "pest modeling" in place of the more commonly used term of integrated pest management (IPM) may have caused some people who use integrated pest management or a calendar-based pesticide spray schedule to not see themselves in the question.

Figure 29: Growers' answers to the question "Did you implement a pesticide spray schedule in 2023?"

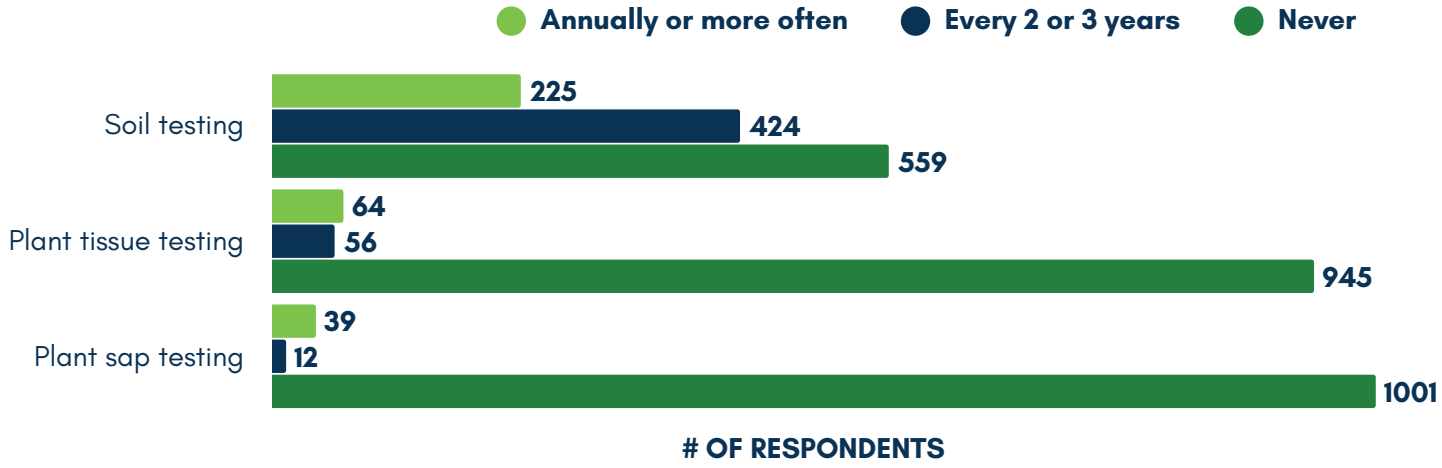


FERTILITY TESTING

Just over half of edible specialty crop growers use soil testing. Plant tissue testing and plant sap testing are used much less often. However, these practices only apply to those who are growing crops, not to those exclusively producing honey.

Growers can use various methods to determine if the crops they are growing are receiving adequate nutrients. Figure 30 shows the frequency with which respondents employed soil testing, plant sap testing, and plant tissue testing. It shows 649 of 1,208 respondents used soil testing, most commonly every two or three years. Plant tissue testing was not commonly used, nor was sap testing, but those who do tended to test annually or more often. Growers use plant tissue testing and sap analysis to evaluate whether plants are acquiring the nutrients they need for optimal production. These tests allow growers to react to nutrient deficiencies and fine tune their fertilizer inputs more quickly than annual soil testing.

Figure 30: Frequency that edible specialty crop growers test for fertility

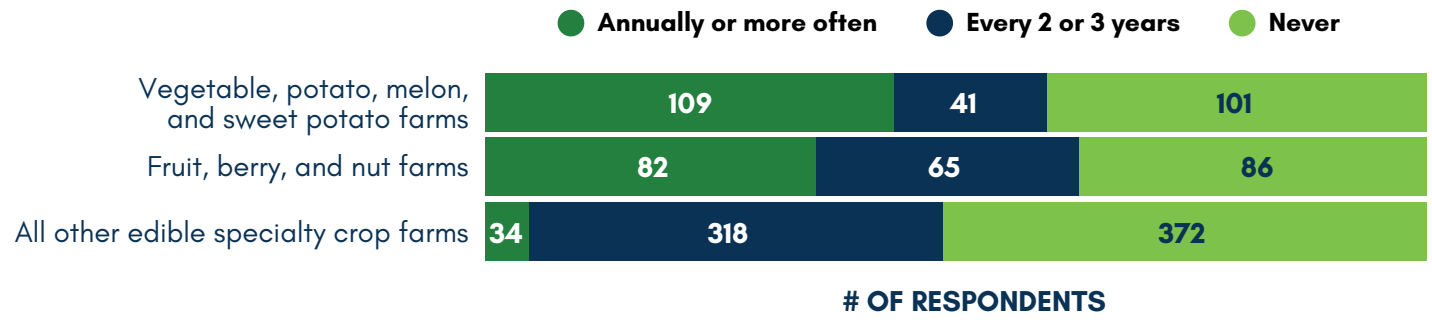


Farms classified as fruit, nut, and berry farms or vegetable farms adopted the use of soil testing more than all other edible specialty crop farms. Vegetable farms tended to test soil more frequently than fruit, nut, and berry farms."

The frequency of using soil testing was also analyzed for fruit, nut, and berry farms and vegetable farms. It showed that both types of farms utilized soil testing at approximately the same rate (approximately 60 percent test soil), although vegetable farms tended to test more frequently than fruit, nut, and berry farms.

All other farm types (i.e. not a fruit or vegetable farm) were less likely to use soil testing, and if they did test soil, they did it less frequently (every two or three years). It is worth noting that these farms could have included honey producers, who would have little need for soil testing.

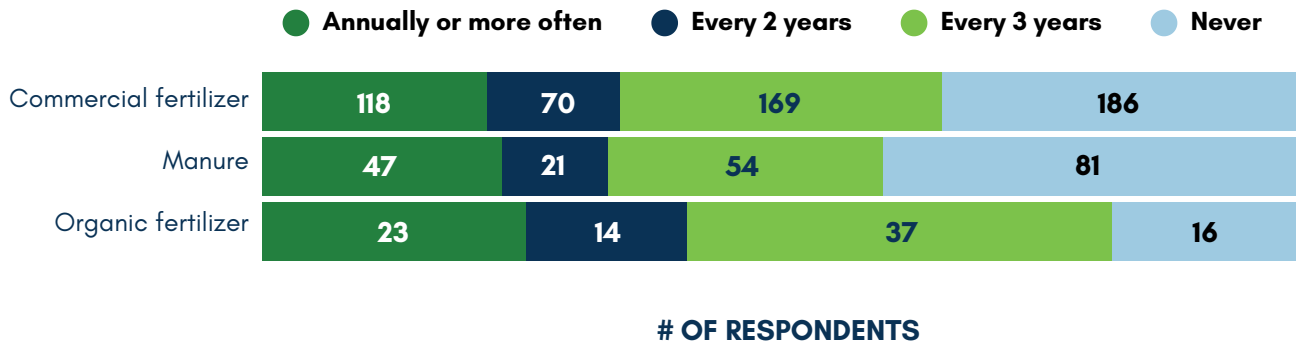
Figure 31: Use of soil testing by farm type



Soil testing was adopted most widely among those who apply organic fertilizers, followed by those applying commercial fertilizers and manure.

Soil testing is used to guide the application of fertilizers to balance the need to have adequate nutrition for plants while avoiding waste and potential environmental contamination by over applying fertilizer. Given the widespread use of chemical fertilizers and common use of manure, one might ask what percentage of those who applied these fertilizers to their soil used soil testing. Two out of three of those who applied commercial fertilizer on their farm used soil testing, shown in Figure 32, which indicates that soil testing is used more commonly among those who apply fertilizer than the general population of growers. Approximately 60 percent of those who applied manure had adopted soil testing. Those who applied organic fertilizer had adopted the practice of soil testing at the highest rate, with approximately 80 percent of those using organic fertilizer having adopted soil testing as a practice.

Figure 32: Adoption of soil testing among those who apply various fertilizer types



ORGANIC PRODUCTION

Only a small proportion of edible specialty crop producers indicated they produced organic products.

Eight percent (100 of 1,300) of edible specialty crop farmers in Iowa indicated they produced organic products. When selecting fruit, vegetable, or greenhouse farms, the percentage is very slightly higher (nine percent).

ON-FARM INFRASTRUCTURE, EQUIPMENT, AND WHOLESALE READINESS

EQUIPMENT AND TECHNOLOGY USE

A surprisingly high number of respondents indicated they used none of the farm technologies listed in the survey.

Somewhat surprisingly, nearly half of respondents (792 of 1,665, 48 percent) indicated they used none of the technologies listed in the survey. Granted, respondents who did not produce fruits, vegetables, berries, nuts, herbs, pumpkins, or ornamental gourds (i.e. those who produced only honey or maple syrup) were instructed to skip this question because it does not apply to them, but some may have completed it and were among those who use none of these technologies. Yet, 202 of 590 (34 percent) growers from farms classified as fruit or vegetables farms indicated they used none of the listed technologies. The fact that so many respondents use no technology could be due to the very small scale of many respondents' farms.

For those who do use technology, small volume sprayers were the most commonly used technology, used by 464 respondents, followed by drip irrigation (332 respondents) and mechanical cultivators (314 respondents). In Table 19, 114 respondents indicated they utilize frost protection. Elsewhere, 80 indicated they used overhead irrigation for frost protection.

The 2023 Hort Survey team was surprised to see that 12 were using aerial drones. Drones could be used for seeding cover crops or for spraying. Although we do not know how these respondents were using aerial drones, it is possible that use of this technology will increase in years to come.

Table 19: Number of farmers reporting use of various technologies

	ALL RESPONDENTS	VEGETABLE, POTATO, MELON, AND SWEET POTATO FARMS	FRUIT, NUT, AND BERRY FARMS
Small volume sprayer	464	97	129
Drip irrigation	332	77	66
Mechanical cultivator	314	83	39
Post-harvest refrigeration	234	58	78
Precision sprayer	184	29	55
Large volume sprayer	179	37	37
Weather station	150	21	47
Post-harvest washer/sorter	138	25	37
Temperature sensor	135	29	33
Flame weeder	122	49	18
Fertilizer injector	119	29	21
Mechanical harvester	118	19	37
Plasticulture	116	31	10
Frost protection	114	31	18
Mechanical transplanter	97	21	12
Finger/rotary weeder	87	17	14
Soil moisture sensor	76	16	27
Pest/disease forecasting	66	14	33
Electrical weeder (aka weed zapper)	29	D	D
Aerial drones	23	D	D
Automatic weeder	16	D	D
None of the above	792	89	113

D – Data suppressed to protect confidentiality.

TRACTORS

Tractor use on edible specialty crop farms was quite high, especially the use of small and mid-size tractors.

Most (1,100 of 1,400 or 79 percent) edible specialty crop farms had at least one tractor. Not surprisingly, the frequency of having a tractor less than 40 horsepower (hp) or between 40 and 99 horsepower was greater than the frequency of having a tractor of 100 horsepower or more, shown in Table 20. These smaller tractors may be more appropriate for fruit and vegetable farms, which may need tractors small enough to fit between rows or under trees. In total, respondents reported having 2,360 tractors. However, because this was a COA variable, this data was missing for some respondents, meaning the total is likely an undercount.

Table 20: Edible horticulture crop farm use of tractors by tractor size

TRACTOR SIZE	% OF FARMS WITH THIS SIZE TRACTOR	MEDIAN # TRACTORS ON FARM	AVERAGE # TRACTORS ON FARM	TOTAL
Less than 40 HP	43%	1	1.56	940
40-99 HP	46%	1	1.44	929
100+ HP	21%	1	1.76	491
All sizes combined	79%	-	-	2,360

PACKING FACILITIES

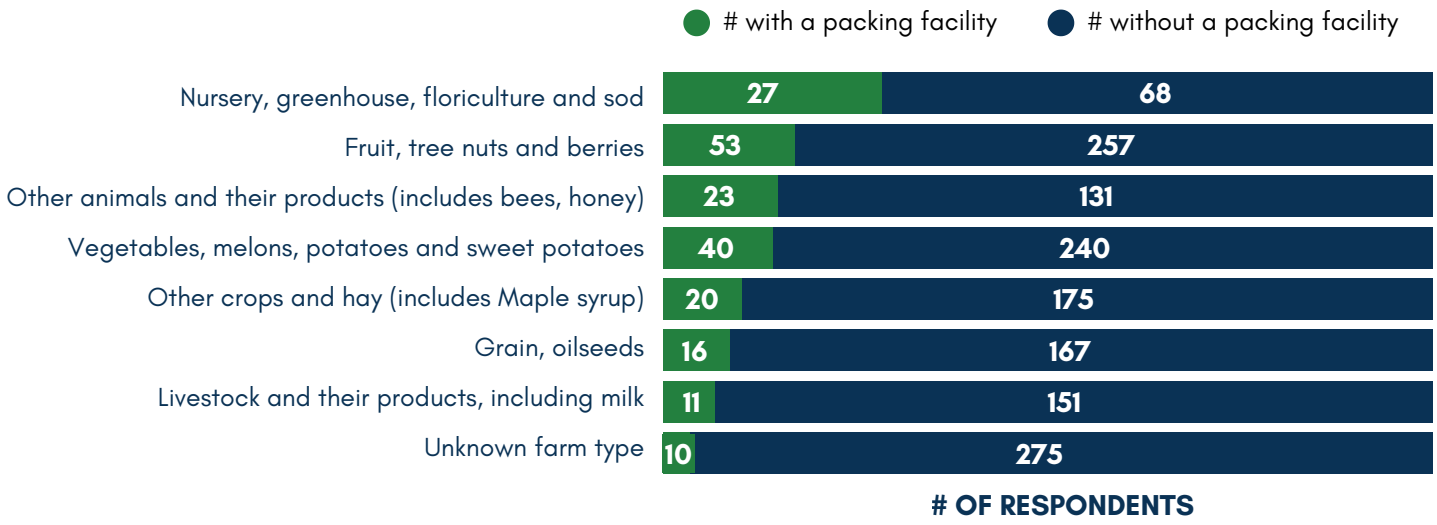
Only a small percentage of edible specialty crop farms had an on-farm packing facility.

In total, 17 percent of edible specialty crop farms indicated they had an on-farm packing facility for distributing vegetables, potatoes, fruit, nuts, berries, or other crops. This type of facility allows fruits and vegetables to be washed, sorted, and packaged for sale. These facilities might also include facilities for cooking down and bottling maple syrup or straining and bottling honey. These facilities may include equipment that can more efficiently sort, pack, or bottle than doing it by hand. It's generally understood that having this type of facility on-farm is necessary for entering wholesale and intermediated market channels, because of the cleanliness and efficiency they may provide.

Farms producing something in a high tunnel or greenhouse were the most likely to have an on-farm packing facility.

Figure 33 shows that on-farm packing facilities were found on all types of farms. However, farms producing nursery, greenhouse, or floriculture or sod, of which greenhouse tomatoes are common, were the most likely to have an on-farm packing facility.

Figure 33: Presence of a packing facility by farm type



WHOLESALE READINESS

Wholesale readiness was more common among respondents with annual gross sales of $1,000 or more.

A small portion of respondents were asked whether they had in place four practices which indicate their readiness to sell through wholesale markets. (The reason only a portion of respondents answered this question was due to an error in the skip logic of the survey.)

Table 21 shows the proportion of these respondents with an understanding of USDA grade standards, liability insurance, an on-farm food safety plan, and preseason planning. It showed among the practices, having liability insurance and participating in preseason planning were the most common, with half of all respondents. The analysis was repeated selecting only those respondents who had $1,000 or more in sales in 2022 or 2023, and it showed that a higher proportion of these higher sale respondents had wholesale readiness practices in place.

Table 21: Wholesale readiness among a subset of respondents

	% OF ALL RESPONDENTS	% OF RESPONDENTS WITH SALES >$1000
Liability insurance	50%	60%
Pre-season planning	50%	60%
Understanding of USDA grade standards and standard packaging requirements	33%	40%
On-farm food safety plan	33%	60%

REASONS FOR NOT QUALIFYING FOR THE SURVEY

The top reason for declining to take the survey was that potential respondents grew edible specialty crops, but did not sell them.

The top reason for not participating in the 2023 Iowa Commercial Horticulture Survey for Food Crops was that potential respondents grew the crops of interest but did not sell them, shown in Table 22. Many explained using written comments that they grew the crops for home use or for gifting to friends, family, neighbors, or food banks/pantries. The next most common reason for not taking the survey was that respondents continued to farm in 2023 but quit producing the crops of interest.

Somewhat unexpectedly, 678 people (weighted) indicated they did not qualify to take the 2023 Hort Survey although they indicated they made sales of edible specialty crops in 2022.Some of these respondents may have quit producing edible specialty crops between 2022 and 2023, whereas others may have misunderstood whether they should have filled out the survey in 2022. However, a closer look at the reasons these individuals did not qualify for the survey in 2023 shows many of these producers never considered themselves to be commercial producers of these crops, even though they reported sales in 2022. For example, 66 respondents reported sales of these crops in 2022, but indicated on the Hort Survey, that they had never grown and sold these crops. The line between a commercial producer and a hobbyist is often unclear.

Table 22: Reasons for not taking the 2023 Iowa Commercial Horticulture Survey for Food Crops*

REASONS FOR NOT QUALIFYING FOR THE 2023 HORT SURVEY	REPORTED SALES OF THESE CROPS IN 2022	DID NOT REPORT SALES OF THESE CROPS IN 2022	TOTAL
I grew those crops but did NOT sell them.	246	581	827
I farmed in 2023 but quit producing the aforementioned crops.	84	242	326
I never grew these crops.	66	234	300
I retired from farming.	60	141	201
I quit farming.	55	111	166
I put my land into CRP.	20	109	129
My crops failed in 2023.	51	93	144
Other**	41	88	129
I am just starting to produce the aforementioned crops.	14	37	51
I took a break from growing these crops.	23	12	35
I rented out my land.	10	15	25
I moved.	4	12	16
I grew those crops in a state OTHER than Iowa.	4	6	10

** All numbers in this table are weighted, meaning this is not the raw number of respondents who reported, but the population estimate calculated using weights.*

*** Other includes sold products on contract, died, drought/no water, lack of market or profit, pesticide drift, and refused.*

CONCLUSION

This survey revealed that much has remained the same among edible specialty crop farms from 2015 to 2023, with two exceptions: where (or how) growers sell their products and how growers advertise.

Since 2015, the percentage of growers who sell at farmers markets and processors decreased, those with roadside stands increased, while the percentage that sold at several other types of markets increased slightly.

Not surprisingly, there's been an increase in digital advertising methods and a continued decrease in paper advertising. Websites appeared to be a popular way to advertise products in 2015, but use has since decreased slightly. The percentage of growers using social media has steadily increased with time.

The survey showed that the number of people producing edible specialty crops is increasing with time, especially those producing on a very small scale and deriving a small portion of their income from the sale of these products. It appears that the number of growers who derive all or most of their income from the sale of edible specialty crops is holding steady, after a large drop between 1989 and 2000.

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APPENDIX A: METHODS FOR APPLYING WEIGHTS AND FOR ANALYSES

Weights were used in 2023 and were applied retroactively to previous surveys.

Data cleaning, analysis, and reporting were completed by Iowa State University Extension and Outreach. Duplicate responses were cleaned by either selecting the response which was most complete or by combining the two responses. When combining quantitative variables, the average of the two responses was used. For responses involving choices using check boxes and where multiple boxes could be selected, if either respondent selected an answer choice that choice was included in the final response. For checkbox questions where only one choice could be selected, if duplicate responses did not select the same choice, the middle choice was selected for use in the data set. In the few cases where a middle choice could not be selected, the higher or lower choice was selected alternately between each set of duplicates in which this occurred.

The 2023 Hort Survey contact list was divided into four strata, categorizing potential respondents by operation type. A response rate was calculated for each of the four strata, and responses were weighted accordingly. All cases from each stratum were included in the contact list, so the sampling weight was 1 for all strata. Weights were not used in previous iterations of the Hort Survey, therefore select variables are summarized in this report for the 2015 and 2000 surveys with a simple nonresponse weight applied. Previous surveys did not divide the list frame into strata, so the same weight is applied to all respondents.

Analyses were performed using R. Descriptive statistics were used along with a few t-tests for independent samples and chi-squared tests. Missing values for the question regarding dollar value of gross sales of the crops of interest were imputed using a linear regression model. Economic impact was calculated using an input-output model and IMPLAN™ software.

APPENDIX B: CENSUS OF AGRICULTURE PUBLISHED VALUES, NUMBER OF FARMS PRODUCING EDIBLE SPECIALTY CROPS, 1997-2022

Table A: Number of farms producing edible specialty crops by year

CROP	1997	2002	2007	2012	2017	2022	% CHANGE FROM EARLIEST YEAR TO 2022
Apples	443	344	364	348	428	498	12%
Apricots	29	12	38	12	31	36	24%
Aronia berries					280	250	-11%
Asparagus	90	80	85	95	141	154	71%
Beans	135	177	210	323	279	256	90%
Beets	35	33	52	72	177	139	297%
Berries, other			14	136	25	19	36%
Blackberries			60	58	44	51	-15%
Blueberries					41	62	51%
Boysenberries					2	1	-50%
Broccoli	28	35	42	56	138	109	289%
Brussels sprouts			3	6	69	51	1600%
Cabbage	83	66	56	67	228	211	154%
Carrots	29	22	32	46	157	146	403%
Cauliflower	11	6	8	16	72	62	464%
Celery		1	1	3	22	24	2300%
Cherries		36	121	120	163	205	469%
Chestnuts			32	35	68	195	509%
Cucumbers	80	79	87	142	253	275	244%
Currants				3	12	15	400%
Daikon			1	1	26	24	2300%
Eggplant	32	20	23	46	126	123	284%
Elderberries					45	67	49%
Garlic		18	50	60	137	146	711%
Gooseberries						9	
Gourds						90	

CROP	1997	2002	2007	2012	2017	2022	% CHANGE
Greens	20	14	21	53	188	183	815%
Hazelnuts		3	29	31	49	73	2333%
Honey*	194	208	362	446	926	1229	534%
Lettuce	26	51	86	141	391	419	1512%
Maple syrup					53	87	64%
Melons	192	155	167	214	363	357	86%
Mulberries						10	
Mushrooms				5	4	14	180%
Okra	8	14	10	13	57	66	725%
Onions	79	79	78	145	387	345	337%
Parsnips						5	
Pawpaws						38	
Peaches	105	61	114	101	117	134	28%
Pears	59	64	121	103	146	244	314%
Peas	60	46	61	60	149	147	145%
Peppers		297	331	564	472	542	82%
Plum-apricot hybrids					1		
Plums					80	126	58%
Potatoes	117	117	230	373	271	234	100%
Pumpkins	218	263	282	381	355	345	58%
Radishes	27	20	17	35	144	140	419%
Raspberries			184	126	145	125	-32%
Rhubarb	13	8	22	22	106	123	846%
Spinach	16	13	6	22	114	100	525%
Squash	123	92	299	483	903	311	153%
Strawberries			150	151	139	145	-3%
Sweet corn	556	462	410	389	329	333	-40%
Sweet potatoes		18	19	22	83	66	267%
Tomatoes, grown outdoors	248	288	346	527	426	445	79%
Tomatoes, grown under cover			90	184	216	160	78%
Turnips	14	5	9	15	65	58	314%
Walnuts	7	26	42	17	43	87	1143%

**Here the number of farms with honey collected is reported. This number is higher than the number of farms with honey sales, but lower than the number of farms with bee colonies.*

APPENDIX C: ACRES AND SALES BY VALUE CHAIN COORDINATOR REGION

Table B: median, average, and total sales and acreage and each value chain coordinator region.

	MEDIAN SALES	AVERAGE SALES	ESTIMATED TOTAL*	# PRODUCERS REPORTING SALES	MEDIAN ACRES	AVERAGE ACRES	TOTAL	# PRODUCERS REPORTING ACRES
Healthy Harvest of North Iowa Cerro Gordo, Floyd, Franklin, Hancock, Kossuth, Mitchell, Winnebago, Worth, Wright Counties	$3,299	$32,970	$3,370,000	98	3.082	7.214	709	102
Southeast Iowa Davis, Des Moines, Henry, Jefferson, Lee, Louisa, Van Buren, Wapello, Washington Counties	$4,372	$15,990	$2,105,000	138	3.236	14.85	2042	132
Johnson County Local Food Program Johnson County	$13,130	$38,740	$2,095,000	50	4.227	21.48	1078	54
Golden Hills RC&D Fremont, Page, Mills, Montgomery, Pottawattamie, Cass, Shelby, Audubon & Harrison Counties	$2,430	$15,580	$1,048,000	73	2.091	21.03	1538	67
Cedar Valley Food and Farm Partnership Benton, Black Hawk, Bremer, Tama	$6,763	$27,970	$1,801,000	66	1.934	8.211	545	64
Southern Iowa RC&D Adams, Adair, Clarke, Decatur, Ringgold, Taylor, and Union Counties	$2,403	$24,860	$897,100	42	1.818	14.51	609	36
Eat Greater Des Moines Polk County	$3,705	$7,549	$368,300	47	2.645	6.040	283	49

** The 2023 Hort Survey sampling method did not account for over coverage, under coverage, nor misclassification. In addition, some respondents did not provide their 2023 sales. The Hort Survey planning team believes these figures may be lower than the true sales amount.*

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