

ARKANSAS SPECIALTY CROP INDUSTRY:

Economic Contribution and Characteristics



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CONTENTS

TABLES	4
FIGURES	5
REPORT HIGHLIGHTS	6
Specialty Crop Survey:	6
Economic Contribution (IMPLAN):	7
INTRODUCTION	8
SECTION I: SPECIALTY CROP INDUSTRY SURVEY	9
Methodology	9
Business and Ownership Characteristics	13
Marketing and Sales	16
Industry Use of Resources	19
Industry Perception of Challenges	23
SECTION II: ECONOMIC CONTRIBUTION ANALYSIS	30
Methodology	31
Sector Selection	32
Model Settings	35
Results and Discussion	36
Employment	37
Labor Income	40
Value Added	43
CONCLUSIONS	46
REFERENCES	48

Appendix A: Questionnaires Distributed to Specialty Crop Firms	51
Specialty Crop Survey of Fruit, Vegetable, Nut, Herb, and Cut Flower Production.....	51
Specialty Crop Survey of Fruit, Vegetable, Nut, Herb, and Cut Flower Processing	56
Specialty Crop Survey of Ornamental Sales, Services, and Production	60
Specialty Crop Survey of Turf Production	68
Specialty Crop Survey of Beekeepers and Honey Production	72
Specialty Crop Survey of Future Beekeepers.....	76
Specialty Crop Survey of Golf Course Management	78
Appendix B: Importance of Challenges Faced by Specialty Crop Producers	83
Table B1: Importance of Challenges for Fruit, Vegetable, Nut, Herb, and Cut Flower Producers	83
Table B2: Importance Challenges for Fruit, Vegetable, Nut, Herb, and Cut Flower Processors	84
Table B3: Importance of Challenges for Ornamental Production, Sales, and Service Firms	85
Table B4: Importance of Challenges for Turf Producers.....	86
Table B5: Importance of Challenges for Beekeepers and Honey Producers	86
Table B6: Importance of Challenges for Golf Course Managers.....	87
Appendix C: Specialty Crop-Generated Activity by Sector, 2015	88
Table C1: Specialty Crop – Generated Activity by IMPLAN Sector.....	88

TABLES

Table 1: Response Data from Specialty Crop Industry Questionnaires.....	10
Table 2: Years of Operation by Business Type.....	13
Table 3: Specialty Crop Industry Business Classification	14
Table 4: Specialty Crop Industry Employment Characteristics.....	14
Table 5: Markets Utilized by Specialty Crop Producers.....	16
Table 6: Specialty Crop Industry Sales Data.....	17
Table 7: In-State Versus Out of State Sales of Specialty Crop Products and/or Services.....	18
Table 8: Informational Resources Used by Specialty Crop Businesses.....	19
Table 9: Perception of Challenges by Fruit, Vegetable, Nuts, Herbs, and Cut Flower Producers	24
Table 10: Perception of Challenges by Fruit, Vegetable, Nuts, Herbs, and Cut Flower Processors.....	25
Table 11: Perception of Challenges by Ornamental Production, Sales, and Service Firms.....	26
Table 12: Perception of Challenges by Turf Producers.....	27
Table 13: Perception of Challenges by Beekeepers.....	28
Table 14: Perception of Challenges by Golf Course Management Firms	29
Table 15: Specialty Crop Categories and Related IMPLAN Sectors	32
Table 16: Arkansas Specialty Crop Industry Direct Economic Effects, 2015	34
Table 17: Contribution Summary for Arkansas' Specialty Crop Industry, 2015	36
Table 18: Top Five NAICS Industries for Employment Generated by Specialty Crops, 2015	37
Table 19: Direct, Indirect, and Induced Employment Generated by Specialty Crops, 2015	39
Table 20: Top Five NAICS Industries for Labor Income Generated by Specialty Crops, 2015.....	40
Table 21: Direct, Indirect, and Induced Labor Income Generated by Specialty Crops, 2015.....	41
Table 22: Top Five NAICS Industries for Value Added Generated by Specialty Crops, 2015	43
Table 23: Direct, Indirect, and Induced Value Added Generated by Specialty Crops, 2015	45

FIGURES

Figure 1: Distribution of Usable Responses by Business Type.....	10
Figure 2: Age of Survey Respondents	15
Figure 3: Race of Survey Respondents.....	15
Figure 4: Gender of Survey Respondents	15
Figure 5: Education Level of Survey Respondents.....	15
Figure 6: Fruit, Vegetable, Nut, Herb, and Cut Flower Producer Use of Informational Resources.....	20
Figure 7: Fruit, Vegetable, Nut Herb, and Cut Flower Processor Use of Informational Resources.....	20
Figure 8: Ornamental Sales and Services Provider Use of Informational Resources	21
Figure 9: Turf Producer Use of Informational Resources	21
Figure 10: Beekeeper Use of Informational Resources	22

REPORT HIGHLIGHTS

This report presents the findings of a study of the Arkansas specialty crop industry and its contribution to the Arkansas economy. This was accomplished using two methods: 1) development and distribution of specialty crop industry questionnaires and; 2) economic contribution analysis using IMPLAN input-output modeling software and data. Highlights from these studies are listed below:

SPECIALTY CROP SURVEY:

- The surveyed firms had been in business for an average of 17.1 years, with the majority (59.2%) operating for less than ten, and 54.5% being classified as sole proprietorships.
- Average employment levels for the responding firms were 6.0 full time and 11.5 part-time employees, with 36.1% of responding firms utilizing some seasonal or part-time labor.
- The responding owners/managers were predominately over the age of 44 (82.7%), white (94.3%), male (82.6%), and educated beyond high school (83.2%).
- Sales methods varied between industries with a majority of vegetable, herb, and cut flower producers selling at least some of their harvest at farmers markets.
- The majority of firms reported relatively low sales totals with 63.7% reporting annual sales less than \$10,000.
- Most firms reported making all of their sales in-state, with more than 80% of firms reporting at least half of their sales as being in-state.
- The Internet was the most widely used resource for business information in most industries.
- The top challenges identified by respondents varied, but net returns/profit margin ranked high for most industries.

ECONOMIC CONTRIBUTION (IMPLAN):

- Specialty crops contributed \$1.4 billion in total value added to Arkansas' economy in 2015.
- The specialty crop industry accounted for 27,135 Arkansas jobs in 2015.
- Specialty crop activities resulted in \$904.7 million in labor income for Arkansas' workers in 2015.
- In 2015, specialty crop industries resulted in the generation of value added, employment, and income for each industry in the state, as defined by the 2-digit North American Industry Classification System (NAICS).
- Sectors most heavily affected by Arkansas' specialty crop industry include: Administrative and Support and Waste Management and Remediation Services; Retail Trade; Agriculture, Forestry, Fishing and Hunting; Wholesale Trade; Public Administration; and Real Estate and Rental and Leasing.

INTRODUCTION

The specialty crop industry plays an important role in Arkansas agriculture. Agricultural firms making up this industry include those producing fruit, vegetable, nut, herb, ornamental, bee, and turf products (USDA AMS, 2017a). For the purposes of this report, the specialty crop industry also encompasses secondary firms involved in processing, selling, or further utilizing specialty crop products. These firms include processors, garden centers, arborists, landscape companies, and golf courses.

The specialty crop sector enhances the state's economy through its own activities and its contribution to other economic sectors. Specialty crop businesses purchase goods and services from local businesses to produce and deliver their final products to other businesses and consumers. A number of businesses add further value by processing specialty crop products, or utilizing them to deliver other services. These purchases keep money circulating throughout the state economy and stimulate additional spending by local businesses and households.

The specialty crop sector also plays an important role in enhancing Arkansans' quality of life by providing abundant fresh and processed produce for consumption. Residents gain additional aesthetic benefits from the utilization and display of ornamental goods and services throughout the community.

This report examines the specialty crop industry's production, processing, and service components, as well as its interactions with other sectors of the economy. The study also attempts to estimate the size and scope of the industry in Arkansas, characteristics of businesses within the industry, and the total economic contribution of the industry to Arkansas' economy. This was accomplished using two methods: 1) development and distribution of specialty crop industry surveys and; 2) economic contribution analysis using IMPLAN input-output modeling software and data. The following sections further detail the methodologies and findings of these analyses.

SECTION I: SPECIALTY CROP INDUSTRY SURVEY

In this study, Arkansas' specialty crop industry is defined to include fruit, vegetable, nut, herb, ornamental, bee, and turf production, processing, and sales, as well as related service industries such as landscaping and lawn care. To examine these areas, six different questionnaires were administered to producers and other businesses making up these industries. The questionnaires focused on 1) fruit, vegetable, nut, herb, and cut flower production; 2) fruit, vegetable, nut, and herb processing and sales; 3) ornamental sales, services, and production; 4) turf production; 5) beekeepers and honey production; and 6) golf course management.

METHODOLOGY

In the spring of 2015, funded in part by the USDA Specialty Crop Block Program (USDA AMS, 2017b), a questionnaire was developed by the University of Arkansas System, Division of Agriculture, Center for Agricultural and Rural Sustainability (CARS). Industry feedback was solicited from business owners and industry representatives to improve the questionnaire design. Both paper, and electronic versions of the questionnaire were developed using this process. Copies of these questionnaires can be found in Appendix A.

Attempts were made to include all commercial firms operating within the industry into the mailing database. However, it should be noted that general merchandise firms (e.g. Wal-Mart), government agencies and municipalities, educational institutions, and privately managed landscapes were not included in the database. While these firms represent significant economic activity in terms of sales and employment, it was ultimately deemed too difficult to accurately survey these businesses.

The survey was administered through the physical mailing of paper questionnaires, and electronically through emails containing an anonymous link to an online questionnaire. Questionnaires were also distributed at various industry events. Responses from these surveys are included under the "mail" category in the following table and figure. Qualtrics Research Suite online survey software was used to distribute the electronic version (Qualtrics, Provo, UT). Throughout 2015 and early 2016, paper questionnaires were mailed to 5,834 horticulture businesses believed to be operating in Arkansas, with email links sent to 1,290 firms. Nine hundred sixty responses were received, putting the overall

response rate at 13.5 percent. Of these responses, 590 contained usable data, making the usable response rate 8.3 percent. (Table 1).

Table 1: Response Data from Specialty Crop Industry Questionnaires

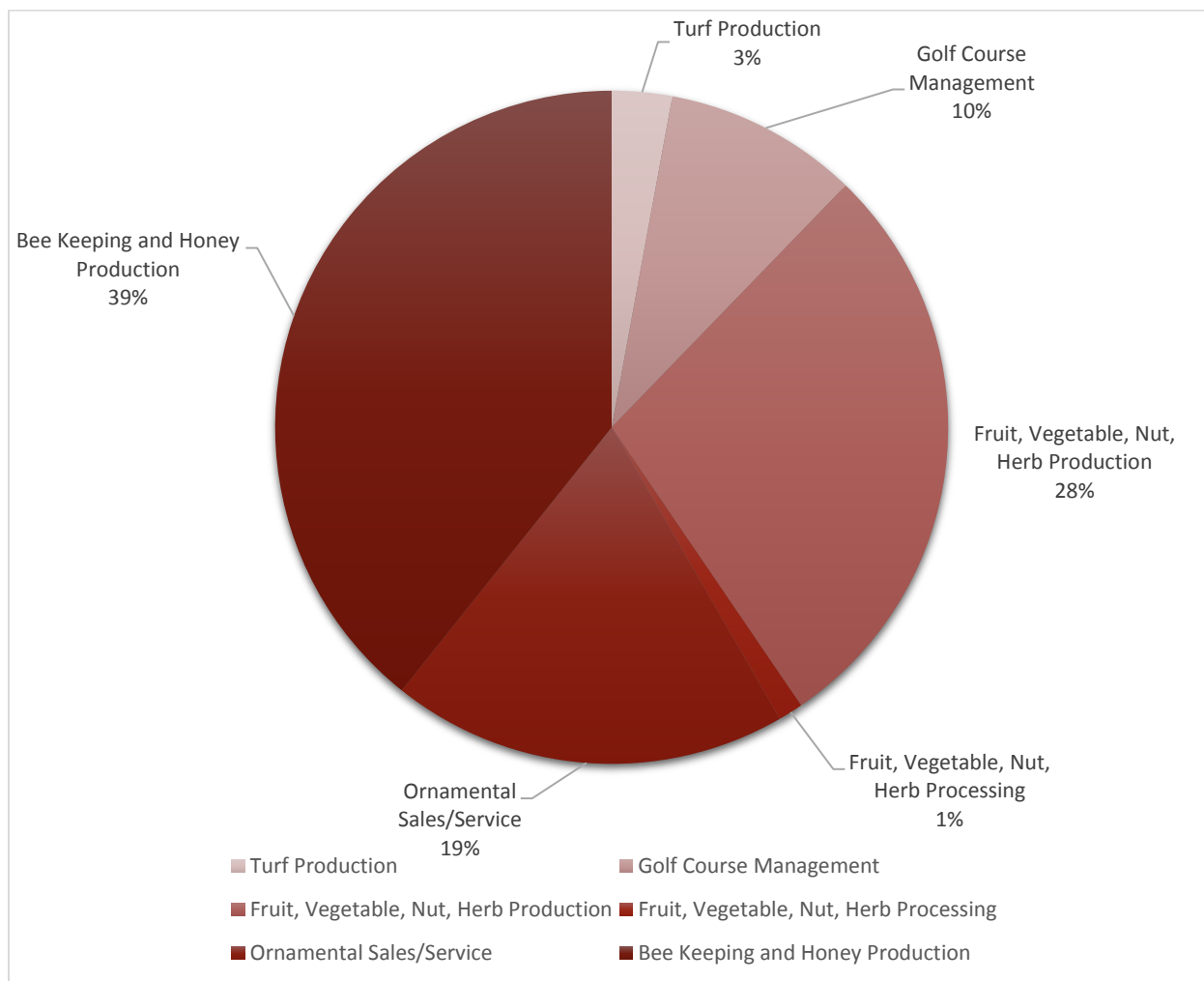
Survey	Distributed	Non-Response	Returned (Bad Address)	Total Responses	Usable Responses
Fruit, Vegetable, Nut, and Herb Production	1,385 – mail 428 – email ^a	1,170 – mail	45 – mail	170 – mail 92 – email	87 – mail ^b 79 – email
Fruit, Vegetable, Nut, and Herb Processing	95 – mail 13 – email ^a	67 – mail	24 – mail	4 – mail ^b 3 – email	4 – mail ^b 3 – email
Ornamental Sales and Service	2,083 – mail 718 – email ^a	1,946 – mail	8 – mail	129 – mail 62 – email	62 – mail ^b 50 – email
Turf Production	93 – mail 16 – email ^a	63 – mail	17 – mail	13 – mail 18 – email	11 – mail ^b 6 – email
Beekeeping and Honey Production	1,993 – mail	1,594 – mail	1 – mail	398 – mail	231 – mail ^b
Golf Course Management	185 – mail 115 – email ^a	127 – mail	34 – mail	24 – mail 47 – email	20 – mail ^b 37 – email
Total	5,834 – mail 1,290 – email^a	4,967	129	738 – mail 222 – email	415 – mail^b 175 – email

^aDenotes mailings to individual email addresses, does not include listserv or forwarded/shared email invitations.

^bValue may include a small number of responses collected from individuals at various industry events.

Figure 1 provides a break-down of the total usable responses by various business type. The majority of responses came from the central and northwest regions of Arkansas, with operations located in Washington, Pulaski, Benton, Faulkner, and White counties making up 34.7% of responses. The highest number of surveys were gathered from bee and honey producers, followed by fruit, vegetable, nut, and herb producers; ornamental sales and service firms; golf course management companies; turf producers; and fruit, vegetable, nut, and herb processors.

Figure 1: Distribution of Usable Responses by Business Type



Based on available farm and establishment counts, our collected responses represent approximately 20% of fruit, vegetable, nut and herb producers, 9% of ornamental sales and service firms, 53% of turf producers, 10% of registered beekeepers, and 36% of golf courses in the state of Arkansas (USDA NASS, 2014; ASPB, 2017; USDOL BLS, 2017).

While extensive efforts were made to build robust lists of specialty crop businesses, much of the information gathered was either incorrect or outdated. In other cases, such as in the ornamental sales and services sector, business owners told us often that they didn't see the value to our study. Efforts are needed in the future to build better contact lists within the specialty crop industry and to promote the importance of their contributions within the state.

Note: Additional surveys were distributed to attendees of the University of Arkansas Cooperative Extension Service's Beginning Beekeeping Courses, which were held across the state throughout 2017. As most attendees were not yet beekeepers, the original beekeeping survey was edited to suit their situation. Results from these surveys are not included in this report, but are mentioned in the extension publication titled Arkansas Specialty Crop Profile: Beekeeping (English et al., 2017). A copy of the edited beekeeping survey can be found in Appendix A.

Data from each of the specialty crop surveys were used to create a series of fact sheets related to Arkansas' fruit and nut, vegetable and melon, ornamental and greenhouse, and turfgrass industries. These fact sheets are referenced at the end of this report, and can be viewed or ordered through the University of Arkansas System, Division of Agriculture, Cooperative Extension Service website (<https://www.uaex.edu/publications/order.aspx>).

BUSINESS AND OWNERSHIP CHARACTERISTICS

The businesses surveyed have been in operation for an average of 17.1 years with 21.0% reportedly operating for more than 25 years. Although almost 60 percent of firms reported being in operation for less than 10 years, the majority of young firms were found in the herb, honey, and cut flower industries which held average operation ages of 7.1, 7.5, and 8.3 years, respectively. The combined fruit, vegetable, and nut industries show a higher average of 21.6 years. The oldest firms appear to be turf and golf course management, holding an average of 25.4 and 39.8 years, respectively (Table 2).

Table 2: Years of Operation by Business Type

Type of Operation	# of responses	Average (years)	Median (years)
Fruit	121	21.8	15
Vegetable	111	18.7	10
Nut	28	32.4	19
Herbs	30	7.1	5
Cut Flowers	24	8.3	4
Turf	16	25.4	22
Beekeeping	214	7.5	4
Golf Course	56	39.8	44

The majority of firms (almost 55%) were reported as being sole proprietorships. This is not surprising as a number of these businesses are small-scale operations, often relying on direct marketing strategies to distribute their products and services. Another 28.1% utilize the corporate structure, with a smaller number of firms reporting as partnerships (4.1%) or member owned businesses (3.8%). Almost 10 percent of respondents marked “Other” for this question, with the majority of these respondents listing their specialty crop activities as a hobby (Table 3).

Table 3: Specialty Crop Industry Business Classification

Business Classification	# of responses	% of total
Sole Proprietorship	316	54.5%
Partnership	24	4.1%
LLC	94	16.2%
Corporation	69	11.9%
Member Owned	22	3.8%
Other	55	9.5%
Total	580	100.0%

In terms of employment, the firms reported an average employment of 9.0 employees (6.0 full-time, 11.5 part-time). A majority of firms (71.9%) hired fewer than five full-time employees with 85.2% hiring less than ten full-time employees. More than a third (36.1%) of respondents reported using part-time/seasonal employees with 77.4% hiring less than five and 89.0% hiring less than ten part-time/seasonal employees. A small percentage of firms reported utilizing the H2 visa program with 1.0% hiring H2 full-time employees and 2.3% hiring H2 part-time employees (Table 4). The average total value reported for annual wages and salaries was \$162,810.75.

Table 4: Specialty Crop Industry Employment Characteristics

Type of Operation	% of Firms Hiring Full-Time Employees	Average # of Full-Time Employees	% of Firms Hiring Part-Time Employees	Average # of Part-Time Employees	% of Firms Employing H2 Full-Time	% of Firms Employing H2 Part-Time
Fruit, Vegetable, Herb, and Nut Production	20.8%	3.7	59.8%	19.6	3.8%	6.8%
Fruit, Vegetable, Herb, and Nut Processing	40.0%	14.7	40.0%	7.5	-	-
Ornamental Sales and Services	68.5%	6.1	68.6%	5.1	-	1.1%
Turf Production	78.6%	6	54.5%	2.8	-	7.1%
Beekeeping and Honey Production	0.9%	9.5	4.9%	2.1	-	0.4%
Golf Course Management	88.9%	6.5	84.2%	4.2	-	-
Total	28.1%	6.0	36.1%	11.5	1.0%	2.3%

Looking at demographics, the responding owners/managers were predominately over the age of 44 (82.7%), white (94.3%), male (82.6%) and educated beyond high school (83.2%) (Figures 2-5).

Figure 2: Age of Survey Respondents

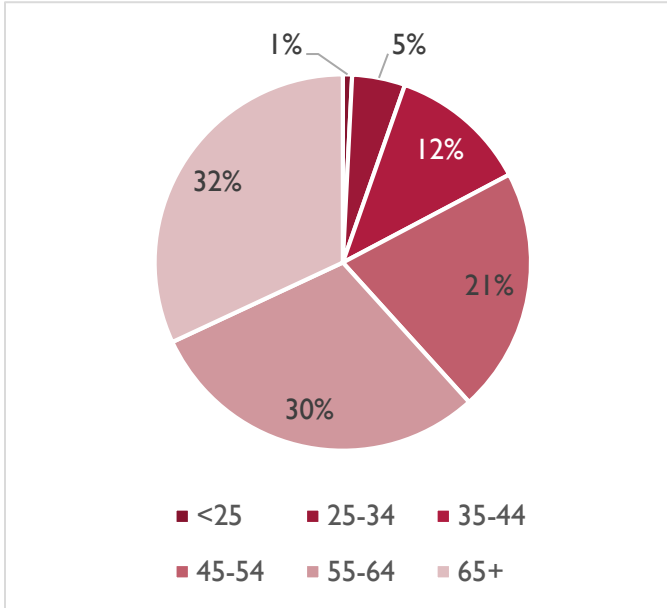


Figure 3: Race of Survey Respondents

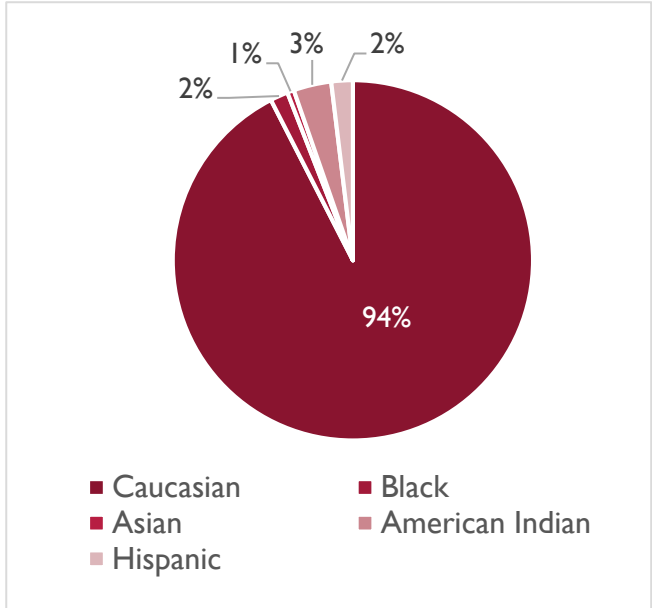


Figure 4: Gender of Survey Respondents

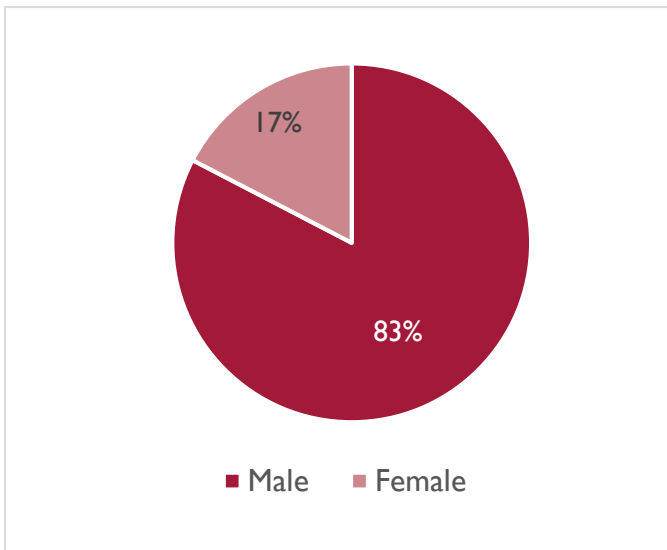
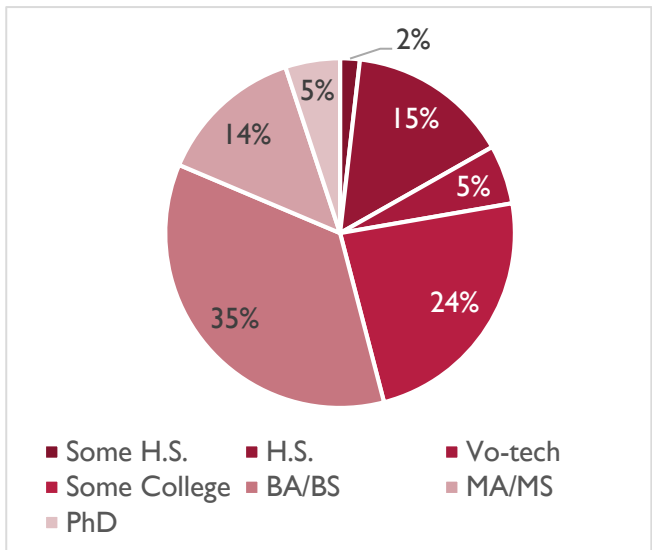


Figure 5: Education Level of Survey Respondents



MARKETING AND SALES

Because of the diverse products and services offered by businesses in the industry, there were a number of marketing and sales strategies utilized by the surveyed firms.

The most popular sales strategies were farm gate retail and farmers markets, followed by wholesale sales. A smaller number reported using internet/mail order services and community supported agriculture programs. Other sales avenues reported included farm to school, garden shows, and giving products away as gifts or donations (Table 5).

Table 5: Markets Utilized by Specialty Crop Producers

Type of Operation	# of responses	Farmers Market	Internet	Mail Order	Retail	Wholesale	CSA	Other
Fruit	92	41.3%	4.3%	0.0%	70.7%	31.5%	5.4%	10.9%
Vegetable	72	66.7%	5.6%	0.0%	47.2%	30.6%	5.6%	13.9%
Nut	13	23.1%	7.7%	0.0%	30.8%	53.8%	0.0%	7.7%
Herbs	12	75.0%	0.0%	0.0%	33.3%	0.0%	8.3%	16.7%
Cut Flowers	10	80.0%	10.0%	0.0%	40.0%	20.0%	0.0%	10.0%
Ornamental	23	21.7%	17.4%	0.0%	56.5%	52.2%	0.0%	8.7%
Beekeeping	90	21.1%	8.9%	3.3%	31.1%	15.6%	0.0%	48.9%

Although many respondents were reluctant to provide information concerning gross sales amounts, we were able to collect some values as shown in Table 6. On the production side, average sales ranged from around \$400 for herb producers to \$674,325 for cut flower production in 2014. Vegetable and nut production also show higher average sales at \$173,505 and \$166,500, respectively. However, due to the small sample size of some groups, the average values may be a bit misleading as one or two large producers may skew the data. Because of this, a more meaningful metric to examine might be median sales, or the percentage of businesses with sales greater than \$250,000, or less than or equal to \$10,000 (Table 6).

Table 6: Specialty Crop Industry Sales Data

Type of Operation	# of responses	Average Sales	Median Sales	Sales >\$250,000	Sales < \$10,001
Fruit Production	70	\$ 49,858	\$ 7,750	2.9%	60.0%
Vegetable Production	59	\$ 173,505	\$ 5,970	10.2%	64.4%
Nut Production	8	\$ 166,500	\$ 2,000	25.0%	75.0%
Herb Production	8	\$400	\$ 150	-	100.0%
Cut Flower Production	6	\$ 674,325	\$ 2,125	16.7%	66.7%
Ornamental Sales and Services	60	\$ 455,411	\$ 200,000	35.0%	10.0%
Beekeeping and Honey Production	101	\$ 2,501	\$ 450	0.0%	96.0%
Fruit Processing	4	\$ 3,785,588	\$ 70,675	25.0%	50.0%
Vegetable Processing	1	\$ 20,000	\$ 20,000	-	0.0%
Nut Processing	1	\$ 2,000,000	\$ 2,000,000	100.0%	0.0%
Herb Processing	0	-	-	-	-
Cut Flower Processing	0	-	-	-	-

A majority of specialty crop producers from each industry reported selling all of their harvest locally, with 90% of cut flower and 86% honey producers selling only within the state. The ornamental and turf industries were more likely to sell at least a portion of their products out of state, with almost 50 percent of surveyed businesses reporting some percentage of out of state sales (Table 7). More than 80 percent of businesses reported at least half of their sales as being in-state. With the exception of nut producers, less than 20% of businesses in each industry reported out of state sales greater than 50 percent.

Table 7: In-State Versus Out of State Sales of Specialty Crop Products and/or Services

Type of Operation	All Sales In-State	50% or More In-State Sales
Fruit	72%	97%
Vegetable	69%	85%
Nut	60%	80%
Herbs	82%	91%
Cut Flowers	90%	90%
Turf	53%	82%
Ornamental Production	56%	88%
Ornamental Sales	55%	92%
Ornamental Services	71%	97%
Beekeeping and Honey Production	86%	98%

When asked about methods for negotiating sales contracts, 41% directly negotiate, 3% utilize an agent or representative, and 56% reported no wholesale sales.

INDUSTRY USE OF RESOURCES

Survey results show the Internet to be the most widely used resource by specialty crop businesses, with 54.5% of respondents reporting regular use of the Internet for obtaining business information. An additional 26.2% of businesses report sometimes using the Internet for their business, with only 19.3% reportedly never using the Internet to obtain business information. University and/or Cooperative Extension Service workshops and publications were also widely used resources. Around 70% of businesses reported the use of trade publications or peer businesses to obtain information. The least utilized resources were private consultants, industry seminars, and professional associations (Table 8).

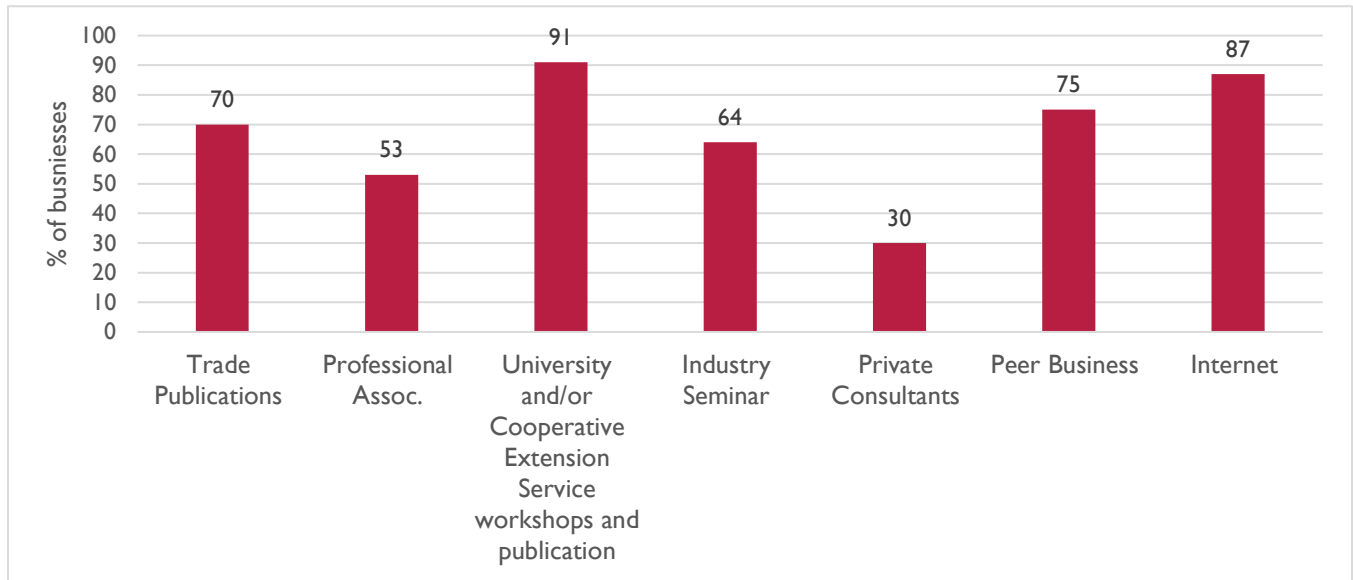
Table 8: Informational Resources Used by Specialty Crop Businesses

Resource	# of Responses	Never	Sometimes	Regularly
Trade Publications	442	31.9%	40.7%	27.4%
Professional Assoc.	431	46.9%	34.1%	19.0%
University and/or Cooperative Extension Service workshops and publication	453	26.0%	44.2%	29.8%
Industry Seminar	422	48.6%	36.0%	15.4%
Private Consultants	421	72.0%	22.3%	5.7%
Peer Business	430	32.8%	40.7%	26.5%
Internet	435	19.3%	26.2%	54.5%

Although use of these resources varied between industries, the Internet was the most widely used resource for most groups. The only exceptions were the fruit, vegetable, nut, herb, and cut flower producers and processors where Internet ranked 2nd and 4th, respectively.

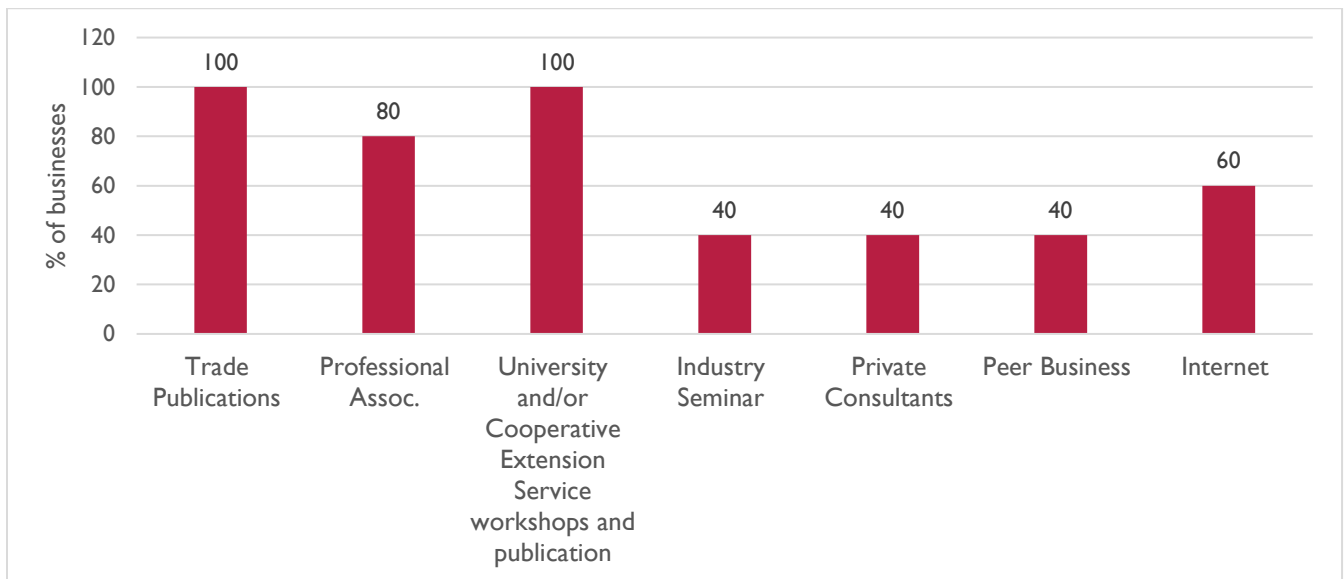
Producers relied most heavily on University and/or Cooperative Extension Service resources, with more than 90 percent reporting at least some use of that resource (Figure 6).

Figure 6: Fruit, Vegetable, Nut, Herb, and Cut Flower Producer Use of Informational Resources



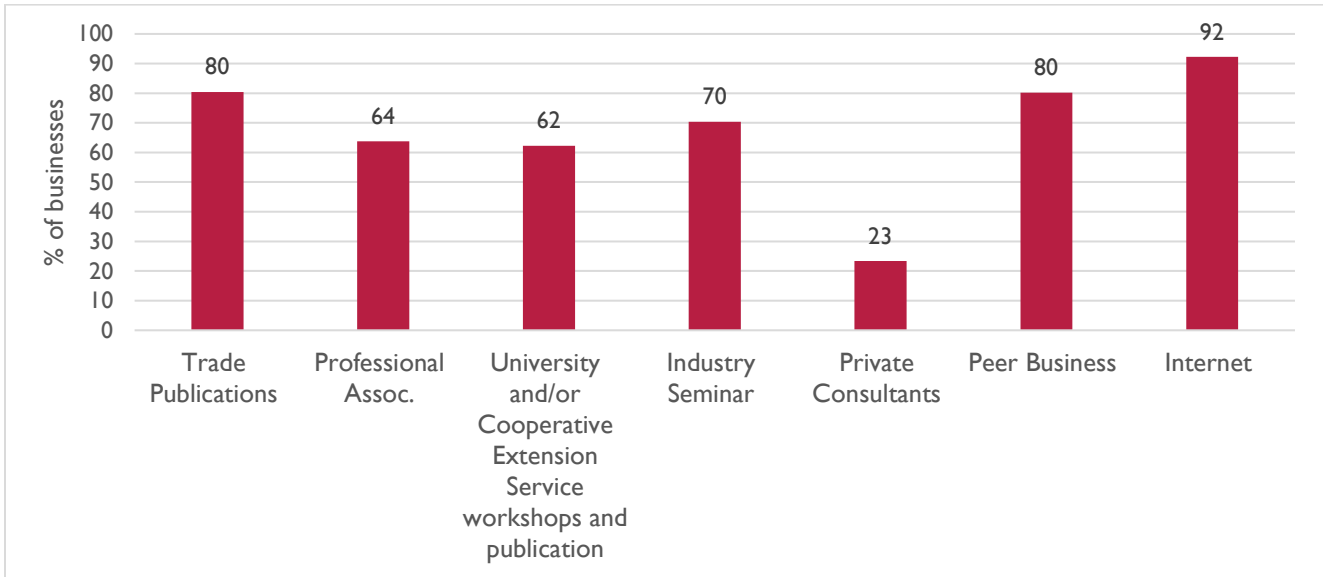
Fruit, vegetable, nut, herb, and cut flower processors also relied heavily on University and Cooperative Extension resources, as well as trade publications, for finding information (Figure 7).

Figure 7: Fruit, Vegetable, Nut Herb, and Cut Flower Processor Use of Informational Resources



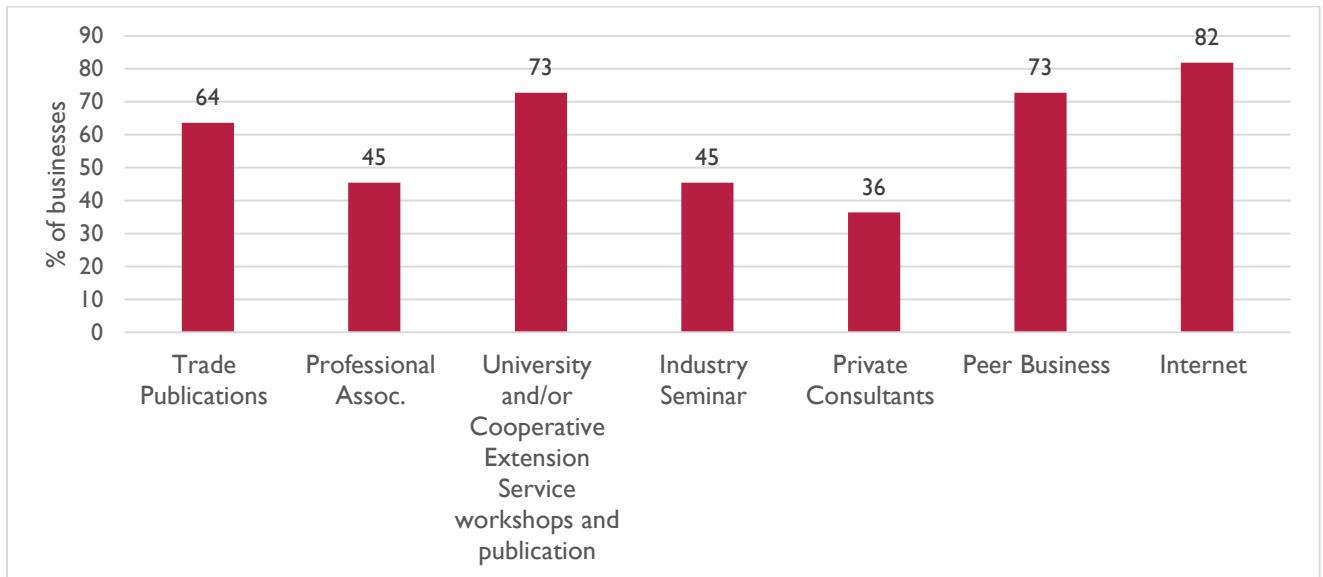
Ornamental sales and service providers' most widely used informational resource was the Internet with 92% use among respondents. This was followed by trade publications and peer business with 80% use. Private consultants were used less by ornamental businesses than for any other specialty crop group (Figure 8).

Figure 8: Ornamental Sales and Services Provider Use of Informational Resources



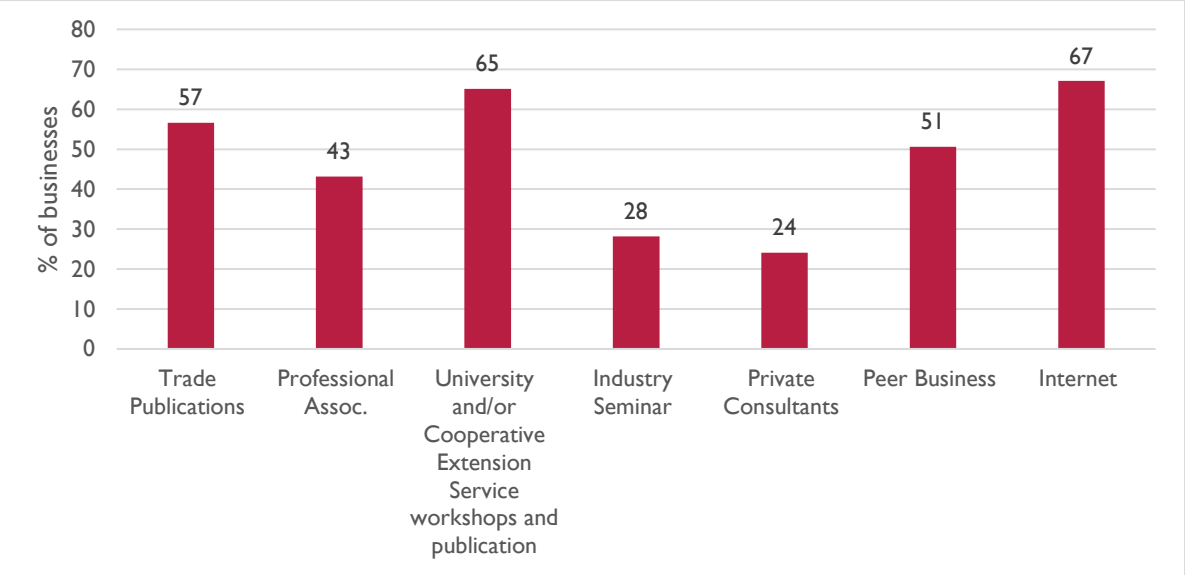
Eighty-two percent of turf grass producers reported using the Internet to find business information. This was followed by University/Cooperative Extension and peer business resources (Figure 9).

Figure 9: Turf Producer Use of Informational Resources



Beekeepers appear to rely on the Internet and University/Cooperative Extension Service to obtain information relevant to their businesses. Trade publications, peer businesses, and professional associations were also popular information sources (Figure 10).

Figure 10: Beekeeper Use of Informational Resources



INDUSTRY PERCEPTION OF CHALLENGES

In the questionnaire, respondents were asked to provide information regarding the major challenges facing their businesses. Although challenges differ between the various types of specialty crop firms, net returns or profit margins were of high concern to almost every industry. The following tables show what owners and managers from various industries expressed as their top challenges. Additional information can be found in Appendix B, Tables B1-B6.

Of the fruit, vegetable, nut, herb, and cut flower producers surveyed, 88% found net returns and profit margin to be either important, or somewhat important. These producers also ranked marketing opportunities, production cost analysis information, water problems, and government regulations as important challenges. Less important (or not applicable) to many producers were language barriers, training on organic certification, high-tunnel/season extension training, and training on post-harvest handling and cold storage (Table 9). For more information see Appendix B, Table B1.

Table 9: Perception of Challenges by Fruit, Vegetable, Nuts, Herbs, and Cut Flower Producers

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Net return or profit margin	88
Marketing opportunities	77
Production cost analysis information	71
Water problems availability/quality	67
Government regulations	66
Equipment selection/utilization	64
Food safety/GAPS training	60
Utility expenses	56
Labor issues acquiring/retaining	56
Business competition, changing market structure	53
GAPS or Food Safety training	53
Post-harvest handling/cold storage training	53
Training on business management or record keeping	52
Lack of knowledge of Production/Cultivation Practices	51
Transportation expenses	49
Training on post-harvest handling and cold storage	46
Training for your employees	41
Training on season extension and/or high tunnels	36
High tunnel/season extension training	30
Training on organic certification	27
Language barriers	21

Of the fruit, vegetable, nut, herb, and cut flower processors surveyed, 100% found net returns/profit margin and production expenses to be either important, or somewhat important. These producers also ranked marketing opportunities, business competition, changing market structure, government regulation, equipment selection/utilization, transportation expenses, supply of horticulture products, and training on business management or record keeping as important challenges. Less important (or not applicable) to many processors were employee training and water problems (Table 10). For more information see Appendix B, Table B2.

Table 10: Perception of Challenges by Fruit, Vegetable, Nuts, Herbs, and Cut Flower Processors

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Net return or profit margin	100
Production expenses	100
Marketing opportunities	75
Business competition, changing market structure	75
Government regulations	75
Equipment selection/utilization	75
Transportation expenses	75
Supply of hort. Products	75
Training on business management or record keeping	75
Labor issues acquiring/retaining	50
Water problems availability/quality	33
Training for your employees	25

Of the ornamental sales, service, and production firms surveyed, 96% found input costs to be either important, or somewhat important. These producers also ranked net returns/profit margin, labor costs, business competition/changing market structure, transportation expenses, and issues related to acquiring/retaining labor as important challenges. Less important (or not applicable) to many firms were water problems and production/cultivation practices (Table 11). For more information, see Appendix B, Table B3.

Table 11: Perception of Challenges by Ornamental Production, Sales, and Service Firms

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Input Costs	96
Net return or profit margin	93
Labor costs	85
Business competition, changing market structure	83
Transportation expenses	82
Labor issues acquiring/retaining	73
Government regulations	69
Utility expenses	64
Training for your employees	62
Training on business management or record keeping	62
Marketing information or training	61
Equipment selection/utilization	61
Production cost analysis information	58
Supply of hort. Products	56
Production/cultivation practices	48
Water problems availability/quality	43

Of the turf producers surveyed, 92% found net returns/profit margin, and business operating expenses to be either important, or somewhat important. These producers also ranked chemical/fertilizer expenses, transportation expenses, and business competition/changing market structure as important challenges. Less important (or not applicable) to many producers were marketing opportunities (Table 12). For more information, see Appendix B, Table B4.

Table 12: Perception of Challenges by Turf Producers

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Net return or profit margin	92
Business operating expenses	92
Chemical/fertilizer expenses	85
Transportation expenses	83
Business competition, changing market structure	82
Labor issues acquiring/retaining	69
Training for your employees	67
Equipment selection/utilization	67
Training on business management or record keeping	64
Government regulations	58
Water problems availability/quality	54
Marketing opportunities	45

Of the beekeepers surveyed, 87% found equipment selection/utilization to be either important, or somewhat important. These producers also ranked net returns and profit margins as important challenges. Less important (or not applicable) to many beekeepers were language barriers, issues related to acquiring/retaining labor, employee training, and transportation expenses (Table 13). For more information, see Appendix B, Table B5.

Table 13: Perception of Challenges by Beekeepers

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Equipment selection/utilization	87
Net return or profit margin	82
Government regulations	69
Production cost analysis information	68
Food safety/GAPS training	67
Marketing opportunities	63
Utility expenses	56
Business competition, changing market structure	51
Training on business management or record keeping	50
Transportation expenses	45
Training for your employees	29
Labor issues acquiring/retaining	23
Language barriers	14

Of the golf course managers surveyed, 98% found chemical/fertilizer expenses to be either important, or somewhat important. These producers also ranked supply/quality of turf, input costs, net returns/profit margin, employee training, government regulations, and issues related to acquiring/retaining labor as important challenges. There were no listed challenges found to be not important (or not applicable) to a majority of golf course managers (Table 14). For more information, see Appendix B, Table B6.

Table 14: Perception of Challenges by Golf Course Management Firms

Challenge	% of Firms Ranking Challenge at Least Somewhat Important
Chemical/fertilizer expenses	98
Supply/Quality of Turf	93
Input Costs	89
Net return or profit margin	87
Training for your employees	81
Government regulations	81
Labor issues acquiring/retaining	79
Equipment selection/utilization	73
Business competition, changing market structure	73
Marketing opportunities	65
Training on business management or record keeping	63
Water problems availability/quality	59

SECTION II: ECONOMIC CONTRIBUTION ANALYSIS

Throughout Arkansas' history, agriculture has been a major contributor to the state's economic growth. Numerous past studies document the economic contribution of the agricultural industry to the state's employment, labor income, and value added (Goodwin et al., 2002; Popp, Vickery and Miller, 2005; Popp, Kemper and Miller, 2007; Kemper, Popp and Miller, 2009; Popp et al., 2010; McGraw, Popp and Miller, 2011; McGraw, Popp and Miller, 2012; English, Popp and Miller, 2013). These studies often highlight the economic contributions of commodities such as grains, poultry, cotton, forestry, etc. While these commodities are an integral part to the state's economy, Arkansas' specialty crop industry also makes a significant economic contribution.

The overall contribution of the specialty crop industry in Arkansas can be measured through a combination of direct, indirect, and induced economic contributions. These contributions include jobs, as well as value added components such as proprietor income, employee compensation, other property type income, and taxes on production and imports.

In this study, direct contributions are those generated directly through activities within the specialty crop production, processing, wholesale, retail, and service industries. Indirect contributions are generated when firms involved in specialty crop activities purchase materials and services from other industries (backward linked industries) in the region (state). Induced contributions result when proprietors and employees of specialty crop businesses and backward linked industries spend their income within the region (state).

METHODOLOGY

This study examines the economic contribution of the specialty crop industry in Arkansas for 2015. The contribution analysis was conducted using input-output (I-O) modeling software available from IMPLAN Group, LLC (IMPLAN, 2017a). The IMPLAN I-O model generates multipliers for the region of study to describe the response of an economy to changes in economic activity. Type SAM (Social Accounting Matrix) multipliers are used to incorporate household expenditures into the model and to calculate any indirect and induced contributions. Use of the SAM framework allows for tracking of both market and non-market transactions such as those flowing from household to government (e.g. taxes), or from government to households, (e.g. transfer payments) (Alward and Lindall, 1996). For state-level studies, state and local government spending may also be internalized within the model as it is assumed that these dollars will be re-spent within the region (IMPLAN, 2017b).

I-O modeling was used in combination with data from IMPLAN and the U.S. Department of Labor's Bureau of Labor Statistics (USDOL BLS, 2017) to determine the direct, indirect, and induced economic effects resulting from specialty crop production, processing, wholesale, retail, and services within Arkansas. Complete methodologies are described in the following sections.

SECTOR SELECTION

The 2015 dataset provided by IMPLAN breaks down the total Arkansas economy into 536 sectors. This sectoring is loosely based on the 2012 North American International Classification System (NAICS). Any sector determined to be related to the specialty crop industry was selected for analysis. These sectors were then organized into five categories: specialty crop production, specialty crop processing, specialty crop wholesale, specialty crop retail, and specialty crop services, as shown in the following table (Table 15).

Table 15: Specialty Crop Categories and Related IMPLAN Sectors

Category	IMPLAN Sector	
Specialty Crop Production	3	Vegetable and melon farming
	4	Fruit farming
	5	Tree nut farming
	6	Greenhouse, nursery, and floriculture production
Specialty Crop Processing	76	Nonchocolate confectionery manufacturing
	77	Chocolate and confectionery manufacturing from cacao beans
	78	Confectionery manufacturing from purchased chocolate
	79	Frozen fruits, juices and vegetables manufacturing
	81	Canned fruits and vegetables manufacturing
	83	Dehydrated food products manufacturing
	101	Coffee and tea manufacturing
	104	Spice and extract manufacturing
109	Wineries	
Specialty Crop Wholesale	395	Wholesale trade
Specialty Crop Retail	399	Retail - Building material and garden equipment and supplies stores
	400	Retail - Food and beverage stores
	405	Retail - General merchandise stores
	406	Retail - Miscellaneous store retailers
Specialty Crop Services	449	Architectural, engineering, and related services
	469	Landscape and horticultural services

In some instances, it was determined that only a portion of an IMPLAN sector should be included within the analysis. For example, IMPLAN aggregates all Wholesale Trade under one sector, 395. As some, but not all, of this sector's activities involve specialty crops, methods were developed to estimate the value attributable only to specialty crops. Other IMPLAN sectors containing partial contributions include: 399 – Retail – Building material and garden equipment supplies stores; 400 – Retail – Food and beverage stores; 405 – Retail – General merchandise stores; 406 – Retail – Miscellaneous store retailers; and 449 – Architectural, engineering, and related services. For these cases, other data sources were used to estimate sector employment.

The primary data source for employment estimations within these aggregated IMPLAN sectors was the U.S. Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages* (USDOL BLS, 2017). This census report, known as the QCEW, breaks down employment and wages by state, all the way down to the 6-digit NAICS level. Using these data, specialty crop sectors were identified within the wholesale, retail, and services sectors. QCEW employment values were then used to estimate specialty crop industry sales, employee compensation, proprietor income, other property-type income, and taxes on production and imports using ratios developed by IMPLAN.

It should be noted that some specialty crop activities could potentially be captured through additional processing sectors such as: 82 – Canned specialties; 88 – Ice cream and frozen dessert manufacturing; 99 – Roasted nuts and peanut butter manufacturing; 103 – Mayonnaise, dressing, and sauce manufacturing; and 105 – All other food manufacturing. However, due to the lack of a reasonable means for separating the specialty crop components from these sectors, they were excluded from the analysis.

These estimates, combined with existing IMPLAN values result in the following direct effects for the specialty crop industry in Arkansas for 2015 (Table 16).

From here, IMPLAN's input-output modeling software was used to estimate any additional indirect and induced effects, resulting from the existence of specialty crop industries within the state. Methods for building the economic model in IMPLAN are described in the following sections.

Table 16: Arkansas Specialty Crop Industry Direct Economic Effects, 2015

Category	IMPLAN Sector	Employment	Labor Income	Value Added	
Specialty Crop Production	3	Vegetable and melon farming	294	\$25,596,004	\$30,006,627
	4	Fruit farming	294	\$10,510,706	\$11,893,645
	5	Tree nut farming	44	\$2,413,919	\$2,812,426
	6	Greenhouse, nursery, and floriculture production	1,196	\$63,329,699	\$69,885,481
Specialty Crop Processing	76	Nonchocolate confectionery manufacturing	27	\$951,556	\$1,609,670
	77	Chocolate and confectionery manufacturing from cacao beans	-	-	-
	78	Confectionery manufacturing from purchased chocolate	24	\$948,617	\$1,066,440
	79	Frozen fruits, juices and vegetables manufacturing	202	\$16,467,518	\$25,762,757
	81	Canned fruits and vegetables manufacturing	499	\$25,688,559	\$37,929,838
	83	Dehydrated food products manufacturing	-	-	-
	101	Coffee and tea manufacturing	7	\$222,810	\$299,721
	104	Spice and extract manufacturing	48	\$2,947,970	\$4,618,124
	109	Wineries	51	\$1,180,851	\$2,428,273
Specialty Crop Wholesale	395	Wholesale trade	1,254	\$94,553,129	\$210,943,729
Specialty Crop Retail	399	Retail - Building material and garden equipment and supplies stores	1,455	\$48,733,926	\$84,445,116
	400	Retail - Food and beverage stores	1,789	\$51,959,377	\$81,542,817
	405	Retail - General merchandise stores	534	\$13,612,175	\$24,399,867
	406	Retail - Miscellaneous store retailers	684	\$11,903,007	\$14,774,775
Specialty Crop Services	449	Architectural, engineering, and related services	111	\$7,096,169	\$7,086,066
	469	Landscape and horticultural services	10,777	\$202,578,991	\$263,122,671

MODEL SETTINGS

IMPLAN's National Trade Flows Model was used for this analysis. IMPLAN recommends the use of this model for all studies, with the exception of those examining congressional district and/or zip code level studies. In those instances, IMPLAN's Econometric RPC modelling method is preferred (English, 2017).

In terms of closing the model, all households, as well as state and local government spending were internalized. Being a state-level study, it is assumed that some proportion of these dollars will be re-spent within the state, therefore it was deemed appropriate to internalize these institutions.

The event year was set to 2015, in correlation with the year of the dataset.

Per IMPLAN's guidelines for conducting a multi-industry contribution analysis, commodity production coefficients were adjusted so that each examined sector produced only its primary commodity. Local use ratios (RSC) for each sector were also set to zero. This ensures that additional purchases are not made from sectors included in the analysis, as this would result in overstating the contributions of those sectors (IMPLAN, 2017c).

Employment and/or sales estimates for the analyzed sectors were used to setup activities for each specialty crop category. A scenario was then created within the software to estimate the total direct, indirect, and induced economic effects, resulting from the presence of the specialty crop industry in Arkansas during 2015.

RESULTS AND DISCUSSION

In 2015, the specialty crop sector directly contributed 19,288 jobs, \$580.7 million in labor income, and \$874.6 million in value added to Arkansas' economy. Indirect and induced economic effects produced an additional 7,848 jobs, generating \$324.0 million in labor income and \$566.2 million in value added. In total, the sector contributed 27,135 jobs, \$904.7 million in labor income and more than \$1.4 billion in value added (Table 17).

Table 17: Contribution Summary for Arkansas' Specialty Crop Industry, 2015

Contribution Type	Employment	Labor Income	Total Value Added
Direct Effect	19,288	\$580,695,020	\$ 874,628,057
Indirect Effect	2,696	\$116,370,777	\$ 204,875,760
Induced Effect	5,152	\$207,603,751	\$ 361,328,087
Total Effect	27,135	\$904,669,549	\$ 1,440,831,904

Arkansas' specialty crop industries generate employment, labor income, and value added in every sector of the economy (as defined by NAICS 2-Digit aggregation; USCB, 2014). The following sections breakdown each of these factors by NAICS sector, indicating the value that specialty crops bring to various industries throughout the state.

EMPLOYMENT

Arkansas' specialty crop industries contributed 27,135 jobs in Arkansas during 2015. Of these 27,135 jobs, 77% were generated within the following five NAICS industries: Administrative and Support and Waste Management and Remediation Services; Retail Trade; Agriculture, Forestry, Fishing and Hunting; Wholesale Trade; and Public Administration (Table 18). The Administrative and Support and Waste Management and Remediation Services sector includes the *Landscaping Services* industry which generated the greatest number of direct jobs in this study.

Table 18: Top Five NAICS Industries for Employment Generated by Specialty Crops, 2015

Industry ^a	Jobs
Administrative and Support and Waste Management and Remediation Services	11,518
Retail Trade	4,861
Agriculture, Forestry, Fishing and Hunting	2,099
Wholesale Trade	1,254
Public Administration	1,169
Top Five Total	20,900

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Includes both full-time and part-time employment

Table 19 shows how each sector was affected by the specialty crop industry through direct, indirect, and induced employment effects. As expected from table 18, Administrative and Support and Waste Management and Remediation Services contributed the largest number of jobs. It also generated an additional 486 indirect and 256 induced jobs within the various industries included under this sector. (Table 19).

The Public Administration sector, which includes government enterprises and utilities, saw the largest number of jobs generated through induced effects from the specialty crop industry. Induced effects result from the spending of labor income. As individuals spend their money within the region, this generates more local jobs. As Public Administration is primarily supported through tax dollars, it receives contributions across the board from income and sales taxes generated through wages and spending within each industry. Similarly, the Health Care and Social Assistance sector also saw a significant number of jobs generated through induced effects, as a large portion of income is commonly spent on medical, dental, day care, and other community services included under this sector (Table 19).

The total employment contribution of Arkansas' specialty crop industries is calculated by summing the direct, indirect, and induced employment effects for each industry.

Table 19: Direct, Indirect, and Induced Employment Generated by Specialty Crops, 2015

Industry ^a	Employment			
	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fishing and Hunting	1,828	252	19	2,099
Mining, Quarrying, and Oil and Gas Extraction	-	17	12	28
Utilities	-	21	20	42
Construction	-	63	183	245
Manufacturing	857	68	47	972
Wholesale Trade	1,254	-	-	1,254
Retail Trade	4,462	31	368	4,861
Transportation and Warehousing	-	386	92	478
Information	-	73	49	122
Finance and Insurance	-	207	278	485
Real Estate and Rental and Leasing	-	251	199	450
Professional, Scientific, and Technical Services	111	309	155	575
Management of Companies and Enterprises	-	114	21	136
Administrative and Support and Waste Management and Remediation Services	10,777	486	256	11,518
Educational Services	-	7	115	122
Health Care and Social Assistance	-	-	1,058	1,058
Arts, Entertainment, and Recreation	-	45	108	153
Accommodation and Food Services	-	123	616	739
Other Services (except Public Administration)	-	176	454	630
Public Administration	-	67	1,102	1,169
Totals	19,288	2,696	5,152	27,135

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Includes both full-time and part-time employment

LABOR INCOME

Arkansas' specialty crop industries contributed around \$905 million of labor income in Arkansas during 2015. Of this \$905 million, almost 70% was generated within the following five NAICS industries:

Administrative and Support and Waste Management and Remediation Services; Retail Trade; Agriculture, Forestry, Fishing and Hunting; Wholesale Trade; and Public Administration (Table 20).

Table 20: Top Five NAICS Industries for Labor Income Generated by Specialty Crops, 2015

Industry ^a	Labor Income
Administrative and Support and Waste Management and Remediation Services	\$222,915,882
Retail Trade	\$139,165,650
Agriculture, Forestry, Fishing and Hunting	\$109,192,114
Wholesale Trade	\$94,553,129
Public Administration	\$62,050,810
Top Five Total	\$627,877,585

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Presented in current (2015) dollars.

Table 21 shows how each sector was affected by Arkansas' specialty crop industry through direct, indirect, and induced labor income effects. Since the Administrative and Support and Waste Management and Remediation Services sector saw the greatest number of direct jobs, it makes sense that this sector would also show large direct contributions to labor income. Although this sector benefited the most in terms of indirect employment effects (see Table 19), the Transportation and Warehousing and Professional Scientific, and Technical Services sectors saw a greater indirect labor income benefit from Arkansas' aggregate specialty crop industry. This is likely the result of higher wages paid to employees of these industries, which would result in more labor income being generated by a smaller number of employees (Table 21).

Table 21: Direct, Indirect, and Induced Labor Income Generated by Specialty Crops, 2015

Labor Income				
Industry^a	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing and Hunting	\$101,850,328	\$6,582,523	\$759,263	\$109,192,114
Mining, Quarrying, and Oil and Gas Extraction	-	\$925,870	\$625,444	\$1,551,313
Utilities	-	\$2,437,326	\$2,088,507	\$4,525,833
Construction	-	\$2,661,000	\$7,741,772	\$10,402,772
Manufacturing	\$48,407,883	\$3,783,330	\$2,413,200	\$54,604,414
Wholesale Trade	\$94,553,129	-	-	\$94,553,129
Retail Trade	\$126,208,511	\$1,173,537	\$11,783,602	\$139,165,650
Transportation and Warehousing	-	\$19,022,075	\$4,786,811	\$23,808,886
Information	-	\$4,206,279	\$3,063,919	\$7,270,198
Finance and Insurance	-	\$11,271,760	\$13,261,211	\$24,532,971
Real Estate and Rental /Leasing	-	\$5,220,352	\$4,285,905	\$9,506,257
Professional, Scientific, and Technical Services	\$7,096,171	\$15,637,410	\$7,798,299	\$30,531,880
Management of Companies and Enterprises	-	\$13,598,786	\$2,550,744	\$16,149,530
Administrative and Support and Waste Management and Remediation Services	\$202,578,996	\$13,772,517	\$6,564,369	\$222,915,882
Educational Services	-	\$189,964	\$3,476,389	\$3,666,353
Health Care and Social Assistance	-	\$1,749	\$52,302,608	\$52,304,357
Arts, Entertainment, and Recreation	-	\$464,204	\$1,650,310	\$2,114,515
Accommodation and Food Services	-	\$2,259,424	\$11,405,533	\$13,664,957
Other Services (except Public Administration)	-	\$8,248,809	\$13,908,918	\$22,157,727
Public Administration	-	\$4,913,863	\$57,136,947	\$62,050,810
Totals	\$580,695,020	\$116,370,777	\$207,603,751	\$904,669,549

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Presented in current (2015) dollars.

As with employment, the Public Administration and Health Care and Social Assistance sectors received the greatest benefit in terms of induced labor income. These sectors generated \$57 million and \$52 million, respectively, as a result of contributions made by Arkansas' specialty crop industries. (Table 21).

VALUE ADDED

Arkansas' specialty crop industries contributed around \$1.4 billion in value added to the Arkansas economy in 2015. Of this \$1.4 billion, 67% was generated within the following five NAICS industries: Administrative and Support and Waste Management and Remediation Services; Retail Trade; Wholesale Trade; Agriculture, Forestry, Fishing and Hunting; and Real Estate and Rental and Leasing (Table 22).

Table 22: Top Five NAICS Industries for Value Added Generated by Specialty Crops, 2015

Industry ^a	Value Added
Administrative and Support and Waste Management and Remediation Services	\$290,195,653
Retail Trade	\$227,499,092
Wholesale Trade	\$210,943,707
Agriculture, Forestry, Fishing and Hunting	\$124,355,995
Real Estate and Rental and Leasing	\$113,119,294
Top Five Total	\$966,113,741

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Presented in current (2015) dollars.

Table 23 shows how each sector was affected by Arkansas' specialty crop industry through direct, indirect, and induced value added effects. As with employment and labor income, the Administrative and Support and Waste Management and Remediation Services sector also saw the highest total value added. Although this sector had the largest total value added, when examining the distribution of indirect and induced values, other sectors appeared to have a higher percentage of their impacts falling within these areas. Specifically, the Real Estate and Rental and Leasing; Transportation and Warehousing; Finance and Insurance; and Professional, Scientific, and Technical Services sectors, each receiving an indirect benefit of \$34.9 million, \$26.2 million, \$20.4 million, and \$19.9 million, respectively (Table 23).

The Real Estate and Rental and Leasing sector benefitted the most from value added induced effects (\$78 million). Value added induced effects include the combined induced effects from labor income, other property type income and indirect business taxes and are generated by the spending of proprietors and employees of specialty crop and backward linked industries. The *Real Estate and Rental and Leasing* sector benefitted greatly from the value added to other property-type income and indirect business taxes. A large share (over 35%) of the value added induced effects also benefitted the Public Administration and Health Care and Social Assistance sectors. These sectors gained an estimated \$68.8 million and \$58.9 million respectively.

Table 23: Direct, Indirect, and Induced Value Added Generated by Specialty Crops, 2015

Total Value Added				
Industry^a	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fishing and Hunting	\$114,598,179	\$8,849,297	\$908,518	\$124,355,995
Mining, Quarrying, and Oil and Gas Extraction	-	\$1,619,013	\$1,157,757	\$2,776,770
Utilities	-	\$7,594,972	\$6,307,492	\$13,902,464
Construction	-	\$3,644,759	\$10,593,979	\$14,238,738
Manufacturing	\$73,714,823	\$8,327,099	\$5,422,233	\$87,464,154
Wholesale Trade	\$210,943,707	-	-	\$210,943,707
Retail Trade	\$205,162,604	\$1,905,548	\$20,430,941	\$227,499,092
Transportation and Warehousing	-	\$26,167,307	\$6,551,550	\$32,718,857
Information	-	\$15,303,349	\$17,965,827	\$33,269,176
Finance and Insurance	-	\$20,411,389	\$23,749,526	\$44,160,915
Real Estate and Rental and Leasing	-	\$34,899,996	\$78,219,297	\$113,119,294
Professional, Scientific, and Technical Services	\$7,086,068	\$19,927,827	\$9,544,139	\$36,558,034
Management of Companies and Enterprises	-	\$16,545,237	\$3,103,414	\$19,648,651
Administrative and Support and Waste Management and Remediation Services	\$263,122,676	\$18,211,680	\$8,861,297	\$290,195,653
Educational Services	-	\$217,646	\$4,003,481	\$4,221,127
Health Care and Social Assistance	-	\$1,941	\$58,880,475	\$58,882,415
Arts, Entertainment, and Recreation	-	\$776,490	\$3,042,792	\$3,819,282
Accommodation and Food Services	-	\$3,445,938	\$17,339,051	\$20,784,989
Other Services (except Public Administration)	-	\$10,967,177	\$16,397,168	\$27,364,345
Public Administration	-	\$6,059,094	\$68,849,153	\$74,908,246
Totals	\$874,628,057	\$204,875,760	\$361,328,087	\$1,440,831,904

^a Based on 2-Digit NAICS aggregation (USCB, 2014)

Source: IMPLAN (2017).

Note: Presented in current (2015) dollars.

CONCLUSIONS

This study suggests that the specialty crop industry is a valuable segment of the Arkansas economy. Not only does it provide over 19,000 jobs and nearly \$874 million in value directly, through its indirect and induced effects, it generates jobs, labor income and value in nearly every 2-digit NAICS sector in the state. Its total contribution to the state in 2015 consisted of over 27,000 jobs, \$904 million in labor income and \$1.4 billion in value added. Moreover, as some business owners generate sales across state borders, they contribute to the jobs, labor income and value added in those states as well.

Like all industries, the specialty crop industry faces challenges. Although challenges differ between the various types of specialty crop firms, net returns or profit margins were of high concern in almost every industry. A major factor driving profitability concerns is increasing and/or understanding business costs. Advances in understanding the use of different production systems and/or technology to reduce costs or gain production efficiencies can help reduce this industry burden. Additionally, specialty crop business owners in production and processing continue to struggle with the changing regulatory environment and associated costs.

Another challenge identified by producers was marketing opportunities. The majority of specialty crops produced by Arkansas farmers were sold in state, with most being sold through farmers markets or other local retail outlets. As most of these businesses were small (<\$10,000 annually in sales), size could be a hindrance to entrance into broader markets. To address these challenges, efforts can be made to assist specialty crop businesses to grow, diversify and market more extensively, both in and out of the state. Additionally, enhancing the availability and use of value added processing can be strategy to aid entrepreneurial development. Sector participants often highlight a lack of post-harvest handling and processing infrastructure as a business hurdle to expansion. Since most entities are small businesses, cooperative business models should be explored to aid business growth strategies. Growth leading to higher out of state sales would bring more dollars into the region, amplifying the economic contribution of the sector.

As the Internet was identified as the most broadly used resource by specialty crop managers to obtain business information, it could be worthwhile for agencies to ensure that resources are developed with

this aspect in mind. Efforts to understand how businesses use the internet and to enhance social media strategies can enhance firm marketing efforts.

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APPENDIX A: QUESTIONNAIRES DISTRIBUTED TO SPECIALTY CROP FIRMS

SPECIALTY CROP SURVEY OF FRUIT, VEGETABLE, NUT, HERB, AND CUT FLOWER PRODUCTION



**Specialty Crop Survey
of Fruit, Vegetable, Nut, Herb and Cut Flower Production**

1. Does your farm operation involve the production of fruit, vegetable, nut, herbs, or cut flowers?

Yes No

If you checked "Yes" please continue to item 2. (Please note some questions below may also address cut flowers.) If you checked "No" do not complete the survey. Stop and return the Survey. You will be removed from the mailing list. Thanks for your time.

2. In what county(s) is your operation located?

County: _____ County: _____
Primary *Secondary*

3. How many years has your operation produced fruits, vegetables, nuts, herbs and cut flowers?

	Years		Years
Fruit		Herbs	
Vegetables		Cut flowers	
Nuts			

4. Your farm operation is classified as a:

Sole proprietorship Partnership Limited Liability Company (LLC) Corporation
 Other (please explain) _____

5. If you produce fruit or nut crops indicate your total acres (enter to the nearest tenth acre) devoted to each crop; otherwise go to the next question. Please specify the names of the other fruits or nut crops in addition to the acreage.

Fruit	Acreage	Fruit	Acreage	Nuts	Acreage
Apples		Nectarines		Walnuts	
Blackberries		Peaches		Other:	
Blueberries		Raspberries		Other:	
Grapes (Table)		Strawberries		Other:	
Grapes (Wine)		Peanuts		Other:	
Muscadine		Pecans		Other:	

6. If you produce vegetables, indicate your total acres (enter to the nearest tenth acre) devoted to each crop; otherwise go to the next question. Please specify the names of the other vegetables in addition to the acreage.

Crop	Acreage	Crop	Acreage	Crop	Acreage
Beets		Melons		Tomatoes	
Broccoli		Okra		Turnips	
Cabbage		Peppers		Winter squash	
Cucumbers		Pumpkins		Other:	
Eggplant		Southern peas		Other:	
Green beans		Summer squash		Other:	
Greens & spinach		Sweet corn		Other:	
Irish potatoes		Sweet potatoes		Other:	

7. If you produce cut flowers or herbs, please indicate your total acres (enter to the nearest tenth acre) devoted to cut flowers and herbs. Otherwise go to the next question.

Crop	Acreage	Crop	Acreage
Cut flower		Herbs	

8. What percentage, of the crops that you produce is grown using the following methods? (Each column should sum to 100%). Please place a 0 in the cells of the things you do not produce.

Methods	Fruit	Vegetable	Nut	Herb	Cut Flower
High Tunnel	%	%	%	%	%
Low Tunnel	%	%	%	%	%
Green house	%	%	%	%	%
Open Field	%	%	%	%	%
TOTAL	(100%)	(100%)	(100%)	(100%)	(100%)

9. Which statement best describes your production practices? (Select all that apply)

- Conventional
- Certified Organic
- Certified Naturally Grown
- Transitioning to organic
- Use organic practices, but not pursuing certification
- Mostly organic practices with occasional non-organic inputs
- Mostly conventional practices with occasional non-chemical practices

10. Do you use cover crops on your farm?

- Yes. If yes, on what percentage of your acreage do you use cover crops? _____%
- No, but interested in trying them
- No, and not interested in trying

11. For the fruit, vegetable, nut, herb and cut flower crops you produced in items 5, 6, and 7 what was the value of total sales in 2014. (Please note that any items you processed before selling should not be included in these values, they will be addressed in question 14.) Additionally what is the percent (%) of sales through the following outlets? Each column should sum to 100% for all of your business' outlets.

Total Sales (\$)	Fruit	Vegetables	Nuts	Herbs	Cut flowers
Total Value of Sales (\$)	\$	\$	\$	\$	\$
Sales by Outlet (%)					
Farmer's Market	%	%	%	%	%
Internet	%	%	%	%	%
Mail order	%	%	%	%	%
Retail (U-pick, farmer stand, etc.)	%	%	%	%	%
Wholesale sales	%	%	%	%	%
Community Supported Agriculture (CSA)	%	%	%	%	%
Other (specify):	%	%	%	%	%
TOTAL	(100%)	(100%)	(100%)	(100%)	(100%)

12. Indicate the approximate percent (%) of your operation's sales volume from item 11 that is derived from the following sources. Each column should sum to 100% for all of your business' outlets.

Sources (%)	Fruit Sales	Vegetable Sales	Nut Sales	Herb Sales	Cut flower Sales
In State	%	%	%	%	%
Out of State	%	%	%	%	%
Total	(100%)	(100%)	(100%)	(100%)	(100%)

13. Do you engage in on farm processing or value added activities?

Yes (Continue with 14) No (Skip to 15)

14. For the fruit, vegetable, nut, herb and cut flower crops you processed what was the value of total sales in 2014. Additionally what is the percent (%) of sales through the following outlets? Each column should sum to 100% for all of your business' outlets.

Total Sales (\$)	Fruit	Vegetables	Nuts	Herbs	Cut flowers
Total Value of Sales (\$)	\$	\$	\$	\$	\$
Sales by Outlet (%)					
Farmer's Market	%	%	%	%	%
Internet	%	%	%	%	%
Mail Order	%	%	%	%	%
Retail (u-pick, farmer stand, etc.)	%	%	%	%	%
Wholesale sales	%	%	%	%	%
Community Supported Agriculture (CSA)					
Other (specify):	%	%	%	%	%
TOTAL	(100%)	(100%)	(100%)	(100%)	(100%)

15. Indicate primary approach used to negotiate wholesale sales contracts. (Check one.)

- You directly negotiate. You utilize agent or representative. No wholesale sales.

16. For the following periods, compare your 2014 sales to your 2013 sales level and report as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% from 2013 sales then report 120%.

2014 sales relative to 2013: _____

17. What are the greatest challenges facing your business? Please indicate the importance of the challenges using the following scale:

	Not applicable	Not important	Somewhat important	Important
Marketing opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues acquiring/retaining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High tunnel/season extension training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food safety/GAPS training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on post-harvest handling and cold storage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on organic certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of knowledge of Production/Cultivation Practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production cost analysis information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water problems availability/quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post-harvest handling/cold storage training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language barriers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GAPS or Food Safety training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on season extension and/or high tunnels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry Seminar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Do you have full time employees for your operation?

Yes No If yes, how many? _____

Do you have seasonal/part-time employees for your operation?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program?)

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

____ % full time ____ % part time/seasonal

20. Please tell us the value of the 2014 annual wages and salaries excluding benefits paid for your operation's employees. \$ _____

21. Please complete the following information about the primary operator:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

THANKS FOR YOUR TIME IN ASSISTING WITH THIS SURVEY!!

The University of Arkansas Division of Agriculture offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

SPECIALTY CROP SURVEY OF FRUIT, VEGETABLE, NUT, HERB, AND CUT FLOWER PROCESSING



Specialty Crop Survey of Fruit, Vegetable, Nut and Herb Processing and Sales

1. Does your business involve processing & sales of fruit, vegetable, nut, and/or herbs?

Yes No

If you checked "Yes" please continue to item 2. If you checked "No" do not complete the survey. Stop and return the Survey. You will be removed from the mailing list. Thanks for your time.

2. In what county(s) is your business located?

County: _____ County: _____
Primary Secondary

3. How many years has your business processed/sold fruit, vegetables, nut, or herbs?

	Years		Years
Fruit		Nut	
Vegetables		Herbs	

4. Your business is classified as:

Sole proprietorship Partnership Limited Liability Company (LLC) Corporation
 Other (please explain) _____

5. Please, indicate the value of total sales in 2014. Additionally, what is the percent (%) of sales through the following outlets? Each column should sum to 100% for all of your business' outlets.

Total Sales (\$)	Fruit	Vegetables	Nuts	Herbs	Cut flowers
Total Value of Sales (\$)	\$	\$	\$	\$	\$
Sales by Outlet (%)	Fruit	Vegetables	Nuts	Herbs	Cut flowers
Farmer's Market	%	%	%	%	%
Internet	%	%	%	%	%
Mail order	%	%	%	%	%
Retail (U-pick, farmer stand, etc.)	%	%	%	%	%
Wholesale sales	%	%	%	%	%
Community Supported Agriculture (CSA)	%	%	%	%	%
Other (specify):	%	%	%	%	%
TOTAL	(100%)	(100%)	(100%)	(100%)	(100%)

6. Indicate the approximate percent (%) of your business' sales volume that is derived from the following sources. Each column should sum to 100% for all of your business' outlets.

Sources (%)	Fruit Sales	Vegetable Sales	Nut Sales	Herb Sales
In State	%	%	%	%
Out of State	%	%	%	%
Total	(100%)	(100%)	(100%)	(100%)

7. Indicate primary approach used to negotiate wholesale sales contracts. Check one.

- You directly negotiate. You utilize agent or representative. No wholesale sales.

8. For the following periods, compare your 2014 sales to your 2013 sales level and report as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% from 2013 sales then report 120%.

2014 sales relative to 2013: _____

9. What are the greatest challenges facing your business? Please indicate the importance of the areas using the following scale:

	Not applicable	Not important	Somewhat Important	Important
Marketing opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues acquiring/retaining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water problems availability/quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply of Horticultural Products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry Seminar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Do you have full time employees for your operation?

Yes No If yes, how many? _____

Do you have seasonal/part-time employees for your operation?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program)?

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

___ % full time ___ % part time/seasonal

12. If your firm is only involved in processing, what percent (%) of horticultural raw products are purchased from Arkansas producers? _____ %.

13. Please tell us the value of the 2014 annual wages and salaries excluding benefits paid for your operation's employees. \$ _____

14. Please complete the following information about the business owner:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

THANKS FOR YOUR TIME IN ASSISTING WITH THIS SURVEY!!!

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If business has multiple locations, please indicate the number of distinct stores/farms/offices in the state along with the city and state of the headquarters location.

Total stores/farms/offices: _____

Headquarter location city: _____

Headquarter State: _____

3. How many years has your business been involved with horticultural sales, service and production?

Sales: ____Years

Service: ____Years

Production: ____ Years

4. Your business is classified as:

Sole proprietorship Partnership Limited Liability Company (LLC) Corporation

Other (please explain) _____

5. Which products and/or services does your business provide? (Select all that apply)

Nursery production

Greenhouse production

Arborist (tree removal/pruning)

Garden Center

Landscape installation/maintenance

Florist

Irrigation installation

Other (specify) _____

6. Sales & service businesses only (producers skip this question).

What percentage of the following plant categories were purchased from Arkansas producers in 2014?

	Percent
Annuals	%
Perennials	%
Woody Ornamentals	%
Fruit plants	%

7. Producers only.

If your business activity involves nursery production, please, indicate the production area for each of the following; otherwise go to the next question. Additionally, what was the percent (%) of production in 2014 using the following methods? Each row should sum to 100%.

Level of Production		Percentage of Production by Method		
		Containers	B&B	BR
Trees	_____ Acres	%	%	%
Shrubs	_____ Acres	%	%	%
Ground Covers	_____ Sq. ft.	%	%	%
Perennials	_____ Sq. ft.	%	%	%
Liners	_____ Sq. ft.	%	%	%

8. Producers only.

If your business activity involves greenhouse production, please, indicate the production area for the following types of plants; otherwise go to the next question. Additionally, what was the percent (%) of production in 2014 using the following methods? Each row should sum to 100%.

Level of production (in sq. ft.)		Percentage of production by method	
		Under glass or poly	Outdoor Beds
Cut flowers	_____ Sq. ft.	%	%
Potted plants	_____ Sq. ft.	%	%
Annuals	_____ Sq. ft.	%	%
Perennials	_____ Sq. ft.	%	%
Mums	_____ Sq. ft.	%	%

9. Producers only.

For the crops you produce in items 7 and 8, what percentage (%) of your 2014 annual gross revenue was from the following outlets? Totals must sum to 100%.

<u>Sales by Outlet (%)</u>	<u>Percent</u>
Farmers markets	%
Internet/mail order	%
Retail	%
Wholesale	%
Re-wholesale	%
Other (specify):	%
Total	100%

10. The question is divided into:

- a) Services
- b) Sales
- c) Production

Please answer the one(s) that is (are) related to your business.

a) Services only.

What percent (%) of your 2014 annual gross revenue is derived from following sources? Totals must sum to 100%.

<u>Sources</u>	<u>Percent (%)</u>
Residential	%
Commercial	%
Municipal (public agencies)	
Total	100%

<u>Sources</u>	<u>Percent (%)</u>
In-state	%
Out-of-state	%
Total	100%

b) Sales only.

What percent (%) of your 2014 annual gross revenue is derived from following sources? Totals must sum to 100%.

<u>Sources</u>	<u>Percent (%)</u>
Residential	%
Commercial	%
Municipal (public agencies)	
Total	100%

<u>Sources</u>	<u>Percent (%)</u>
In-state	%
Out-of-state	%
Total	100%

c) Production only.

What percent (%) of your 2014 annual gross revenue is derived from following sources? Totals must sum to 100%.

<u>Sources</u>	<u>Percent (%)</u>
Residential	%
Commercial	%
Municipal (public agencies)	
Total	100%

<u>Sources</u>	<u>Percent (%)</u>
In-state	%
Out-of-state	%
Total	100%

11. Indicate primary approach used to negotiate wholesale sales contracts. (Check one.)

- You directly negotiate You utilize agent or representative No wholesales

12. Compare your 2014 to your 2013 sales. Report your 2014 sales as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% over 2013 sales, then report 120%.

2014 sales relative to 2013: _____

13. What are the greatest challenges facing your business? Please indicate the importance of the challenges using the following scale:

	Not applicable	Not important	Somewhat important	Important
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost of supplies, inputs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues (acquiring/retaining)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing information or training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production cost analysis information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production/cultivation practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply or quality of locally produced hort products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water problems (availability/quality)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business Contacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Did you have full time employees in 2014?

Yes No If yes, how many? _____

Did you have seasonal/part-time employees in 2014?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program?)

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

____ % full time ____ % part time/seasonal

16. What was the 2014 gross annual revenue from horticultural products/services for your business?

Gross annual revenue (\$): _____

17. What percentage of your 2014 gross annual revenue was from sales, services and production?
Totals must sum to 100%.

	Percentage (%)
Ornamental Sales	%
Ornamental Service	%
Ornamental Production	%
Total	100%

18. What was the total 2014 annual wages and salaries, excluding benefits, paid for all of your employees?

\$ _____

19. What was the percent (%) of total 2014 annual wages and salaries, excluding benefits, devoted to each of the following activities? The percentages should sum to 100%.

	Annual Salary Spent (excluding benefits)
Production (fieldwork, greenhouse, nursery, etc.)	%
Services (consulting, landscaping, etc.)	%
Sales (retail/wholesale sales)	%
Total	100%

20. Please complete the following information about the business owner/manager:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

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SPECIALTY CROP SURVEY OF TURF PRODUCTION



Specialty Crop Survey of Turf Production

1. Does your business involve sod production?

Yes No

If you checked "Yes" please continue to item 2. If you checked "No" do not complete the survey. Stop and return the Survey. You will be removed from the mailing list. Thanks for your time.

2. In what county(s) is your business located?

County: _____ County: _____
Primary Secondary

3. Number of years your business has produced sod. _____ Years

4. Your business is classified as:

Sole proprietorship Partnership Limited Liability Company (LLC) Corporation
 Other (please explain) _____

5. Please indicate the level of turf grass production (in acres) for your business:

Production	
Sod	Acres
Sprigs	Acres
Seed	Acres

Types of Turf	
Tall Fescue	Acres
Bermudagrass	Acres
Centipede	Acres
Zoysiagrass	Acres
St. Augustine	Acres
Other (Specify)	Acres

6. What is the % of sales for your business through the following outlets? Total should sum to 100% for all outlets.

Retail sales	%
Wholesale sales	%
Other (specify)	%
Total	(100%)

7. Indicate the approximate percent (%) of your business' sales volume that is derived from the following sources.

Sources (%)	
Golf	%
Residential	%
Commercial	%
Municipals (public agencies)	%
Total	(100%)

Sources (%)	
In-state	%
Out-of-state	%
Total	(100%)

8. Indicate primary approach used to negotiate wholesale sales contracts. Check one.

- You directly negotiate.
 You utilize agent or representative.
 No wholesale sales.

9. For the following periods, compare your 2014 sales to your 2013 sales level and report as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% from 2013 sales then report 120%.

2014 sales relative to 2013: _____

10. What are the greatest business challenges facing your business? Please indicate the importance of the areas using the following scale:

	Not Applicable	Not Important	Somewhat Important	Important
Marketing information or training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues (acquiring/retaining)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water problems (availability or quality)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business operating expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemical/fertilizer expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business Contacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Do you have full time employees for your operation?

Yes No If yes, how many? _____

Do you have seasonal/part-time employees for your operation?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program)?

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

____ % full time _____ % part time/seasonal

13. Please tell us the value of the 2014 annual wages and salaries excluding benefits paid for your operation's employees. \$ _____

14. Please complete the following information about the grounds manager:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

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SPECIALTY CROP SURVEY OF BEEKEEPERS AND HONEY PRODUCTION



Specialty Crop Survey of Bee Keepers and Honey Production

1. Does your farm operation involve bee keeping and honey production?

- Yes No

If you checked "Yes" please continue to item 2. If you checked "No" do not complete the survey. Stop and return the Survey. You will be removed from the mailing list. Thanks for your time.

2. In what county(s) is your operation located?

County: _____ County: _____
Primary Secondary

3. How many years has your operation produced honey and related products?

Honey and related products: _____ years

4. Your farm operation is classified as a:

- Sole proprietorship Partnership Limited Liability Company (LLC) Corporation
 Other (please explain) _____

5. If your operation produces honey, beeswax, or pollen, please indicate:

a. Total number of bee colonies and your total annual production (in pounds).

Number of bee colonies: _____

Production	In Pounds
Honey	
Beeswax	
Pollen	

b. Additionally, list other beehive-based products (creamed honey, candles, cosmetics, lotions, soaps, etc.) that your operation produces for sale.

Creamed honey	<input type="checkbox"/> Yes <input type="checkbox"/> No
Candles	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cosmetics	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lotions	<input type="checkbox"/> Yes <input type="checkbox"/> No
Soaps	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No

6. For the honey and related products you produced in item 5:

a. What was the value of total sales in 2014?

Products	Total Value of Sales
Honey	\$
Creamed honey	\$
Candles	\$
Cosmetics	\$
Lotions	\$
Soaps	\$
Other:	\$
Other:	\$
Other:	\$

b. Additionally, what is the percent (%) of sales through the following outlets? Each column should sum to 100% for all of your business' outlets.

Sales by Outlet (%)	Honey/related products
Farmer's Market	%
Internet	%
Mail order	%
Retail (U-pick, farmer stand, etc.)	%
Wholesale sales	%
Community Supported Agriculture (CSA)	%
Other (specify):	%
TOTAL	100%

7. Indicate the approximate percent (%) of your operation's sales volume from item 6b that is derived from the following sources. Each column should sum to 100% for all of your business' outlets.

Sources (%)	Honey/related products
In State	%
Out of State	%
Total	100%

8. Indicate primary approach used to negotiate wholesale sales contracts. (Check one.)

You directly negotiate. You utilize agent or representative. No wholesale sales.

9. For the following periods, compare your 2014 sales to your 2013 sales level and report as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% from 2013 sales then report 120%.

2014 sales relative to 2013: _____

10. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry Seminar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. What are the greatest challenges facing your business? Please indicate the importance of the challenges using the following scale:

	Not applicable	Not important	Somewhat important	Important
Marketing opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues acquiring/retaining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food safety/GAPS training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production cost analysis information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language barriers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Do you have full time employees for your operation?

Yes No If yes, how many? _____

Do you have seasonal/part-time employees for your operation?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program?)

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

___ % full time ___ % part time/seasonal

13. Please tell us the value of the 2014 annual wages and salaries excluding benefits paid for your operation's employees. \$ _____

14. Please complete the following information about the primary operator:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

Further, if you produce specialty crops (such as fruits and vegetables) and are willing to tell us about that part of your operation, please send an email to CARS@uark.edu or jhpopp@uark.edu and we will send you that survey as well.

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Specialty Crop Survey of Future Bee Keepers

1. When do you plan to begin keeping bees?
 - Recently started
 - Within the next year
 - Within 2-3 years
 - Within 4-5 years
 - More than 5 years from now
 - Not sure

2. When you do start bee keeping, what type of operation do you plan to run?
 - Sole proprietorship
 - Partnership
 - Limited Liability Company (LLC)
 - Corporation
 - Member Owned
 - Hobby
 - Other (please explain) _____

3. Do you intend to sell honey or other products produced through bee keeping?
 - Yes
 - No
 - Maybe

- 4a. If you answered "Yes" to question 3, what method(s) will you use to sell your products?
(select all that apply)
 - Farmer's Market
 - Internet
 - Mail Order
 - Retail (on-farm, farmer stand, etc)
 - Wholesale Sales
 - Community Supported Agriculture (CSA)
 - Other (please specify) _____

- 4b. What will your bees primarily be used for? (choose only one)
 - Production of bee products for sale to consumers
 - Production of bee products to give to family and friends
 - Production of bee products for personal use
 - Pollination only
 - Other (please specify) _____

5. Please complete the following demographic information about the primary beekeeper:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

Further, if you produce specialty crops (such as fruits and vegetables) and are willing to tell us about that part of your operation, please send an email to CARS@uark.edu or jhpopp@uark.edu and we will send you that survey as well.

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SPECIALTY CROP SURVEY OF GOLF COURSE MANAGEMENT



Specialty Crop Survey of Golf Course Management

1. Does your business maintain a golf course?

Yes No

If you checked "Yes" please continue to item 2. If you checked "No" do not complete the survey. Stop and return the Survey. You will be removed from the mailing list. Thanks for your time.

2. In what county(s) is your business located?

County: _____ County: _____
Primary Secondary

3. Number of years your business has maintained golf courses. _____ Years

4. Your business is classified as a:

Sole proprietorship Partnership Limited Liability Company (LLC) Corporation
 Member Owned Other (please explain) _____

5. Please indicate how often you utilize the following businesses/organizations for your business information using the following scale:

	Never	Sometimes	Regularly
Trade Publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional Assoc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Consultants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Business Contacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University and/or Cooperative Extension Service workshops and publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. What are the greatest business challenges facing your business? Please indicate the importance of the areas using the following scale:

	Not applicable	Not important	Somewhat important	Important
Marketing information or training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training for your employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business competition, changing market structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Labor issues (acquiring/retaining)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net return or profit margin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment selection/utilization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply/Quality of Turf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Input Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on business management or record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemicals/Fertilizer Expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water problems availability/quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify): _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What was the value of total maintenance costs in 2014? Additionally, what percentage of your total 2014 golf maintenance budget was devoted to the following categories?

Total Maintenance (\$)	
Total Value of Maintenance (\$)	\$
Maintenance by Category (%)	
Salaries and labor	%
Fertilizer and Chemical	%
Soil Amendments (including top-dressing sand)	%
Small Equipment / Tools	%
Equipment maintenance (fuel, fluids, repair, replacement...)	%
Office Supplies	%
Irrigation costs and maintenance	%
Utility costs	%
Landscape materials and maintenance	%
Seed or sod	%
Other (specify):	%
Other (specify):	%
TOTAL	100%

8. What was the total dollar value of capital improvements undertaken in 2014? \$ _____

9. If this golf course is a daily fee course, compare your 2014 sales to your 2013 sales level and report as a percent of your 2013 sales. For example, if 2014 sales were down 10% from 2013, then report 90% for 2014. Likewise, if your 2014 sales were up 20% from 2013 sales then report 120%.

2014 sales relative to 2013: _____

10. Do you have full time employees for your operation?

Yes No If yes, how many? _____

Do you have seasonal/part-time employees for your operation?

Yes No If yes, how many? _____

Do you participate in H2A or H2s (the Guest Worker Program?)

Yes No

If yes, what percent of your labor comes from the Guest Worker Program?

___ % full time ___ % part time/seasonal

11. Please tell us the value of the 2014 annual wages and salaries excluding benefits paid for your operation's employees. \$ _____

12. How many holes are on the golf course(s)?

Course 1	_____ holes	Course 2	_____ holes	Course 3	_____ holes
----------	-------------	----------	-------------	----------	-------------

13. If this course is a daily fee course, how many rounds of golf are played per year across all of your golf courses?

Course 1	_____ rounds	Course 2	_____ rounds	Course 3	_____ rounds
----------	--------------	----------	--------------	----------	--------------

14. If this golf course is a daily fee course, what is the weekday greens fee for 18 holes?

	With cart	Without a cart
Course 1	\$ _____	\$ _____
Course 2	\$ _____	\$ _____
Course 3	\$ _____	\$ _____

15. If this golf course is a membership-based golf course, what is the monthly membership fee? Additionally, how many members do you currently have?

	Monthly membership fee	Number of members
Course 1	\$ _____	_____
Course 2	\$ _____	_____
Course 3	\$ _____	_____

16. What was the approximate total construction cost for the golf course?

	Total construction cost
Course 1	\$ _____
Course 2	\$ _____
Course 3	\$ _____

17. In what year was the golf course constructed?

	Year
Course 1	_____
Course 2	_____
Course 3	_____

18. Is the golf course affiliated with a residential development/community? If yes, how many residential units are associated with the golf course?

		Number of residential units
Course 1	Yes <input type="checkbox"/> No <input type="checkbox"/>	Units
Course 2	Yes <input type="checkbox"/> No <input type="checkbox"/>	Units
Course 3	Yes <input type="checkbox"/> No <input type="checkbox"/>	Units

19. Please complete the following information about the grounds manager:

Age range: < 25 25-34 35-44 45-54 55-64 65+

Gender: Male Female

Race: Caucasian Black Asian American Indian

Hispanic: Yes No

Education level: Some H.S. H.S. Vo-tech Some College BA/BS MA/MS PhD

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APPENDIX B: IMPORTANCE OF CHALLENGES FACED BY SPECIALTY CROP PRODUCERS

TABLE B1: IMPORTANCE OF CHALLENGES FOR FRUIT, VEGETABLE, NUT, HERB, AND CUT FLOWER PRODUCERS

Challenges	# of Responses	Not Applicable	Not Important	Somewhat Important	Important
Net return or profit margin	120	5.8%	6.7%	30.8%	56.7%
Marketing opportunities	120	10.0%	13.3%	26.7%	50.0%
Government regulations	116	13.8%	20.7%	22.4%	43.1%
Food safety/GAPS training	114	23.7%	16.7%	26.3%	33.3%
Water problems availability/quality	119	12.6%	20.2%	34.5%	32.8%
Labor issues acquiring/retaining	118	28.8%	15.3%	23.7%	32.2%
Production cost analysis information	118	13.6%	15.3%	39.0%	32.2%
Post-harvest handling/cold storage training	118	23.7%	23.7%	21.2%	31.4%
Utility expenses	117	15.4%	28.2%	31.6%	24.8%
Transportation expenses	119	23.5%	27.7%	25.2%	23.5%
Equipment selection/utilization	119	15.1%	21.0%	41.2%	22.7%
GAPS or Food Safety training	116	25.9%	21.6%	30.2%	22.4%
Training on post-harvest handling and cold storage	117	33.3%	20.5%	23.9%	22.2%
Training on business management or record keeping	118	17.8%	30.5%	31.4%	20.3%
Lack of knowledge of Production/Cultivation Practices	117	22.2%	26.5%	33.3%	17.9%
Training for your employees	116	38.8%	19.8%	26.7%	14.7%
Business competition, changing market structure	117	14.5%	32.5%	39.3%	13.7%
High tunnel/season extension training	115	44.3%	25.2%	18.3%	12.2%
Training on season extension and/or high tunnels	116	36.2%	27.6%	24.1%	12.1%
Training on organic certification	117	43.6%	29.1%	16.2%	11.1%
Language barriers	117	47.9%	30.8%	15.4%	6.0%

TABLE B2: IMPORTANCE CHALLENGES FOR FRUIT, VEGETABLE, NUT, HERB, AND CUT FLOWER PROCESSORS

Challenges	# of Responses	Not Applicable	Not Important	Somewhat Important	Important
Net return or profit margin	4	0.0%	0.0%	0.0%	100.0%
Marketing opportunities	4	0.0%	25.0%	25.0%	50.0%
Business competition, changing market structure	4	0.0%	25.0%	25.0%	50.0%
Labor issues acquiring/retaining	4	25.0%	25.0%	0.0%	50.0%
Production expenses	4	0.0%	0.0%	50.0%	50.0%
Water problems availability/quality	3	0.0%	66.7%	0.0%	33.3%
Government regulations	4	0.0%	25.0%	50.0%	25.0%
Equipment selection/utilization	4	0.0%	25.0%	50.0%	25.0%
Transportation expenses	4	0.0%	25.0%	50.0%	25.0%
Supply of hort. Products	4	25.0%	0.0%	50.0%	25.0%
Training for your employees	4	25.0%	50.0%	25.0%	0.0%
Training on business management or record keeping	4	0.0%	25.0%	75.0%	0.0%

TABLE B3: IMPORTANCE OF CHALLENGES FOR ORNAMENTAL PRODUCTION, SALES, AND SERVICE FIRMS

Challenges	# of Responses	Not Applicable	Not Important	Somewhat Important	Important
Net return or profit margin	91	1.1%	5.5%	26.4%	67.0%
Input Costs	90	4.4%	0.0%	33.3%	62.2%
Labor costs	89	10.1%	4.5%	36.0%	49.4%
Labor issues acquiring/retaining	89	14.6%	12.4%	27.0%	46.1%
Transportation expenses	90	4.4%	13.3%	36.7%	45.6%
Business competition, changing market structure	88	4.5%	12.5%	39.8%	43.2%
Supply of hort. Products	89	19.1%	24.7%	20.2%	36.0%
Government regulations	89	13.5%	18.0%	40.4%	28.1%
Utility expenses	89	10.1%	25.8%	36.0%	28.1%
Training for your employees	90	15.6%	22.2%	34.4%	27.8%
Training on business management or record keeping	89	12.4%	25.8%	37.1%	24.7%
Equipment selection/utilization	87	10.3%	28.7%	40.2%	20.7%
Marketing information or training	90	14.4%	24.4%	41.1%	20.0%
Production/cultivation practices	86	31.4%	20.9%	31.4%	16.3%
Water problems availability/quality	89	16.9%	40.4%	27.0%	15.7%
Production cost analysis information	86	26.7%	15.1%	46.5%	11.6%

TABLE B4: IMPORTANCE OF CHALLENGES FOR TURF PRODUCERS

Challenges	# of Responses	Not Applicable	Not Important	Somewhat Important	Important
Chemical/fertilizer expenses	13	7.7%	7.7%	15.4%	69.2%
Business operating expenses	12	8.3%	0.0%	25.0%	66.7%
Net return or profit margin	12	8.3%	0.0%	33.3%	58.3%
Transportation expenses	12	8.3%	8.3%	25.0%	58.3%
Business competition, changing market structure	11	9.1%	9.1%	27.3%	54.5%
Government regulations	12	25.0%	16.7%	16.7%	41.7%
Labor issues acquiring/retaining	13	15.4%	15.4%	30.8%	38.5%
Water problems availability/quality	13	23.1%	23.1%	15.4%	38.5%
Equipment selection/utilization	12	16.7%	16.7%	33.3%	33.3%
Marketing opportunities	11	27.3%	27.3%	27.3%	18.2%
Training on business management or record keeping	11	27.3%	9.1%	45.5%	18.2%
Training for your employees	12	16.7%	16.7%	58.3%	8.3%

TABLE B5: IMPORTANCE OF CHALLENGES FOR BEEKEEPERS AND HONEY PRODUCERS

Challenges	# of Responses	Not Important	Somewhat Important	Important
Net return or profit margin	84	17.9%	32.1%	50.0%
Government regulations	89	31.5%	28.1%	40.4%
Equipment selection/utilization	94	12.8%	52.1%	35.1%
Marketing opportunities	73	37.0%	30.1%	32.9%
Production cost analysis information	84	32.1%	36.9%	31.0%
Food safety/GAPS training	76	32.9%	38.2%	28.9%
Training on business management or record keeping	76	50.0%	26.3%	23.7%
Utility expenses	77	44.2%	33.8%	22.1%
Transportation expenses	73	54.8%	26.0%	19.2%
Labor issues acquiring/retaining	31	77.4%	6.5%	16.1%
Training for your employees	28	71.4%	14.3%	14.3%
Business competition, changing market structure	55	49.1%	43.6%	7.3%
Language barriers	36	86.1%	11.1%	2.8%

TABLE B6: IMPORTANCE OF CHALLENGES FOR GOLF COURSE MANAGERS

Challenges	# of Responses	Not Applicable	Not Important	Somewhat Important	Important
Chemical/fertilizer expenses	45	0.0%	2.2%	24.4%	73.3%
Input Costs	44	0.0%	11.4%	36.4%	52.3%
Training for your employees	43	0.0%	18.6%	30.2%	51.2%
Net return or profit margin	45	4.4%	8.9%	37.8%	48.9%
Supply/Quality of Turf	44	0.0%	6.8%	50.0%	43.2%
Labor issues acquiring/retaining	43	7.0%	14.0%	37.2%	41.9%
Business competition, changing market structure	44	4.5%	22.7%	34.1%	38.6%
Water problems availability/quality	44	6.8%	34.1%	22.7%	36.4%
Government regulations	43	4.7%	14.0%	46.5%	34.9%
Equipment selection/utilization	45	4.4%	22.2%	40.0%	33.3%
Marketing opportunities	43	9.3%	25.6%	37.2%	27.9%
Training on business management or record keeping	43	0.0%	37.2%	41.9%	20.9%

APPENDIX C: SPECIALTY CROP-GENERATED ACTIVITY BY SECTOR, 2015
TABLE C1: SPECIALTY CROP – GENERATED ACTIVITY BY IMPLAN SECTOR

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
469	Landscape and horticultural services	10,776.52	202,578,996.26	263,122,676.44
395	Wholesale trade	1,254.00	94,553,129.41	210,943,707.41
399	Retail - Building material and garden equipment and supplies stores	1,455.00	48,733,926.09	84,445,112.86
400	Retail - Food and beverage stores	1,789.00	51,959,405.31	81,542,851.82
6	Greenhouse, nursery, and floriculture production	1,195.50	63,329,698.64	69,885,480.30
440	Real estate	406.92	7,038,451.53	53,885,482.27
441	Owner-occupied dwellings	0.00	0.00	51,553,042.58
81	Canned fruits and vegetables manufacturing	498.94	25,688,558.59	37,929,837.14
3	Vegetable and melon farming	293.95	25,596,004.26	30,006,627.28
79	Frozen fruits, juices and vegetables manufacturing	201.96	16,467,518.99	25,762,757.65
405	Retail - General merchandise stores	534.00	13,612,174.25	24,399,865.42
534	* Employment and payroll of local govt, education	352.36	19,062,782.89	22,883,194.99
531	* Employment and payroll of state govt, non-education	319.33	18,558,928.50	22,292,178.77
461	Management of companies and enterprises	135.80	16,149,530.29	19,648,651.43
482	Hospitals	249.45	15,024,971.81	17,551,259.81
428	Wireless telecommunications carriers (except satellite)	7.38	613,784.22	15,935,179.26
433	Monetary authorities and depository credit intermediation	127.52	7,615,249.37	15,387,356.17
406	Retail - Miscellaneous store retailers	684.00	11,903,005.83	14,774,773.59
475	Offices of physicians	158.04	14,690,065.72	14,235,577.44
437	Insurance carriers	65.88	5,350,518.04	13,622,797.26
502	Limited-service restaurants	340.62	5,593,162.86	12,507,956.75
411	Truck transportation	179.52	9,852,876.62	12,396,369.02
4	Fruit farming	294.01	10,510,706.07	11,893,645.03
533	* Employment and payroll of local govt, non-education	221.36	9,425,253.84	11,332,711.33
464	Employment services	258.00	6,919,147.62	11,201,077.67
49	Electric power transmission and distribution	20.51	2,392,891.91	8,886,385.03

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
427	Wired telecommunications carriers	23.94	1,993,341.73	8,715,333.73
416	Warehousing and storage	150.46	6,101,019.60	7,925,384.76
504	Automotive repair and maintenance, except car washes	135.46	6,516,708.00	7,723,408.64
438	Insurance agencies, brokerages, and related activities	129.62	5,077,851.04	7,395,996.73
532	* Employment and payroll of state govt, education	150.94	6,160,876.51	7,382,693.11
396	Retail - Motor vehicle and parts dealers	79.47	4,355,209.28	7,127,260.40
449	Architectural, engineering, and related services	111.00	7,096,171.11	7,086,067.86
457	Advertising, public relations, and related services	63.46	3,146,755.74	6,577,039.22
447	Legal services	76.74	4,153,259.57	6,184,377.42
501	Full-service restaurants	287.95	5,372,814.82	5,882,803.34
526	Other local government enterprises	45.41	2,776,688.28	5,717,613.96
62	Maintenance and repair construction of nonresidential structures	95.51	4,038,420.67	5,535,308.75
104	Spice and extract manufacturing	47.84	2,947,970.15	4,618,124.16
507	Commercial and industrial machinery and equipment repair and maintenance	49.37	2,909,404.65	4,552,862.23
448	Accounting, tax preparation, bookkeeping, and payroll services	85.46	3,737,485.57	4,544,719.35
19	Support activities for agriculture and forestry	69.46	2,781,308.48	4,494,593.52
476	Offices of dentists	50.24	2,801,931.40	4,342,730.19
477	Offices of other health practitioners	70.31	3,286,935.51	4,251,538.46
414	Scenic and sightseeing transportation and support activities for transportation	51.32	3,067,725.47	4,158,781.23
518	Postal service	52.10	4,144,045.03	4,156,060.82
483	Nursing and community care facilities	122.64	3,778,641.89	4,071,722.28
407	Retail - Nonstore retailers	71.22	1,196,482.45	3,918,753.51
468	Services to buildings	195.02	3,229,945.49	3,843,215.09
454	Management consulting services	71.10	3,862,902.66	3,775,360.29
465	Business support services	104.94	3,563,347.03	3,472,066.11

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
471	Waste management and remediation services	39.01	1,981,736.56	3,379,642.86
485	Individual and family services	143.04	3,392,273.17	3,315,597.97
508	Personal and household goods repair and maintenance	62.12	2,656,732.88	3,201,679.17
415	Couriers and messengers	58.29	1,821,538.38	3,169,665.48
401	Retail - Health and personal care stores	55.71	2,176,935.20	3,024,859.22
445	Commercial and industrial machinery and equipment rental and leasing	12.24	981,680.71	2,872,600.19
403	Retail - Clothing and clothing accessories stores	60.56	1,239,819.66	2,833,731.91
5	Tree nut farming	44.12	2,413,919.25	2,812,426.41
478	Outpatient care centers	32.50	1,732,586.78	2,798,239.09
10	All other crop farming	162.24	2,457,505.55	2,733,106.40
156	Petroleum refineries	2.08	259,780.86	2,655,686.74
417	Newspaper publishers	28.50	1,037,229.80	2,636,187.27
109	Wineries	50.59	1,180,850.88	2,428,272.76
487	Child day care services	87.21	1,795,313.83	2,342,344.01
409	Rail transportation	9.45	1,001,053.00	2,337,372.88
480	Home health care services	59.30	2,626,430.38	2,331,971.20
435	Securities and commodity contracts intermediation and brokerage	32.32	2,714,711.88	2,221,778.69
434	Nondepository credit intermediation and related activities	34.99	2,007,764.67	2,202,253.21
462	Office administrative services	48.69	2,014,728.37	2,156,346.27
503	All other food and drinking places	104.84	2,576,258.69	2,121,863.62
43	Electric power generation - Nuclear	4.69	750,440.66	2,061,579.38
442	Automotive equipment rental and leasing	11.49	609,953.76	2,043,934.43
439	Funds, trusts, and other financial vehicles	27.57	932,655.81	2,015,531.32
453	Other computer related services, including facilities management	19.13	1,578,171.58	2,009,163.64
58	Construction of other new nonresidential structures	34.28	1,460,445.55	2,001,937.04
63	Maintenance and repair construction of residential structures	33.75	1,438,120.89	1,944,079.48
402	Retail - Gasoline stores	50.64	1,540,169.13	1,887,195.68

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
473	Junior colleges, colleges, universities, and professional schools	36.90	1,334,482.83	1,845,186.61
452	Computer systems design services	25.00	2,047,572.17	1,794,938.13
460	Marketing research and all other miscellaneous professional, scientific, and technical services	54.37	1,957,596.58	1,789,141.86
512	Other personal services	82.16	1,703,261.97	1,764,406.43
56	Construction of new highways and streets	29.44	1,262,577.56	1,707,634.90
509	Personal care services	93.18	1,963,129.45	1,635,684.68
76	Nonchocolate confectionery manufacturing	26.77	951,555.85	1,609,670.36
515	Business and professional associations	18.68	730,673.31	1,581,350.77
20	Extraction of natural gas and crude petroleum	19.94	1,046,455.76	1,567,795.77
467	Investigation and security services	53.38	1,405,962.50	1,554,205.04
446	Lessors of nonfinancial intangible assets	2.48	38,098.01	1,526,897.20
397	Retail - Furniture and home furnishings stores	24.64	827,035.89	1,498,939.41
425	Radio and television broadcasting	21.91	1,427,372.62	1,493,262.59
430	Data processing, hosting, and related services	18.34	1,265,830.40	1,455,947.17
506	Electronic and precision equipment repair and maintenance	19.29	1,134,302.53	1,449,491.62
13	Poultry and egg production	12.98	1,199,396.29	1,364,335.43
514	Grantmaking, giving, and social advocacy organizations	22.39	686,103.09	1,337,926.05
474	Other educational services	56.77	1,311,673.70	1,325,989.08
436	Other financial investment activities	67.06	834,219.93	1,315,201.77
408	Air transportation	9.78	859,648.06	1,287,232.32
50	Natural gas distribution	6.76	684,927.76	1,259,728.93
513	Religious organizations	34.63	1,246,486.34	1,247,637.80
55	Construction of new educational and vocational structures	20.90	867,379.17	1,204,478.40
64	Maintenance and repair construction of highways, streets, bridges, and tunnels	20.52	867,531.51	1,189,092.27

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
404	Retail - Sporting goods, hobby, musical instrument and book stores	35.01	759,792.84	1,187,542.11
486	Community food, housing, and other relief services, including rehabilitation services	27.54	764,092.54	1,152,194.23
496	Other amusement and recreation industries	36.47	634,737.92	1,117,069.18
78	Confectionery manufacturing from purchased chocolate	23.63	948,618.52	1,066,439.59
443	General and consumer goods rental except video tapes and discs	16.06	798,681.14	1,059,023.64
472	Elementary and secondary schools	28.08	1,020,196.32	1,049,951.43
470	Other support services	34.55	989,946.80	1,044,026.12
154	Printing	22.44	984,387.82	1,031,855.17
149	Paperboard container manufacturing	10.09	670,409.33	996,263.38
525	Local government electric utilities	3.60	318,602.50	991,806.80
481	Other ambulatory health care services	18.23	852,943.65	951,622.85
484	Residential mental retardation, mental health, substance abuse and other facilities	29.83	971,495.07	941,310.85
455	Environmental and other technical consulting services	22.11	1,230,512.60	890,455.89
42	Electric power generation - Fossil fuel	1.60	240,284.76	888,132.94
398	Retail - Electronics and appliance stores	21.33	861,694.36	858,206.38
516	Labor and civic organizations	24.14	446,807.84	826,503.35
413	Pipeline transportation	2.21	711,963.81	823,959.37
245	Metal cans manufacturing	3.33	248,404.10	790,947.74
51	Water, sewage and other systems	7.94	438,902.72	756,746.91
418	Periodical publishers	5.21	198,253.56	745,203.04
450	Specialized design services	15.39	553,700.35	635,875.16
517	Private households	44.21	628,407.71	628,407.71
459	Veterinary services	15.04	533,184.46	618,360.49
495	Gambling industries (except casino hotels)	14.73	297,757.63	607,760.82
479	Medical and diagnostic laboratories	9.45	586,675.55	596,306.70
511	Dry-cleaning and laundry services	18.07	534,027.67	595,474.62

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
412	Transit and ground passenger transportation	16.71	379,775.02	589,104.18
524	Local government passenger transit	21.06	1,492,482.87	581,821.83
497	Fitness and recreational sports centers	24.09	318,342.81	571,406.18
505	Car washes	17.84	729,235.40	466,375.21
422	Software publishers	1.41	121,339.23	466,082.85
92	Poultry processing	9.46	365,541.28	461,767.49
420	Directory, mailing list, and other publishers	1.81	64,990.04	445,372.81
38	Support activities for oil and gas operations	4.09	281,707.73	417,869.37
2	Grain farming	9.81	259,319.79	387,694.31
419	Book publishers	0.72	27,938.84	375,049.72
510	Death care services	8.21	272,446.29	353,137.02
21	Extraction of natural gas liquids	0.50	35,641.35	346,085.25
491	Promoters of performing arts and sports and agents for public figures	9.20	163,483.52	345,223.16
488	Performing arts companies	8.02	102,010.65	321,752.76
423	Motion picture and video industries	4.61	103,609.84	316,145.19
106	Bottled and canned soft drinks & water	1.90	130,556.33	303,248.75
101	Coffee and tea manufacturing	6.98	222,810.42	299,720.87
158	Asphalt shingle and coating materials manufacturing	0.73	60,906.25	281,714.25
499	Hotels and motels, including casino hotels	5.65	119,738.51	268,948.42
159	Petroleum lubricating oil and grease manufacturing	0.37	31,184.32	265,324.95
30	Stone mining and quarrying	2.10	106,201.55	261,003.77
456	Scientific research and development services	3.38	198,768.96	260,182.43
54	Construction of new power and communication structures	4.07	173,519.57	255,981.08
489	Commercial Sports Except Racing	11.35	155,227.38	248,704.67
458	Photographic services	11.33	328,573.89	245,351.97
147	Paper mills	0.95	100,370.00	241,877.87
466	Travel arrangement and reservation services	4.12	132,586.42	237,360.73
99	Roasted nuts and peanut butter manufacturing	0.74	51,241.57	225,852.06

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
429	Satellite, telecommunications resellers, and all other telecommunications	3.63	188,560.86	206,264.95
100	Other snack food manufacturing	0.88	53,870.92	198,819.02
94	Bread and bakery product, except frozen, manufacturing	3.03	129,050.16	193,988.21
108	Breweries	0.68	15,828.49	189,204.34
152	Sanitary paper product manufacturing	0.69	45,074.06	187,488.02
1	Oilseed farming	0.93	169,923.32	187,408.58
463	Facilities support services	3.88	99,485.20	185,037.11
70	Wet corn milling	0.60	55,343.96	183,436.75
134	Sawmills	2.18	113,933.31	180,432.58
84	Fluid milk manufacturing	1.65	92,958.85	178,986.99
444	Video tape and disc rental	0.93	39,392.25	178,313.29
14	Animal production, except cattle and poultry and eggs	4.02	170,799.43	178,127.20
206	Ready-mix concrete manufacturing	2.64	125,165.58	177,800.36
492	Independent artists, writers, and performers	35.95	165,073.82	174,843.52
57	Construction of new commercial structures, including farm structures	3.07	129,249.31	174,452.60
349	Travel trailer and camper manufacturing	3.18	150,431.56	171,485.94
80	Frozen specialties manufacturing	2.31	128,619.96	171,362.85
172	Pesticide and other agricultural chemical manufacturing	0.60	44,094.31	168,793.89
432	Internet publishing and broadcasting and web search portals	2.51	140,962.60	165,991.98
31	Sand and gravel mining	1.67	72,679.08	159,726.33
209	Other concrete product manufacturing	2.36	101,305.74	148,286.92
451	Custom computer programming services	1.41	107,224.69	147,000.17
494	Amusement parks and arcades	4.05	45,936.72	145,096.91
196	Tire manufacturing	1.06	84,580.00	143,700.85
66	Other animal food manufacturing	0.75	50,211.99	124,407.88
493	Museums, historical sites, zoos, and parks	3.24	113,579.24	116,245.07
187	Other miscellaneous chemical product manufacturing	0.85	64,789.95	113,128.83

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
52	Construction of new health care structures	1.89	80,939.37	109,881.67
142	Wood container and pallet manufacturing	2.21	70,244.01	105,001.94
188	Plastics packaging materials and unlaminated film and sheet manufacturing	0.74	45,461.06	103,802.57
426	Cable and other subscription programming	0.35	21,112.44	103,481.10
98	Tortilla manufacturing	1.23	65,655.05	102,646.67
254	Valve and fittings, other than plumbing, manufacturing	0.66	43,310.39	101,585.00
11	Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	3.49	79,565.49	101,359.91
150	Paper bag and coated and treated paper manufacturing	0.89	49,630.91	97,422.22
157	Asphalt paving mixture and block manufacturing	0.42	35,569.39	95,735.83
277	Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.05	56,732.93	94,968.69
16	Commercial logging	1.77	85,493.97	92,173.83
60	Construction of new multifamily residential structures	1.60	68,021.96	92,048.11
195	Other plastics product manufacturing	1.40	62,835.18	90,964.73
182	Toilet preparation manufacturing	0.35	22,975.35	88,171.72
498	Bowling centers	3.07	43,003.51	88,067.00
141	Other millwork, including flooring	0.87	36,977.47	86,186.06
490	Racing and Track Operation	2.90	75,361.48	83,112.23
262	Farm machinery and equipment manufacturing	0.81	37,767.42	82,625.27
135	Wood preservation	0.46	22,016.77	80,425.90
210	Lime manufacturing	0.49	38,454.88	79,589.31
431	News syndicates, libraries, archives and all other information services	1.18	37,739.15	78,118.02
90	Meat processed from carcasses	0.90	46,553.25	77,044.92
352	Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	0.89	51,090.70	76,875.81

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
169	Nitrogenous fertilizer manufacturing	0.31	29,872.05	76,868.11
174	Pharmaceutical preparation manufacturing	0.26	18,466.55	75,339.71
388	Sign manufacturing	2.46	80,577.48	73,609.35
421	Greeting card publishing	0.24	17,956.62	73,284.28
148	Paperboard mills	0.31	31,045.96	72,100.40
255	Plumbing fixture fitting and trim manufacturing	0.28	14,904.78	71,704.91
17	Commercial fishing	4.17	20,620.81	69,790.50
139	Wood windows and door manufacturing	0.84	35,820.42	65,511.92
203	Glass container manufacturing	0.74	40,179.60	64,226.48
8	Cotton farming	0.73	54,876.72	63,210.33
424	Sound recording industries	0.50	10,175.78	58,271.77
257	Small arms ammunition manufacturing	0.31	18,055.52	58,270.39
238	Fabricated structural metal manufacturing	0.44	29,799.23	58,205.53
217	Iron and steel mills and ferroalloy manufacturing	0.25	27,611.15	55,227.48
82	Canned specialties	0.31	26,615.29	51,811.90
200	Brick, tile, and other structural clay product manufacturing	0.46	24,306.08	47,125.68
140	Cut stock, resawing lumber, and planing	0.34	13,343.12	45,170.24
364	Boat building	0.81	32,707.19	44,696.60
136	Veneer and plywood manufacturing	0.49	30,031.38	43,819.73
207	Concrete block and brick manufacturing	0.43	22,242.34	42,451.55
46	Electric power generation - Geothermal	0.12	15,547.90	41,506.89
145	All other miscellaneous wood product manufacturing	0.63	19,623.18	39,499.86
192	Polystyrene foam product manufacturing	0.37	16,426.61	39,364.09
356	Other motor vehicle parts manufacturing	0.47	26,365.98	39,250.09
208	Concrete pipe manufacturing	0.32	19,027.42	36,853.46
198	Other rubber product manufacturing	0.32	18,645.51	36,547.40
68	Rice milling	0.32	19,313.58	35,823.29

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
204	Glass product manufacturing made of purchased glass	0.50	22,427.02	35,184.78
71	Soybean and other oilseed processing	0.14	9,197.91	34,920.21
215	Mineral wool manufacturing	0.25	15,792.07	34,917.22
65	Dog and cat food manufacturing	0.10	7,083.09	34,482.56
12	Dairy cattle and milk production	0.29	28,998.31	34,481.64
242	Ornamental and architectural metal work manufacturing	0.70	27,610.58	34,068.76
102	Flavoring syrup and concentrate manufacturing	0.07	4,169.13	33,543.01
237	Prefabricated metal buildings and components manufacturing	0.31	19,377.93	33,348.41
523	Other state government enterprises	0.38	31,763.64	32,858.56
160	All other petroleum and coal products manufacturing	0.06	5,240.99	32,754.49
164	Other basic inorganic chemical manufacturing	0.13	12,657.19	30,988.88
410	Water transportation	0.35	13,285.72	30,987.54
138	Reconstituted wood product manufacturing	0.19	12,050.98	30,295.66
260	Fabricated pipe and pipe fitting manufacturing	0.25	14,945.91	30,189.04
329	Household refrigerator and home freezer manufacturing	0.12	12,363.44	29,588.32
249	Machine shops	0.47	22,454.51	29,494.19
15	Forestry, forest products, and timber tract production	0.50	26,685.53	28,804.97
205	Cement manufacturing	0.12	10,125.55	26,841.85
96	Cookie and cracker manufacturing	0.20	13,311.62	26,302.17
340	Wiring device manufacturing	0.22	13,061.14	26,049.99
211	Gypsum product manufacturing	0.16	10,815.99	25,322.31
213	Cut stone and stone product manufacturing	0.65	18,438.40	24,043.84
218	Iron, steel pipe and tube manufacturing from purchased steel	0.20	14,072.41	23,025.77
105	All other food manufacturing	0.42	16,874.44	22,924.13
18	Commercial hunting and trapping	0.73	7,292.40	22,728.95
394	All other miscellaneous manufacturing	0.69	20,256.23	21,208.75
336	Storage battery manufacturing	0.19	14,518.56	20,219.95

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
240	Metal window and door manufacturing	0.21	12,632.79	19,749.21
333	Motor and generator manufacturing	0.17	13,103.87	19,391.95
216	Miscellaneous nonmetallic mineral products manufacturing	0.13	8,237.43	19,327.47
246	Metal barrels, drums and pails manufacturing	0.26	12,432.10	18,595.33
162	Industrial gas manufacturing	0.11	6,545.13	18,508.96
103	Mayonnaise, dressing, and sauce manufacturing	0.20	7,547.13	17,341.06
258	Ammunition, except for small arms, manufacturing	0.13	9,414.53	17,069.53
241	Sheet metal work manufacturing	0.23	13,405.23	16,960.65
193	Urethane and other foam product (except polystyrene) manufacturing	0.14	8,130.21	16,939.16
360	Guided missile and space vehicle manufacturing	0.07	7,584.30	16,922.29
190	Plastics pipe and pipe fitting manufacturing	0.11	4,909.69	16,319.83
287	Pump and pumping equipment manufacturing	0.17	8,690.20	16,202.96
91	Rendering and meat byproduct processing	0.19	11,170.83	15,786.38
214	Ground or treated mineral and earth manufacturing	0.07	5,325.80	14,703.56
261	Other fabricated metal manufacturing	0.17	9,329.06	14,435.74
263	Lawn and garden equipment manufacturing	0.21	7,013.14	14,311.20
212	Abrasive product manufacturing	0.10	4,558.16	13,017.30
194	Plastics bottle manufacturing	0.10	5,056.35	12,608.95
110	Distilleries	0.01	928.97	12,556.10
73	Breakfast cereal manufacturing	0.04	2,955.69	12,480.72
122	Rope, cordage, twine, tire cord and tire fabric mills	0.16	10,706.95	12,103.00
170	Phosphatic fertilizer manufacturing	0.04	3,302.08	12,032.22
151	Stationery product manufacturing	0.13	6,781.51	11,659.55
72	Fats and oils refining and blending	0.09	5,638.32	11,409.00
177	Paint and coating manufacturing	0.07	4,887.48	10,627.45
53	Construction of new manufacturing structures	0.18	7,908.67	10,469.05

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
309	Semiconductor and related device manufacturing	0.06	4,608.70	10,345.18
125	Other apparel knitting mills	0.18	6,416.08	10,339.97
179	Soap and other detergent manufacturing	0.05	2,365.97	10,227.64
67	Flour milling	0.08	3,453.56	9,760.55
197	Rubber and plastics hoses and belting manufacturing	0.09	5,264.51	9,614.51
351	Motor vehicle electrical and electronic equipment manufacturing	0.16	7,304.92	9,444.95
59	Construction of new single-family residential structures	0.15	5,998.47	9,379.69
137	Engineered wood member and truss manufacturing	0.19	7,310.05	9,339.25
274	Other commercial service industry machinery manufacturing	0.10	5,582.88	9,124.72
189	Unlaminated plastics profile shape manufacturing	0.05	4,045.62	8,922.68
369	Upholstered household furniture manufacturing	0.17	6,792.59	8,789.98
171	Fertilizer mixing	0.06	4,603.90	8,757.73
41	Electric power generation - Hydroelectric	0.02	2,836.96	8,383.53
362	Railroad rolling stock manufacturing	0.08	4,640.10	8,332.92
223	Aluminum sheet, plate, and foil manufacturing	0.07	5,000.81	8,218.38
89	Animal, except poultry, slaughtering	0.08	3,363.16	7,767.72
350	Motor vehicle gasoline engine and engine parts manufacturing	0.11	5,104.47	7,687.92
93	Seafood product preparation and packaging	0.13	5,539.71	7,392.93
252	Metal coating and nonprecious engraving	0.07	2,923.84	7,379.72
180	Polish and other sanitation good manufacturing	0.13	3,072.65	7,110.26
357	Aircraft manufacturing	0.03	2,126.40	7,028.76
191	Laminated plastics plate, sheet (except packaging), and shape manufacturing	0.03	2,500.89	6,971.14
22	Coal mining	0.03	827.29	6,688.13

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
368	Wood kitchen cabinet and countertop manufacturing	0.18	5,781.59	6,554.32
185	Custom compounding of purchased resins	0.08	3,368.91	6,532.55
247	Hardware manufacturing	0.05	2,689.60	6,456.97
107	Manufactured ice	0.37	10,142.16	6,144.74
380	Surgical appliance and supplies manufacturing	0.07	4,859.50	6,133.16
248	Spring and wire product manufacturing	0.05	2,877.34	5,720.10
385	Sporting and athletic goods manufacturing	0.11	4,210.59	5,399.80
347	Truck trailer manufacturing	0.09	4,485.58	5,366.14
183	Printing ink manufacturing	0.06	3,444.95	5,344.58
359	Other aircraft parts and auxiliary equipment manufacturing	0.04	2,547.30	5,305.63
376	Showcase, partition, shelving, and locker manufacturing	0.07	3,706.86	4,928.89
392	Broom, brush, and mop manufacturing	0.06	3,949.96	4,669.16
155	Support activities for printing	0.10	4,557.67	4,638.32
326	Lighting fixture manufacturing	0.05	2,839.02	4,637.98
253	Electroplating, anodizing, and coloring metal	0.09	3,879.49	4,587.63
379	Surgical and medical instrument manufacturing	0.05	3,477.20	4,512.57
236	Handtool manufacturing	0.04	2,099.22	4,370.43
367	All other transportation equipment manufacturing	0.04	2,434.93	4,188.01
224	Other aluminum rolling, drawing and extruding	0.06	3,448.06	4,142.75
61	Construction of other new residential structures	0.07	2,658.95	3,994.50
36	Other nonmetallic minerals	0.06	2,482.79	3,920.06
251	Metal heat treating	0.03	1,505.05	3,877.40
178	Adhesive manufacturing	0.02	2,218.16	3,671.15
275	Air purification and ventilation equipment manufacturing	0.04	2,276.06	3,612.29
296	Packaging machinery manufacturing	0.05	2,634.51	3,572.02
339	Other communication and energy wire manufacturing	0.03	2,405.05	3,566.79

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
353	Motor vehicle transmission and power train parts manufacturing	0.03	2,336.61	3,508.90
220	Steel wire drawing	0.04	2,250.58	3,438.98
500	Other accommodations	0.15	2,982.07	3,417.19
29	Other metal ore mining	0.01	636.88	3,395.48
221	Alumina refining and primary aluminum production	0.02	1,622.92	3,346.94
250	Turned product and screw, nut, and bolt manufacturing	0.03	1,448.28	3,337.78
259	Small arms, ordnance, and accessories manufacturing	0.02	1,092.97	3,300.24
40	Other nonmetallic minerals services	0.02	1,159.41	3,275.46
341	Carbon and graphite product manufacturing	0.03	1,855.65	3,261.20
291	Conveyor and conveying equipment manufacturing	0.04	2,558.76	3,253.09
313	Other electronic component manufacturing	0.03	1,785.88	3,223.75
165	Other basic organic chemical manufacturing	0.02	1,838.97	3,213.21
383	Dental laboratories	0.06	3,014.63	3,056.69
184	Explosives manufacturing	0.03	2,384.99	2,909.61
32	Other clay, ceramic, refractory minerals mining	0.03	1,807.29	2,829.99
343	Automobile manufacturing	0.01	1,083.99	2,577.27
311	Electronic connector manufacturing	0.02	1,101.54	2,547.58
121	Textile bag and canvas mills	0.06	2,391.56	2,540.68
230	Nonferrous metal foundries	0.03	1,774.61	2,503.92
239	Plate work manufacturing	0.04	2,133.98	2,426.54
377	Mattress manufacturing	0.03	925.48	2,426.27
37	Drilling oil and gas wells	0.02	1,115.10	2,384.20
95	Frozen cakes and other pastries manufacturing	0.05	1,225.09	2,290.80
234	Crown and closure manufacturing and metal stamping	0.03	1,345.85	2,171.58
346	Motor vehicle body manufacturing	0.03	1,804.21	2,038.70
166	Plastics material and resin manufacturing	0.01	866.28	2,006.66
256	Ball and roller bearing manufacturing	0.01	615.70	1,831.17

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
371	Other household nonupholstered furniture manufacturing	0.03	1,161.40	1,747.25
229	Ferrous metal foundries	0.02	1,070.99	1,732.13
97	Dry pasta, mixes, and dough manufacturing	0.01	671.47	1,717.66
119	Carpet and rug mills	0.03	1,598.31	1,678.91
202	Other pressed and blown glass and glassware manufacturing	0.03	1,118.90	1,648.36
264	Construction machinery manufacturing	0.01	842.01	1,630.82
144	Prefabricated wood building manufacturing	0.02	811.05	1,562.48
87	Dry, condensed, and evaporated dairy product manufacturing	0.01	682.05	1,559.70
389	Gasket, packing, and sealing device manufacturing	0.05	1,321.50	1,463.16
372	Institutional furniture manufacturing	0.03	1,161.71	1,426.67
370	Nonupholstered wood household furniture manufacturing	0.06	954.23	1,327.66
304	Telephone apparatus manufacturing	0.01	459.59	1,323.57
312	Printed circuit assembly (electronic assembly) manufacturing	0.02	814.14	1,314.53
307	Audio and video equipment manufacturing	0.01	600.57	1,311.28
132	Footwear manufacturing	0.04	1,257.01	1,283.31
381	Dental equipment and supplies manufacturing	0.02	1,029.68	1,276.59
235	Cutlery, utensil, pot, and pan manufacturing	0.01	259.24	1,234.28
39	Metal mining services	0.00	232.63	1,230.31
387	Office supplies (except paper) manufacturing	0.02	935.51	1,160.91
390	Musical instrument manufacturing	0.04	1,234.08	1,147.35
265	Mining machinery and equipment manufacturing	0.01	714.79	1,130.96
88	Ice cream and frozen dessert manufacturing	0.02	904.58	1,123.45
293	Industrial truck, trailer, and stacker manufacturing	0.01	580.48	1,059.08

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
173	Medicinal and botanical manufacturing	0.01	603.18	1,048.79
298	Fluid power cylinder and actuator manufacturing	0.01	833.62	1,033.06
334	Switchgear and switchboard apparatus manufacturing	0.01	683.76	1,018.22
123	Other textile product mills	0.02	880.70	929.64
233	Custom roll forming	0.01	341.47	909.01
244	Metal tank (heavy gauge) manufacturing	0.01	494.89	902.41
345	Heavy duty truck manufacturing	0.01	577.29	862.98
280	Cutting tool and machine tool accessory manufacturing	0.01	750.39	862.18
175	In-vitro diagnostic substance manufacturing	0.01	647.38	812.10
310	Capacitor, resistor, coil, transformer, and other inductor manufacturing	0.01	437.43	773.94
126	Cut and sew apparel contractors	0.07	754.75	673.24
267	Food product machinery manufacturing	0.01	482.43	658.69
303	Computer terminals and other computer peripheral equipment manufacturing	0.00	229.60	648.32
127	Mens and boys cut and sew apparel manufacturing	0.02	555.98	634.06
332	Power, distribution, and specialty transformer manufacturing	0.02	418.37	632.94
365	Motorcycle, bicycle, and parts manufacturing	0.00	180.22	600.49
219	Rolled steel shape manufacturing	0.01	198.30	584.75
28	Uranium-radium-vanadium ore mining	0.01	366.60	565.77
363	Ship building and repairing	0.01	426.81	548.23
285	Mechanical power transmission equipment manufacturing	0.01	325.78	485.83
300	Scales, balances, and miscellaneous general purpose machinery manufacturing	0.01	352.93	468.93
130	Apparel accessories and other apparel manufacturing	0.01	405.38	458.01
231	Iron and steel forging	0.00	164.70	438.63

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
286	Other engine equipment manufacturing	0.00	203.62	428.71
294	Power-driven handtool manufacturing	0.00	146.65	396.41
318	Totalizing fluid meter and counting device manufacturing	0.00	188.31	396.15
374	Custom architectural woodwork and millwork	0.01	289.74	349.78
269	Sawmill, woodworking, and paper machinery	0.00	288.59	344.80
386	Doll, toy, and game manufacturing	0.01	257.19	336.81
278	Industrial mold manufacturing	0.01	252.21	308.43
163	Synthetic dye and pigment manufacturing	0.00	132.21	303.63
317	Industrial process variable instruments manufacturing	0.00	128.21	267.57
315	Search, detection, and navigation instruments manufacturing	0.00	133.97	264.20
226	Copper rolling, drawing, extruding and alloying	0.00	127.19	256.52
128	Womens and girls cut and sew apparel manufacturing	0.02	204.06	252.90
306	Other communications equipment manufacturing	0.00	92.45	247.73
228	Secondary processing of other nonferrous metals	0.00	61.54	235.15
290	Elevator and moving stairway manufacturing	0.00	130.49	204.00
342	All other miscellaneous electrical equipment and component manufacturing	0.00	145.44	190.82
378	Blind and shade manufacturing	0.01	166.80	189.66
186	Photographic film and chemical manufacturing	0.00	107.92	175.75
271	All other industrial machinery manufacturing	0.00	133.30	164.76
288	Air and gas compressor manufacturing	0.00	86.14	159.77
279	Special tool, die, jig, and fixture manufacturing	0.00	131.46	152.13

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
283	Turbine and turbine generator set units manufacturing	0.00	96.53	140.66
320	Analytical laboratory instrument manufacturing	0.00	71.75	140.29
133	Other leather and allied product manufacturing	0.01	212.11	135.96
199	Pottery, ceramics, and plumbing fixture manufacturing	0.01	93.03	133.52
120	Curtain and linen mills	0.00	109.01	131.86
358	Aircraft engine and engine parts manufacturing	0.00	61.26	130.08
308	Bare printed circuit board manufacturing	0.00	71.90	129.19
373	Wood office furniture manufacturing	0.00	79.58	122.18
281	Machine tool manufacturing	0.00	69.83	108.29
129	Other cut and sew apparel manufacturing	0.00	81.73	89.73
382	Ophthalmic goods manufacturing	0.00	70.73	84.21
327	Small electrical appliance manufacturing	0.00	45.92	82.32
322	Watch, clock, and other measuring and controlling device manufacturing	0.00	33.04	71.57
176	Biological product (except diagnostic) manufacturing	0.00	46.67	66.56
335	Relay and industrial control manufacturing	0.00	39.57	60.62
117	Textile and fabric finishing mills	0.00	44.09	49.18
384	Jewelry and silverware manufacturing	0.00	33.18	48.38
266	Oil and gas field machinery and equipment manufacturing	0.00	28.33	45.38
115	Nonwoven fabric mills	0.00	37.72	44.70
354	Motor vehicle seating and interior trim manufacturing	0.00	25.58	36.07
113	Broadwoven fabric mills	0.00	23.56	26.68
118	Fabric coating mills	0.00	18.82	21.79
324	Software and other prerecorded and record reproducing	0.00	10.09	19.23

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
299	Fluid power pump and motor manufacturing	0.00	12.83	18.33
375	Office furniture, except wood, manufacturing	0.00	7.51	14.56
272	Optical instrument and lens manufacturing	0.00	10.11	13.11
222	Secondary smelting and alloying of aluminum	0.00	1.00	11.58
292	Overhead cranes, hoists, and monorail systems manufacturing	0.00	5.07	9.76
316	Automatic environmental control manufacturing	0.00	4.94	8.84
355	Motor vehicle metal stamping	0.00	1.97	2.58
319	Electricity and signal testing instruments manufacturing	0.00	0.84	1.47
7	Tobacco farming	0.00	0.00	0.00
9	Sugarcane and sugar beet farming	0.00	0.00	0.00
23	Iron ore mining	0.00	0.00	0.00
24	Gold ore mining	0.00	0.00	0.00
25	Silver ore mining	0.00	0.00	0.00
26	Lead and zinc ore mining	0.00	0.00	0.00
27	Copper ore mining	0.00	0.00	0.00
33	Potash, soda, and borate mineral mining	0.00	0.00	0.00
34	Phosphate rock mining	0.00	0.00	0.00
35	Other chemical and fertilizer mineral mining	0.00	0.00	0.00
44	Electric power generation - Solar	0.00	0.00	0.00
45	Electric power generation - Wind	0.00	0.00	0.00
47	Electric power generation - Biomass	0.00	0.00	0.00
48	Electric power generation - All other	0.00	0.00	0.00
69	Malt manufacturing	0.00	0.00	0.00
74	Beet sugar manufacturing	0.00	0.00	0.00
75	Sugar cane mills and refining	0.00	0.00	0.00
77	Chocolate and confectionery manufacturing from cacao beans	0.00	0.00	0.00
83	Dehydrated food products manufacturing	0.00	0.00	0.00
85	Creamery butter manufacturing	0.00	0.00	0.00
86	Cheese manufacturing	0.00	0.00	0.00
111	Tobacco product manufacturing	0.00	0.00	0.00

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
112	Fiber, yarn, and thread mills	0.00	0.00	0.00
114	Narrow fabric mills and schiffli machine embroidery	0.00	0.00	0.00
116	Knit fabric mills	0.00	0.00	0.00
124	Hosiery and sock mills	0.00	0.00	0.00
131	Leather and hide tanning and finishing	0.00	0.00	0.00
143	Manufactured home (mobile home) manufacturing	0.00	0.00	0.00
146	Pulp mills	0.00	0.00	0.00
153	All other converted paper product manufacturing	0.00	0.00	0.00
161	Petrochemical manufacturing	0.00	0.00	0.00
167	Synthetic rubber manufacturing	0.00	0.00	0.00
168	Artificial and synthetic fibers and filaments manufacturing	0.00	0.00	0.00
181	Surface active agent manufacturing	0.00	0.00	0.00
201	Flat glass manufacturing	0.00	0.00	0.00
225	Nonferrous metal (exc aluminum) smelting and refining	0.00	0.00	0.00
227	Nonferrous metal, except copper and aluminum, shaping	0.00	0.00	0.00
232	Nonferrous forging	0.00	0.00	0.00
243	Power boiler and heat exchanger manufacturing	0.00	0.00	0.00
268	Semiconductor machinery manufacturing	0.00	0.00	0.00
270	Printing machinery and equipment manufacturing	0.00	0.00	0.00
273	Photographic and photocopying equipment manufacturing	0.00	0.00	0.00
276	Heating equipment (except warm air furnaces) manufacturing	0.00	0.00	0.00
282	Rolling mill and other metalworking machinery manufacturing	0.00	0.00	0.00
284	Speed changer, industrial high-speed drive, and gear manufacturing	0.00	0.00	0.00
289	Measuring and dispensing pump manufacturing	0.00	0.00	0.00
295	Welding and soldering equipment manufacturing	0.00	0.00	0.00

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
297	Industrial process furnace and oven manufacturing	0.00	0.00	0.00
301	Electronic computer manufacturing	0.00	0.00	0.00
302	Computer storage device manufacturing	0.00	0.00	0.00
305	Broadcast and wireless communications equipment manufacturing	0.00	0.00	0.00
314	Electromedical and electrotherapeutic apparatus manufacturing	0.00	0.00	0.00
321	Irradiation apparatus manufacturing	0.00	0.00	0.00
323	Blank magnetic and optical recording media manufacturing	0.00	0.00	0.00
325	Electric lamp bulb and part manufacturing	0.00	0.00	0.00
328	Household cooking appliance manufacturing	0.00	0.00	0.00
330	Household laundry equipment manufacturing	0.00	0.00	0.00
331	Other major household appliance manufacturing	0.00	0.00	0.00
337	Primary battery manufacturing	0.00	0.00	0.00
338	Fiber optic cable manufacturing	0.00	0.00	0.00
344	Light truck and utility vehicle manufacturing	0.00	0.00	0.00
348	Motor home manufacturing	0.00	0.00	0.00
361	Propulsion units and parts for space vehicles and guided missiles manufacturing	0.00	0.00	0.00
366	Military armored vehicle, tank, and tank component manufacturing	0.00	0.00	0.00
391	Fasteners, buttons, needles, and pins manufacturing	0.00	0.00	0.00
393	Burial casket manufacturing	0.00	0.00	0.00
519	Federal electric utilities	0.00	0.00	0.00
521	State government passenger transit	0.00	0.00	0.00
522	State government electric utilities	0.00	0.00	0.00
527	* Not an industry (Used and secondhand goods)	0.00	0.00	0.00
528	* Not an industry (Scrap)	0.00	0.00	0.00

Sector ID	Specialty Crop Industry's Contribution to:	Employment (Jobs)	Labor Income (\$)	Value Added (\$)
529	* Not an industry (Rest of world adjustment)	0.00	0.00	0.00
530	* Not an industry (Noncomparable foreign imports)	0.00	0.00	0.00
535	* Employment and payroll of federal govt, non-military	0.00	0.00	0.00
536	* Employment and payroll of federal govt, military	0.00	0.00	0.00
520	Other federal government enterprises	2.38	79,385.82	-462,693.76