



Impacts of COVID-19 on U.S. ornamental fish farms: Quarter 1 Results

March 23, 2020 to April 10, 2020

Authored by Carole R. Engle, Engle-Stone Aquatic\$ LLC, Adjunct Faculty, Virginia Seafood AREC, Virginia Tech, Jonathan van Senten, Assistant Professor and Extension Specialist Department of Agricultural and Applied Economics, Center for Coastal Studies Affiliate Faculty, Virginia Seafood AREC, Virginia Tech; and Matthew A. Smith, Extension Specialist, The Ohio State University; Charles Clark, Virginia Seafood AREC, Virginia Tech; Shannon Fluharty, Department of Agricultural and Applied Economics, Virginia Tech; Michael H. Schwarz, Virginia Seafood AREC

Introduction

On March 23rd, 2020 Virginia Tech Seafood AREC and The Ohio State University Extension initiated an online survey of the U.S. aquaculture, aquaponics, and allied businesses. This survey was designed to capture and quantify the effects of the coronavirus disease (COVID-19) on the aquaculture, aquaponics, and allied industries. The survey closed April 10th, 2020 at 11:59 pm. The survey will be distributed at the conclusion of every quarter for 2020, to attempt to capture the evolving impacts of COVID-19 over time.

Survey methods are detailed in the Virginia Cooperative Extension Fact Sheet VCE-AAEC-218, available at:

https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html. This report is a supplemental report to the overall survey that summarizes results of **ornamental fish farm** respondents.

Methods

For a detailed description of the methods for this study, please consult the factsheet summarizing the Q1 results (AAEC-218NP). Data for this study were collected through an online survey distributed through Qualtrics. It should be noted that respondents self-selected for participation in the study and there was no specific sampling protocol followed due to time constraints and challenges with obtaining contact lists. It is therefore possible that

responses are skewed towards those farms and businesses that have been more affected by the coronavirus (COVID-19) disease pandemic. This study is being conducted for the duration of 2020, with a survey being administered quarterly to capture the evolving effects and impacts of the coronavirus diseases (COVID-19) pandemic on U.S. aquaculture, aquaponics, and allied businesses. The responses summarized in this fact sheet were collected during the Q1 survey, between March 23rd and April 10th, 2020.

Results

Characterization of Respondents

Quarter 1 survey results showed that there were **32 ornamental fish farm participants**. Most ornamental fish producers sell either to wholesalers or to pet stores and pet shops. Thirty-nine percent of ornamental fish respondents sold their fish directly to customers, 39% sold to distributors, 13% to “other”, un-categorized channels, 6% to other aquaculture/aquaponics farms, and 3% to restaurants (Table 1). No respondents reported selling to processors or to grocery stores/supermarkets.

Table 1. Primary marketing channel for ornamental fish respondents.

Category	Percentage
Direct to customers	39%
Distributors	39%
Other	13%
Other aquaculture/aquaculture farms	6%
Restaurants	3%
Grocery stores/supermarkets	0%
Processor	0%

Scale of farms/businesses

Responding mollusk farms varied in terms of their production scale. Respondents reported annual sales from \$1 to \$1,000 to in excess of \$1 million (Table 2). The greatest percentage (19%) of respondents reported sales in the range of \$100,000 to \$250,000, this was followed by farms with sales greater than \$1 million (18%), \$50,001 to \$100,000 (17%), and \$250,001 to \$500,000 (11%). Annual sales scales for \$500,001 to \$1 million, \$25,001 to \$50,000, and \$10,001 to \$25,000 were all tied at 8% of respondents. Five percent of respondents had annual sales less than \$10,000.

Table 2. Scale of ornamental fish respondent farms/businesses.

Category	Percentage
> \$1 million	32%
\$500,001 - \$1 million	13%
\$250,001 - \$500,000	10%
\$100,001 - \$250,000	10%
\$50,001 - \$100,000	10%
\$1 - \$1,000	10%
\$25,001 - \$50,000	6%
\$10,001 - \$25,000	6%
\$5,001 - \$10,000	3%
\$1,001 - \$5,000	0%

Aquaculture Regions

The greatest percentage of ornamental fish farm respondents (87%) were located in the Southern Aquaculture Region, followed by the North Central Aquaculture Region (10%), and the Northeast Aquaculture Region (3%) (Table 3). There were no ornamental fish respondents from the Tropical and Sub-tropical or the Western Aquaculture Regions.

Table 3. Participation by aquaculture region.

Region	Percentage of survey respondents
Southern	87%
North Central	10%
Northeastern	3%
Tropical and Sub-tropical	0%
Western	0%

Key Findings

Ninety-four percent of ornamental fish respondents reported that their farm or business had been impacted by the COVID-19 pandemic. One respondent reported being way too small to have been affected.

When asked whether their farm or business would survive the next 3 months without external intervention (such as government assistance), only 13% said, “yes.” Sixty-one percent reported that their farm would “maybe” survive 3 months without external assistance, and 26% said that their farm or business would not survive 3 months without external assistance. When asked the same question, but for the next 6 months, 13% said that it would survive, 26% said “maybe,” and 61% said that their farm/business would not survive the next 6 months without external assistance. Responses related to 12 months without external assistance were that 68% indicated that they would not survive, 19% said that their farm or business would “maybe” survive, and only 13% said that they would survive.

Lost Sales

Ninety-seven percent of ornamental fish farm respondents indicated that they had lost sales due to the COVID-19 outbreak. In addition, 50% of ornamental fish respondents indicated that they had lost sales to international or export markets outside the U.S. In terms of the volume of sales that had been lost, 17% reported losses in the range of \$1,001 to \$5,000. An additional 13% of respondents reported that they had lost either \$5,001 to \$10,000, \$50,001 to \$100,000, or \$100,001 to \$250,000. Seven percent of respondents reported sales losses of either \$25,001 to \$50,000 or \$250,001 to \$500,000,

and 3% reported losses of \$1 to \$1,000 and \$500,001 to \$1 million. No respondent reported losses of \$10,001 to \$25,000 or greater than \$1 million. Twenty-three percent of respondents indicated that they could not estimate the losses at the time the survey was administered.

The lost sales reported included canceled contracts of various sorts. Eighty-seven percent of ornamental fish respondents reported losing private contracts for sales, and 3% reported losing government (state or federal) contracts for sales.

Respondents were further asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. Ninety-seven percent of ornamental fish respondents indicated that they expected to lose sales, with 53% expecting to lose international markets. In terms of the volume of sales expected to be lost, 13% expected to lose from \$10,001 to \$25,000, 10% each expected to lose from \$5,001 to \$10,000, \$50,001 to \$100,000 and \$100,001 to \$250,000, or \$500,000 to \$1 million; 7% each expected to lose \$1 to \$1,000, \$1,001 to \$5,000, \$25,001 to \$50,000 and from \$250,001 to \$500,000. No respondents indicated that they expected to lose more than \$1 million. Twenty percent indicated that they could not estimate the amount of losses at the time of the survey.

When asked how long ornamental fish respondents thought their farm or business could survive without sales before suffering longer term cash flow effects, 42% said 1 to 3 months, 19% said 4 to 6 months, 26% said less than 1 month, and 3% each said 7 to 10 months and more than 10 months. Six percent did not respond. It should be noted that some respondents completed the survey four weeks prior to the preparation of this report.

Labor

Thirty percent had not laid off employees. In terms of the number of employees laid off, 33% of ornamental fish respondents who had laid off employees indicated that they had laid off either 1 to 3 employees or more than 20 employees. Another 22% had laid off from 4 to 6 employees and 11% had laid off from 7 to 10 employees. No respondents reported laying off from 11 to 15 or 16 to 20 employees.

Respondents were further asked how many weeks it would be before they would have to lay off employees. Forty-two percent of ornamental fish respondents indicated that they would have to decide within 1 to 3 weeks whether to lay off employees. Twenty-five percent said that they would have to decide within either 4 to 6 weeks or 7 to 10 weeks. Eight percent of respondents said that they had less than 1 week to decide whether to lay off employees. It should be noted that data collection for the survey was open for a period of 3 weeks. Ornamental fish respondents were further asked how many employees they would need to lay off at that time. Two-thirds reported that they would need to lay off 1 to 3 employees. Another 25% said from 4 to 6 employees and 8% 7 to 10 employees. Of those employees who had been laid off, 19% of ornamental fish respondents indicated that these were “Short-Time” or “Shared-Work” employees. Twenty-four percent did not respond to this question. One respondent commented that they had had to cut the work hours of 120 employees, while another respondent said that they had gone to half days of work to allow employees to deal with family-related issues.

Forty-five percent of ornamental fish respondents had experienced some type of labor challenge. Thirty-three percent of ornamental fish respondents indicated that employees had missed work due to COVID-19, while 67% reported that employees had not missed work due to the coronavirus. Employees who missed work did so mostly due to either symptoms of being ill or self-quarantine due to suspected exposure. Another respondent reported that employees do not know if they should stay home or come to work. Still another respondent reported that employees were taking turns and working for only a couple of hours a week. Of those respondents who reported employees missing work, 30% reported 7 to 10 days, 30% 11 to 14 days, 10%

more than 14 days, and 10% reported that employees missed less than 1 day.

Respondents provided additional comments related to labor challenges. The lack of availability of seasonal help was mentioned that compounded the overall labor shortages. One respondent reported that they were no longer selling or shipping fish anywhere due to the safety needs of their employees, the need of employees to be home with their families, and the need to abide by the CDC recommendations to stay home. Another respondent reported that their employees wanted what had been pre-negotiated for other employees.

Challenges to the farm/business

Ornamental fish respondents reported a variety of different challenges to the business that included production challenges not related to labor. Respondents reported supply challenges, workplace fear, and delays with construction projects.

Sixty-one percent of ornamental fish respondents expected to experience continued production challenges not related to labor. The uncertainty related to the availability of feed was mentioned as well as the availability of a number of supplies and stores that have closed. One respondent reported not being able to pump, wash, and re-set their ponds with broodstock for the next crop. Others were concerned about the safety of the feed because it came from a COVID-19 hot spot.

Thirty-two percent of ornamental fish respondents reported having experienced increased costs of production, including feed, and 39% expected to experience increased costs of production in the coming months. Respondents reported increased costs of feed, especially with the need to hold fish longer than originally planned. One respondent reported having to take fish that were held in buildings to prepare for shipping back to the ponds because they could not be sold, thereby increasing feeding costs and treatment costs related to holding them. Respondents also reported the cost of sanitation and PPE materials has significantly increased. The cost of bottles and caps has increased along with shipping costs. The closure of local distributors has required farms to purchase their own

shipping products for delivery to the farm, increasing their costs.

Thirty-nine percent of respondents indicated that they could hold market-ready product for 1 to 3 months, 29% less than 1 month, 19% said 4 to 6 months, and 3% said more than 10 months. Having to hold inventory was reported to incur additional feed and utility costs.

Challenges related to production inputs (feed, therapeutants, etc.) were reported by 64% of ornamental fish respondents. Respondents indicated that they were unable to obtain various types of supplies due to mandated business closures while another reported a shortage of feed for artemia cysts. The availability of sanitation materials and PPE (alcohol, gloves, bleach, etc.) was especially restrictive. Shortages of fish feed required one respondent to cut feeding in half and the respondent reported that they do not know when they will receive feed.

Thirty-six percent of ornamental fish respondents reported challenges with repair, construction, consultant, or engineering services. One respondent reported having to put construction of a new facility on hold due to COVID-19 that would have been operational in the fall of 2020. Another reported that work has been stopped on a building under construction to avoid spending extra money. Other comments referred to not being able to bring in outside crew to do work due to social distancing.

Financial services challenges were mentioned by 29% of respondents. The immediate problem reported was that of cash flow issues stemming from the loss of business sales with cancellation of orders. Their normal customers had closed their businesses due to COVID-19. Others reported challenges with local banks that were unable to file government forms due to confusion with correct filing procedures, particularly with requirements changing on a daily basis. Another respondent said that they were refinancing to buy out a partner and had not been able to close on the loan or to get an update from the title company due to COVID-19 and office closures. One respondent indicated that they had not yet had challenges with financial services, but would soon.

In terms of expectations for the coming months, 97% of ornamental fish respondents expected additional lost sales, 61% continued production challenges, 39% increased costs of production, and 48% labor challenges. Six percent of respondents reported increased demand for products. Overall, respondents expected continued decreased demand for their products, cash flow interruptions that will create major cash flow issues, and an excess of product without a place to hold it.

Other comments by respondents emphasized the uncertainty about future availability of equipment and repair parts as well as the lack of employees working to keep up with repairs and maintenance. As an example, one respondent could not get anyone to come out to repair pumps.

Other financial challenges reported focused on the ability to pay for leased land and equipment and the lack of sales revenue to cover basic bills such as rent, telephone, the electric bill, waste management, and bills from various vendors and suppliers. Concerns were expressed related to falling behind on payments on working capital loans and other credit payments. The speed with which low-interest loans were processed was mentioned as a concern, with a report that the farm had not qualified in the past for an SBA loan because they could obtain conventional loans; thus, low interest rates had not been available when they were entering their busy season in terms of spawning, shipping, and sales. The lack of manpower and lack of sales as well as having to cull animals that might out-grow current facilities were additional concerns.

Marketing of products

Extended holding of product that is ready to be sold can cause a variety of problems. Fifty-five percent of ornamental fish respondents indicated that holding market-sized product would make it less marketable. More specifically, 82% of ornamental fish respondents said that holding product would reduce the quantity of ornamental fish sold and 53% said that it would reduce the price received. Live products, such as those produced by ornamental producers, do not hold well and must be shipped fresh. Respondents reported that their fish have value by size and if they grow too large, they become less valuable and harder to sell. This will force them to reduce price for a fish that costs much

more to produce and will likely mean selling at a breakeven or lower price. Holding market ready fish was also reported to reduce quality due to the age of the product that have grown past premium market size. In other words, slow fish sales mean increased costs from holding fish longer but since they will grow out of market size ranges, they will have to discount prices and possibly sell below their costs of production.

Respondents reported other effects from holding market-ready fish. One respondent mentioned that predator control becomes harder if they cannot sell fish quickly enough because fish are more abundant and easier for predators to prey upon. One respondent reported that their facility has had to slow production to hold products that will have to be sold at a reduced price or risk being lost all together. For those raising plankton, market ready plankton will either expire or old cultures will collapse (die), depending on how long it will be before the product can be sold.

Increased Demand for Products

No ornamental fish respondents reported increased demand for their products and 6% expected demand for their products to increase. None of the few respondents who reported expecting demand for their products to increase could estimate the expected increase in sales.

Assistance to Farms/Businesses

The survey included questions on the types of assistance that might be helpful to the farm or business of respondents. Seventy-one percent of ornamental fish respondents indicated that federal assistance would increase the likelihood of survival of their farm or business. Another 45% said that assistance from the state, 19% from local government, and 26% from associations would be helpful.

When asked more specifically what types of assistance would be helpful, 35% said that loan guarantees, 32% waiving or delay of state fees, 26% specialty crop insurance, 19% said assistance with identifying new markets, and 13% that tariff relief would be helpful. Thirteen percent of ornamental fish respondents indicated that there were existing programs that their business did not qualify for, although 74% did not respond to this question.

Additional comments by ornamental fish respondents included a variety of suggestions on the type of assistance that would be of greatest help (Table 4). The most frequently mentioned type of assistance (29%) by ornamental fish respondents was the need for very immediate assistance in the form of cash payments or grants. This was followed by financing assistance (20%) that included debt forgiveness, USDA insurance or disaster programs (12%), market assistance (7%) relief from both tariffs and export regulations (7%), waiving state fees (7%), and other (1%), that included tax credits or breaks.

Table 4. Additional comments related to types of assistance reported by ornamental fish respondents that would be most useful.

Type of assistance	Ornamental fish respondents (%)
Cash payments, grants, credits, for expenses	29%
Financing assistance (guaranteed loans, debt forgiveness, deferred loan payments, exemption of interest, low-interest loans)	20%
USDA insurance or disaster programs	12%
Market assistance	7%
Relief from tariffs/export regulations	7%
Waiving state fees	7%
Other (tax credits or breaks)	1%

There were a number of comments related to the types of assistance that would be of most benefit. Several respondents commented that assistance needs to be in a timely manner because assistance received months from now will not be a help. Respondents pointed out that their sales season is short, just 4 to 5 months and had just begun at the time of the COVID-19 outbreak. As a result, they were at maximum debt at the time of the survey. Another respondent reported that disaster loans would have to be paid back. Their farm has been shut down at no fault of theirs and their monthly overhead is close to or as much as payroll for their small business. Small businesses need funds that will be forgiven for those expenses during this time,

such as utilities, phone, rent, and local vendor bills. It was the understanding of this respondent that only 2.5 months of average payroll will be forgiven. One respondent reported that something similar to the WHIP grant program or a modified NAP would be of help. Fifteen percent of respondents mentioned that assistance provided by USDA would be most helpful. Some referred to previous assistance through USDA with crop insurance or disaster programs, although others mentioned that COVID-19 was the fourth disaster in recent years (forest fires, hurricanes), but that crop insurance had yet to be either applicable or that it failed to protect them from catastrophic loss of inventory or spoilage due to lost sales. Others mentioned that there are no crop insurance programs available to them other than NAP for disasters.

One respondent reported that they did not think there would be any assistance locally and that associations should do all they can to lobby for SBA loans and loan forgiveness. Another commented that there was a need to stop politicizing the situation and focus on solutions. A comment was made that FTFFA could lobby to pool resources for all farmers who are losing sales and revenue.

One type of financial assistance mentioned was that of freezing rent and mortgages for commercial properties. Other comments pointed out that small businesses were taking huge losses right now and that extreme government assistance was necessary to prevent them from going out of business completely. One respondent mentioned that, since the pandemic has been declared to be a national disaster, disaster grants through FSA for effects on aquaculture through the coronavirus pandemic would be helpful.

One respondent commented that assistance with selling product directly to the public, even if on a temporary basis would be helpful, particularly assistance with finding people in the local area willing to buy their products. Others mentioned that with everything being closed, the only thing that might help would be internet sales that would deliver straight to the door, but also mentioned that if consumers are not making any money they will be less likely to worry about buying ornamental fish.

There were other comments about not knowing what assistance would be of help and also that any type of assistance would be of help.

Other respondents emphasized how dire the situation is for them, that the current situation has potential to put them out of business very quickly. Another respondent mentioned that it would end a four-generation tradition.

Discussion and Conclusion

Responses by ornamental fish farms to the Quarter 1 survey show that U.S. ornamental fish farmers have been impacted severely by the COVID-19 pandemic. Eighty-seven percent of ornamental fish respondents had had sales orders canceled. While lost sales were the immediate impact, other challenges were mentioned related to increasing production costs, financing, and other essential services that are critical to survival of the farm or business. Effects on the ornamental fish industry will be felt more in the coming months if sales continue to be reduced, with only 13% indicating that they would survive over the next 3 months without external assistance. Given that survey results showed that there will be longer-term effects on the U.S. ornamental fish industry, it will be important to continue to monitor changes throughout the year. Key findings from ornamental fish farm and business respondents include:

- *94% have been impacted by COVID-19*
- *87% have had private orders/contracts canceled*
- *30% have or will soon have to lay off employees*
- *97% have experienced lost sales*
- *13% can survive 3 months without external intervention*

References

van Senten, J., Smith, M.A., and Engle, C.R. 2020. Impacts of COVID-19 on U.S. aquaculture, aquaponics, and allied businesses: Quarter 1 Results. AAEC-218NP. Available at: https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/AAEC/aec-218/AAEC-218.pdf

Visit Virginia Cooperative Extension: ext.vt.edu

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

2020

VCE-AAEC-237NP
VSG-20-15

Appendix

Summary of COVID-19 impacts on U.S. ornamental fish farms

Quarter 1 Results

Carole R. Engle, Engle-Stone Aquatics, LLC, Virginia Tech

Jonathan van Senten, Virginia Tech

Matthew A. Smith, The Ohio State University

Charles Clark, Virginia Tech

Shannon Fluharty, Virginia Tech

Michael H. Schwarz, Virginia Seafood AREC



Contents

Q1. Has your farm or business been impacted by the coronavirus disease (COVID-19)?..... 5

Q1.1. Does your farm or business expect to be affected by the coronavirus disease (COVID-19) in 2020?5

Q2. Has your farm or business had government (state or federal) contracts canceled for 2020 because of the coronavirus disease (COVID-19)?..... 6

Q3. Has your farm or business had private contracts / orders canceled for 2020 because of the coronavirus disease (COVID-19)? 6

Q4. Has your farm or business had to lay off any employees due to the coronavirus disease (COVID-19)? 7

Q4.1. Are any of the employees that your farm or business had to, or will have to, lay off due to the coronavirus disease (COVID-19) designated as "Short-Time" or "Shared-Work" employees? 7

Q4.2. How many employees has your farm or business had to lay off in response to the coronavirus disease (COVID-19)? 8

Q4.3. How many weeks before your farm or business will have to make a decision to lay off employees, in response to the coronavirus disease (COVID-19)? 8

Q4.4. How many employees do you estimate your farm or business will have to lay off in response to the coronavirus disease (COVID-19)? 9

Q5. Has your farm or business had any employees miss work due to the coronavirus disease (COVID-19)? 9

Q5.1. In total, approximately how many days have any employees in your farm or business missed work due to the coronavirus disease (COVID-19)?..... 10

Q6. Does your farm or business make use of H2A or H2B workers?..... 10

Q6.1. Has your farm or business been able to secure H2A and H2B workers during the coronavirus disease (COVID-19) pandemic?..... 11

Q6.2. Is your farm or business currently at risk of losing H2A or H2B workers due to the coronavirus disease (COVID-19) pandemic?..... 12

Q7. Has your farm or business experienced any of the following as a result of the coronavirus disease (COVID-19) in 2020? Please select all that apply..... 12

Q7.1. Has your farm or business experienced lost sales to international or export markets (outside of the United States), as a result of the coronavirus disease (COVID-19)?..... 13

Q7.2. If your farm or business has experienced lost sales as a result of the coronavirus disease (COVID-19), please estimate the value of lost sales? 14

Q7.3. If your farm or business has experienced production challenges (not related to labor) as a result of the coronavirus disease (COVID-19), can those challenges be specified? Please select all that apply. 15

Q7.6. If your farm or business has experienced increased demand for products as a result of the coronavirus disease (COVID-19), please estimate the value of those effects on sales? 16

Q8. Does your farm or business expect to experience any of the following as a result of the coronavirus disease (COVID-19) in 2020? Please select all that apply 16

Q8.1. Does your farm or business expect to experience lost sales to international or export markets (outside of the United States), as a result of the coronavirus disease (COVID-19)? 17

Q8.2. Does your farm or business expect to experience lost sales as a result of the coronavirus disease (COVID-19), please estimate the value of lost sales? 18

Q8.3. Does your farm or business expect to experience production challenges (not related to labor) as a result of the coronavirus disease (COVID-19), can those challenges be specified? Please select all that apply. 19

Q8.6. Does your farm or business expect to experience increased demand for products as a result of the coronavirus disease (COVID-19), please estimate the value of those effects on sales? 20

Q9. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 3 (three) months? 21

Q10. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 6 (six) months?..... 21

Q11. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 12 (twelve) months?..... 22

Q12. How many months can your farm or business survive without sales, as a result of the coronavirus disease (COVID-19), before suffering longer term cash flow effects? 22

Q13. Will holding market ready product, as a result of the coronavirus disease (COVID-19), make it less marketable?..... 23

Q13.1. Will holding market ready product, as a result of the coronavirus disease (COVID-19), result in: Please select all that apply. 23

Q14. How many months can your farm or business hold market ready product, as a result of the coronavirus disease (COVID-19), before it becomes an issue for new crops or planting?..... 24

Q16. Are there specific steps or types of assistance that would increase the likelihood for your farm or business to survive? Please select all that apply. 24

Q17. Would assistance with any of the following be helpful to your farm or business right now? Please select all that apply. 25

Q18. Are there any existing programs that your aquaculture, aquaponics, or allied business does not currently qualify for, that would increase the likelihood of survival of your farm or business?..... 25

Q19. What is the primary product that your farm or business produces? 26

Q19.1. Please indicate which is the major species of foodfish raised by your farm or business: 27

Q20. How does your farm or business primarily market or sell aquaculture / aquaponics products? 28

Q21. Please indicate the scale of your farm or business by annual sales volume before the effects of coronavirus disease (COVID-19): 29

Q22. In which USDA defined Aquaculture Region is your farm or business located? 30

Overview

On March 23rd, 2020 Virginia Tech Seafood AREC and The Ohio State University Extension initiated an online survey of the U.S. aquaculture, aquaponics, and allied businesses. This survey was designed to capture and quantify the effects of the coronavirus disease (COVID-19) on the aquaculture, aquaponics, and allied industries. The survey closed April 10th, 2020 at 11:59 pm. The survey will be distributed at the conclusion of every quarter for 2020, to attempt to capture the evolving impacts of COVID-19 over time.

Survey methods are detailed in the Virginia Cooperative Extension Fact Sheet VCE-AAEC-218, available at: https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html.

This report is a supplemental report to the **Ornamental Fish Report Summary, Quarter 1** that summarizes results of **ornamental farm** respondents.

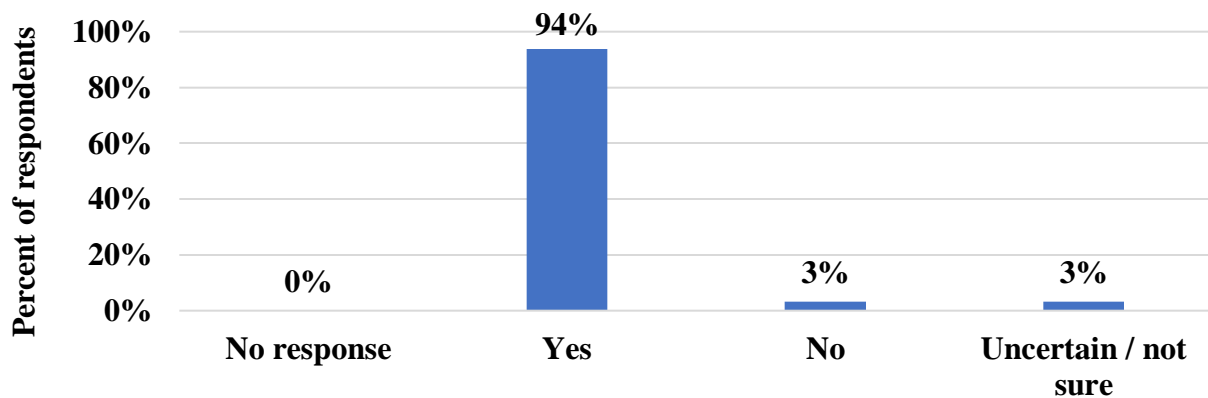
Survey results for each question

The number of respondents to each question presented in this summary is denoted as (n =).

Q1. Has your farm or business been impacted by the coronavirus disease (COVID-19)?

(n = 32)

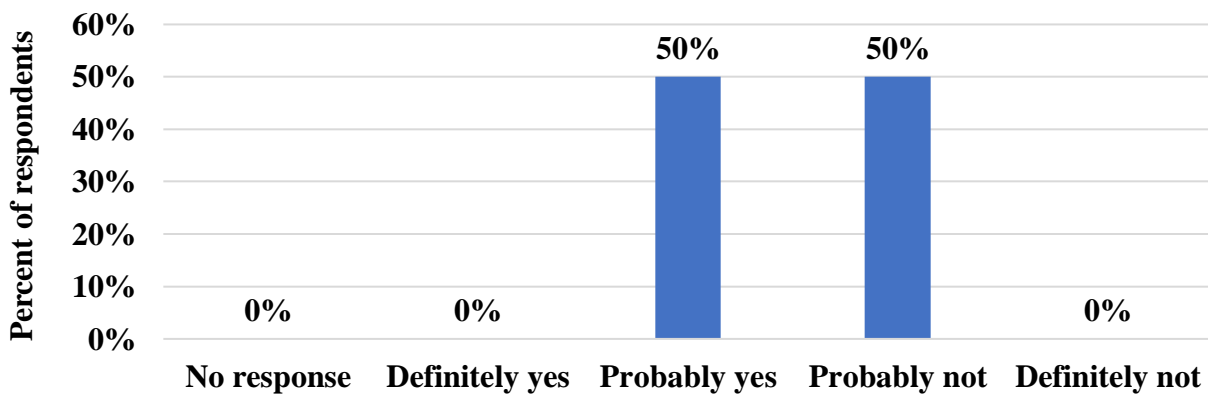
- No response : 0%
- Yes : 94%
- No : 3%
- Uncertain / Not Sure : 3%



Q1.1. Does your farm or business expect to be affected by the coronavirus disease (COVID-19) in 2020?

(n = 2)

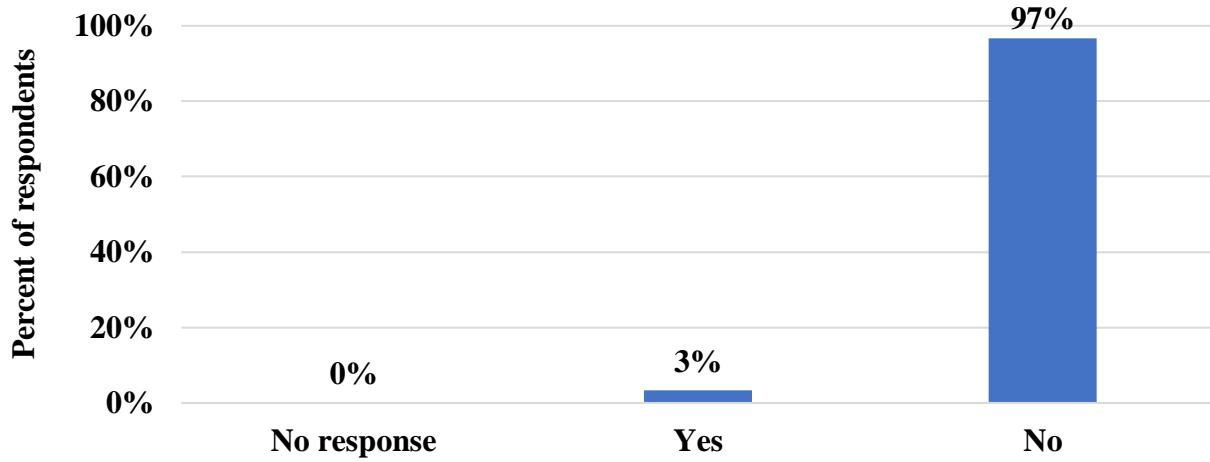
- No response : 0%
- Definitely yes : 0%
- Probably yes : 50%
- Probably not : 50%
- Definitely not : 0%



Q2. Has your farm or business had government (state or federal) contracts canceled for 2020 because of the coronavirus disease (COVID-19)?

(n = 30)

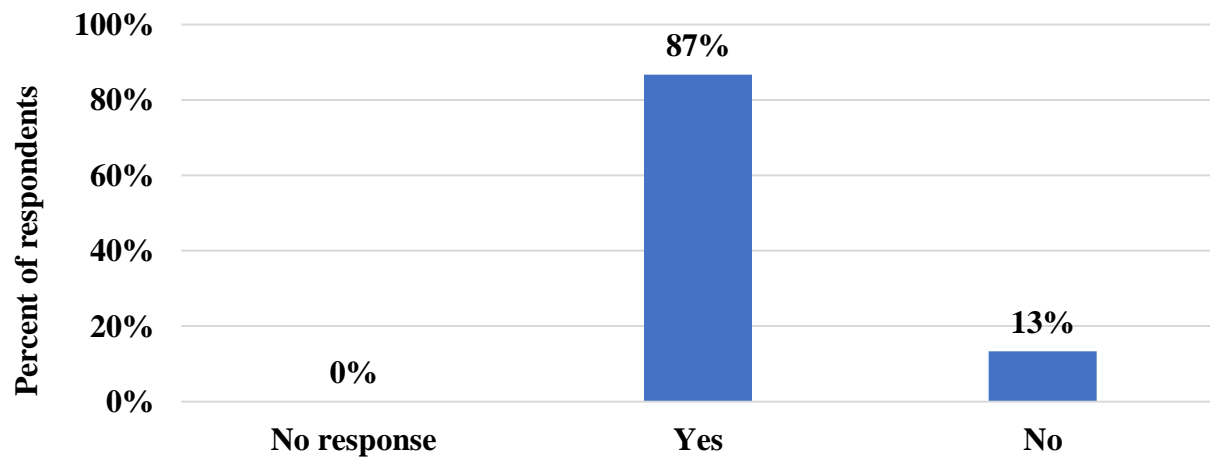
- No response : 0%
- Yes : 3%
- No : 97%



Q3. Has your farm or business had private contracts / orders canceled for 2020 because of the coronavirus disease (COVID-19)?

(n = 30)

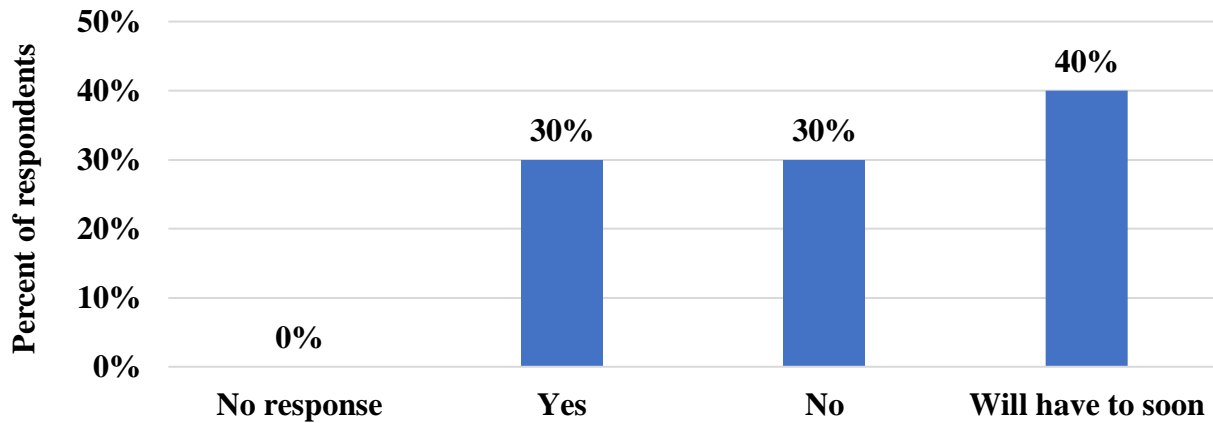
- No response : 0%
- Yes : 87%
- No : 13%



Q4. Has your farm or business had to lay off any employees due to the coronavirus disease (COVID-19)?

(n = 30)

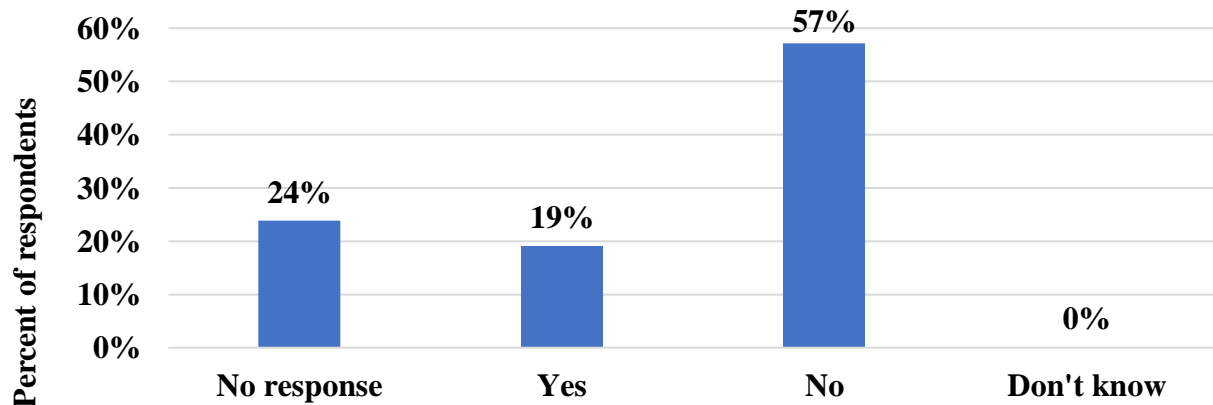
- No response : 0%
- Yes : 30%
- No : 30%
- Will have to soon : 40%



Q4.1. Are any of the employees that your farm or business had to, or will have to, lay off due to the coronavirus disease (COVID-19) designated as "Short-Time" or "Shared-Work" employees?

(n = 21)

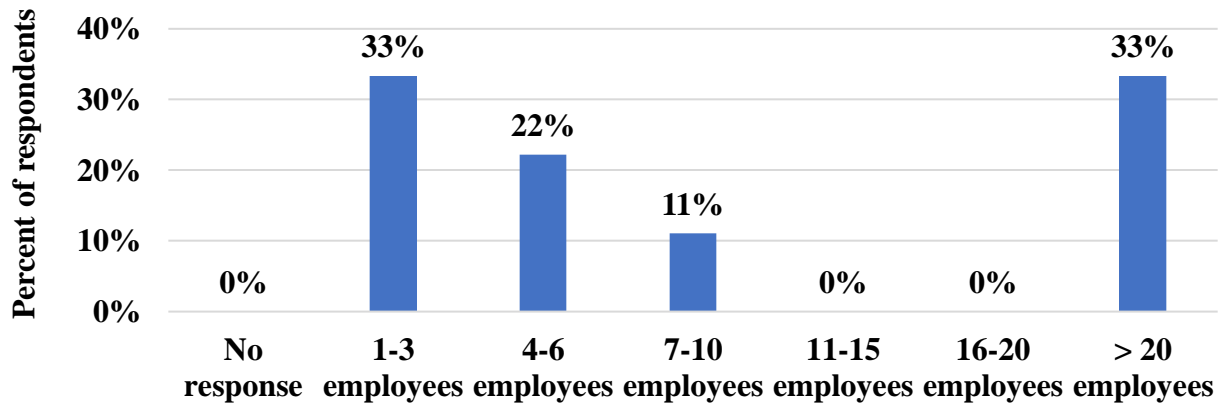
- No response : 24%
- Yes : 19%
- No : 57%
- Don't know : 0%



Q4.2. How many employees has your farm or business had to lay off in response to the coronavirus disease (COVID-19)?

(n = 9)

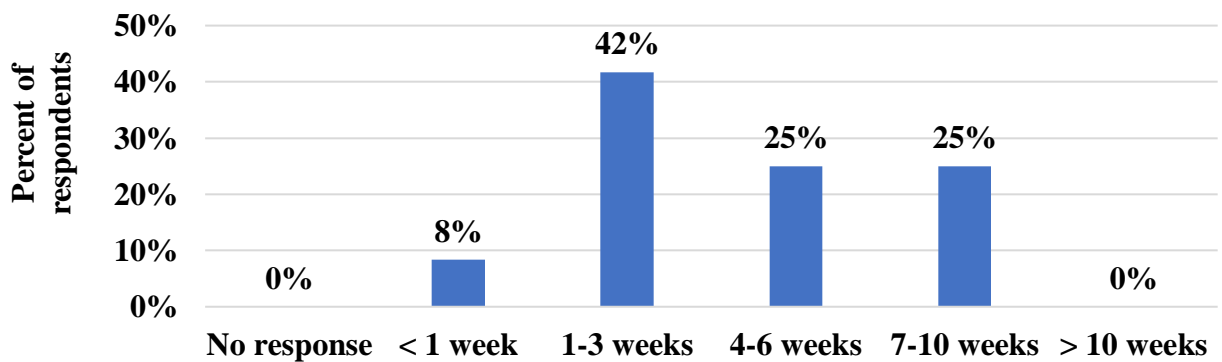
- No response : 0%
- 1 – 3 employees : 33%
- 4 – 6 employees : 22%
- 7 – 10 employees : 11%
- 11 – 15 employees : 0%
- 16 – 20 employees : 0%
- More than 20 employees : 33%



Q4.3. How many weeks before your farm or business will have to make a decision to lay off employees, in response to the coronavirus disease (COVID-19)?

(n = 12)

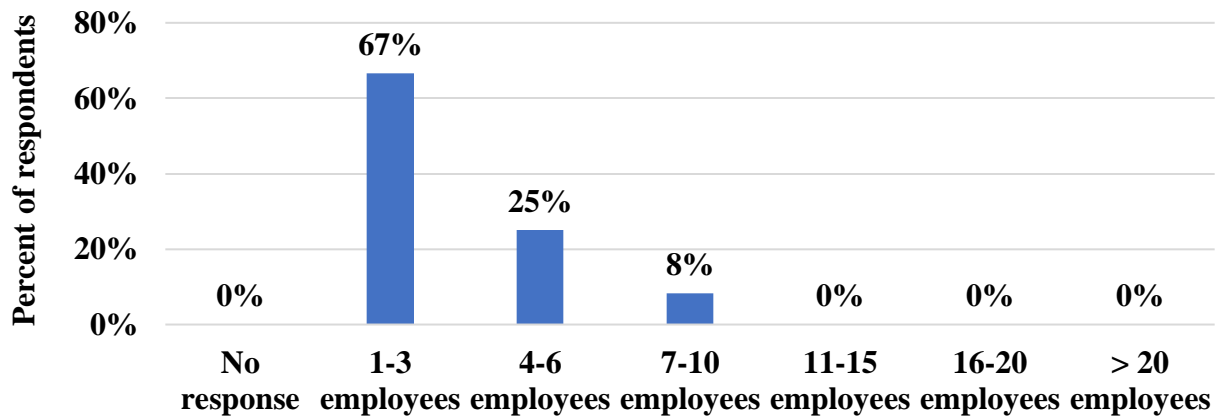
- No response : 0%
- Less than 1 week : 8%
- 1 – 3 weeks : 42%
- 4 – 6 weeks : 25%
- 7 – 10 weeks : 25%
- More than 10 weeks : 0%



Q4.4. How many employees do you estimate your farm or business will have to lay off in response to the coronavirus disease (COVID-19)?

(n = 12)

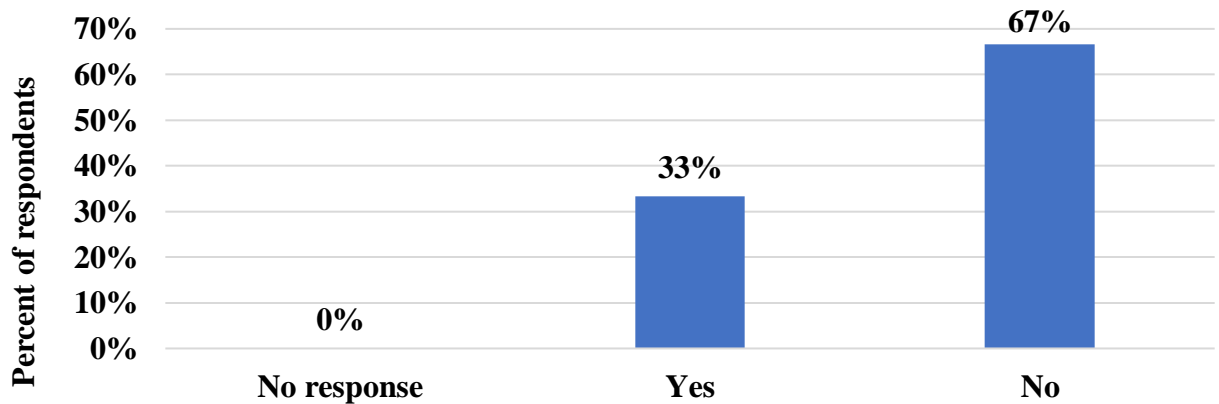
- No response : 0%
- 1 – 3 employees : 67%
- 4 – 6 employees : 25%
- 7 – 10 employees : 8%
- 11 – 15 employees : 0%
- 16 – 20 employees : 0%
- More than 20 employees : 0%



Q5. Has your farm or business had any employees miss work due to the coronavirus disease (COVID-30)?

(n = 30)

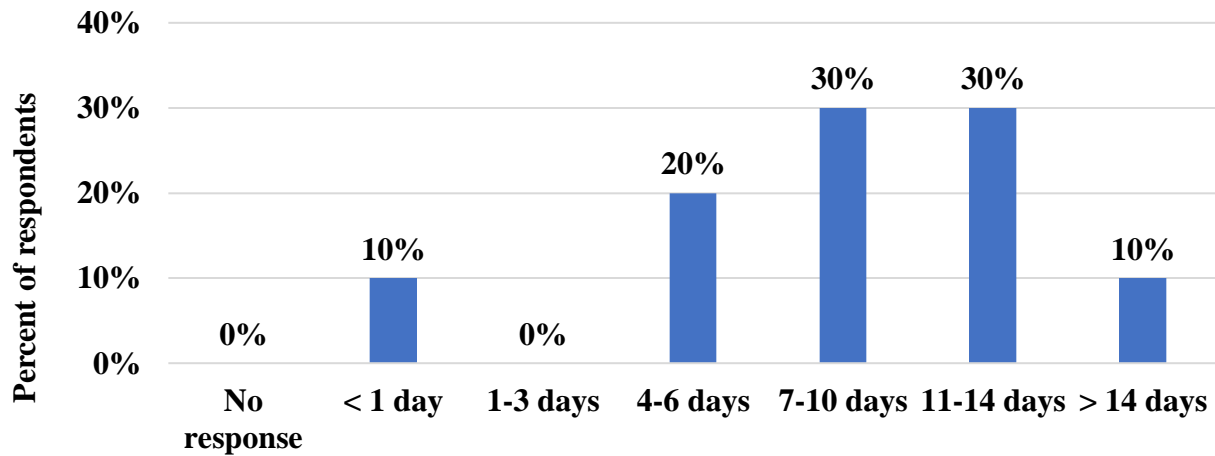
- No response : 0%
- Yes : 33%
- No : 67%



Q5.1. In total, approximately how many days have any employees in your farm or business missed work due to the coronavirus disease (COVID-19)?

(n = 10)

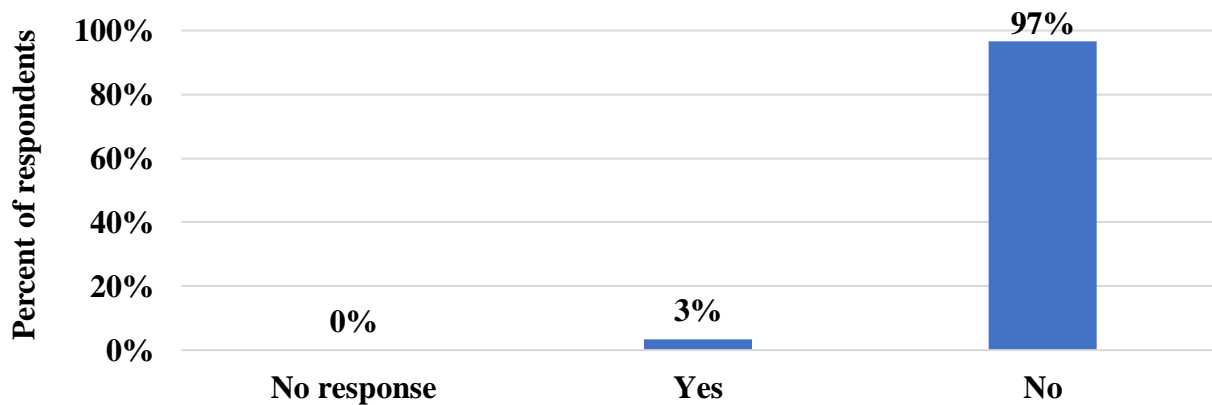
- No response : 0%
- Less than a day : 10%
- 1 -3 days : 0%
- 4 – 6 days : 20%
- 7 – 10 days : 30%
- 11 – 14 days : 30%
- More than 14 days : 10%



Q6. Does your farm or business make use of H2A or H2B workers?

(n = 30)

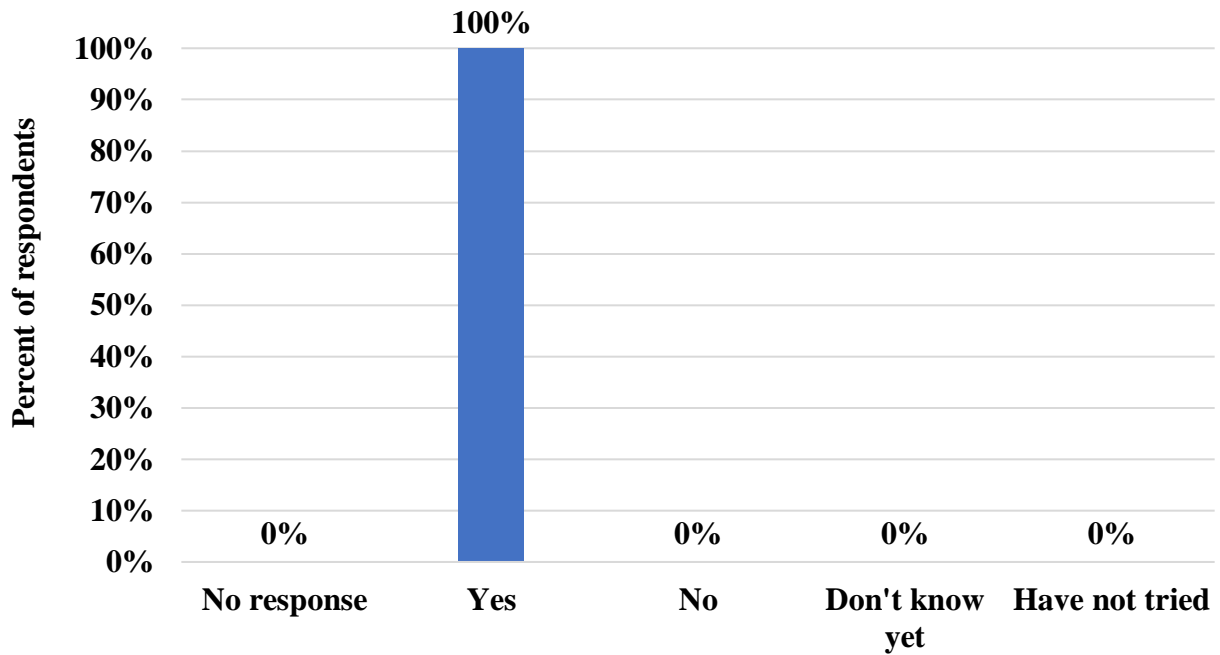
- No response : 0%
- Yes : 3%
- No : 97%



Q6.1. Has your farm or business been able to secure H2A and H2B workers during the coronavirus disease (COVID-19) pandemic?

(n = 1)

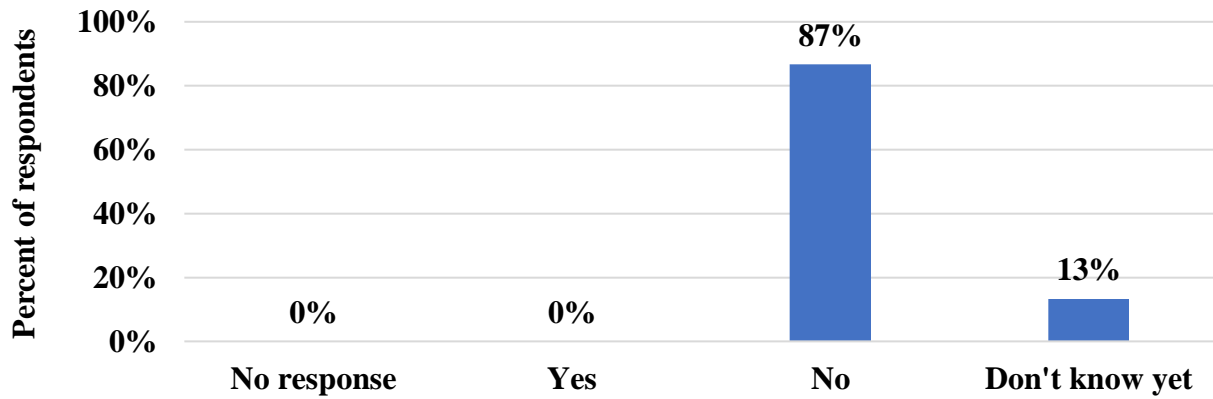
- No response : 0%
- Yes : 100%
- No : 0%
- Don't know yet : 0%
- Have not tried : 0%



Q6.2. Is your farm or business currently at risk of losing H2A or H2B workers due to the coronavirus disease (COVID-19) pandemic?

(n = 30)

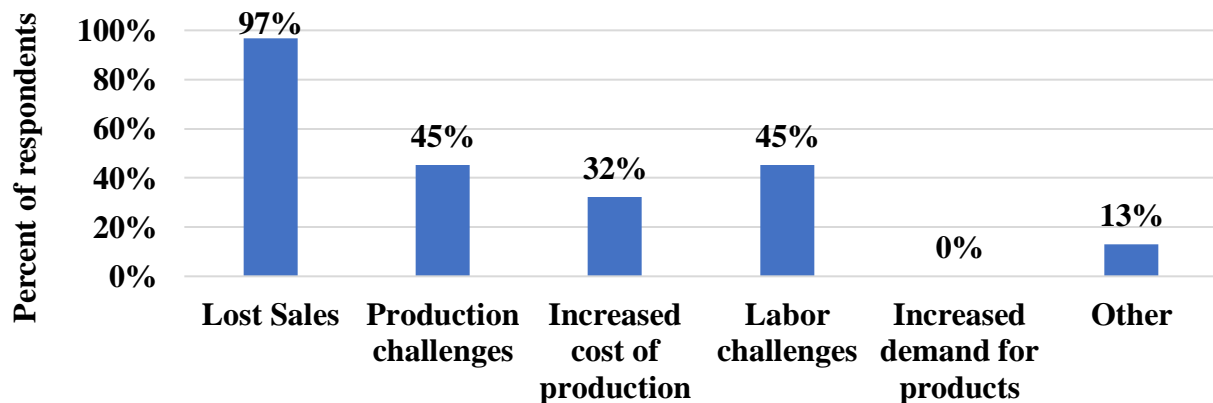
- No response : 0%
- Yes : 0%
- No : 87%
- Don't know yet : 13%



Q7. Has your farm or business experienced any of the following as a result of the coronavirus disease (COVID-19) in 2020? Please select all that apply.

(n = 31)

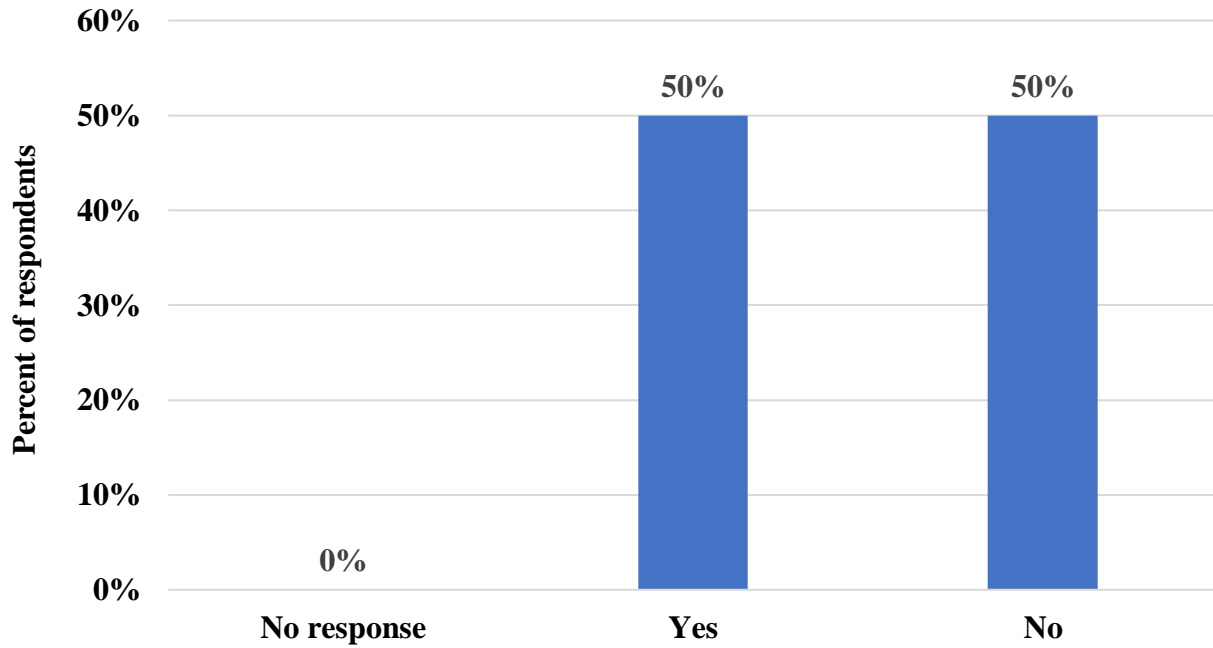
- Lost sales : 97%
- Production challenges (not related to labor) : 45%
- Increased cost of production : 32%
- Labor challenges : 45%
- Increased demand for products : 0%
- Other : 13%



Q7.1. Has your farm or business experienced lost sales to international or export markets (outside of the United States), as a result of the coronavirus disease (COVID-19)?

(n = 30)

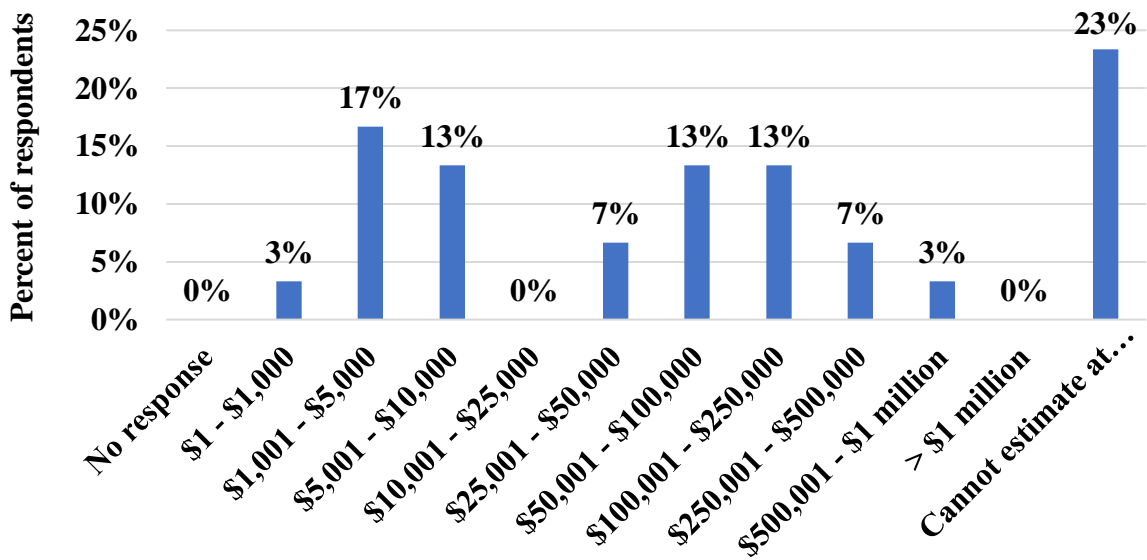
- No response : 0%
- Yes : 50%
- No : 50%



Q7.2. If your farm or business has experienced lost sales as a result of the coronavirus disease (COVID-19), please estimate the value of lost sales?

(n = 30)

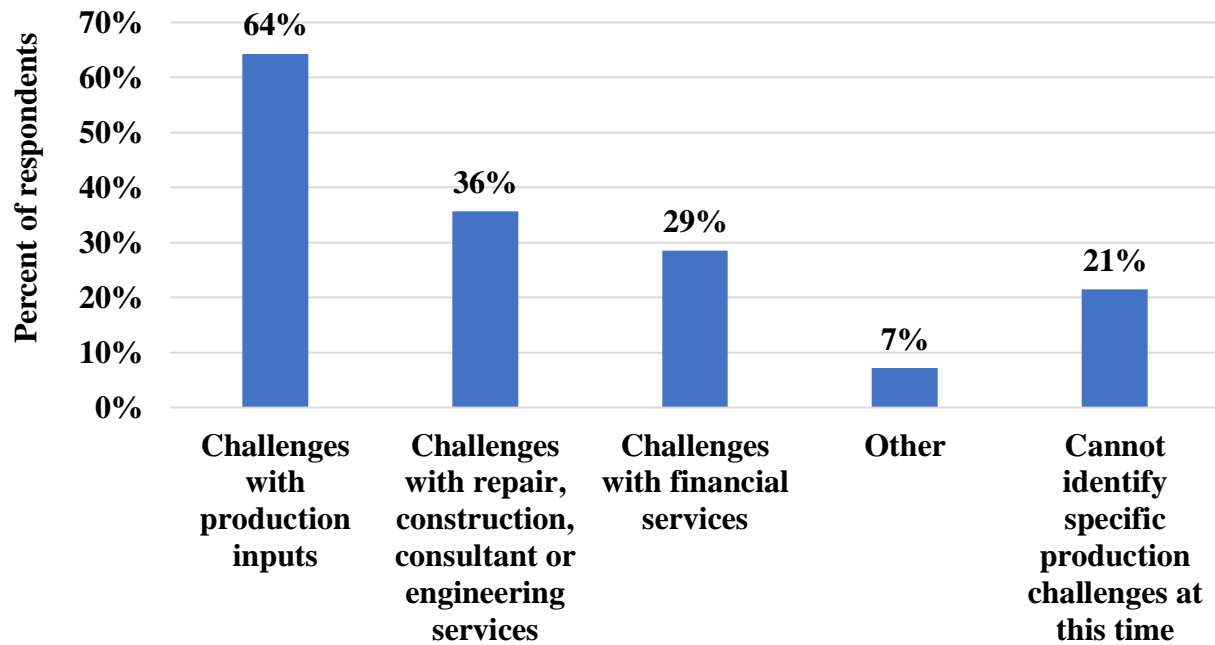
- No response : 0%
- \$1 - \$1,000 : 3%
- \$1,001 - \$5,000 : 17%
- \$5,001 - \$10,000 : 13%
- \$10,001 - \$25,000 : 0%
- \$25,001 - \$50,000 : 7%
- \$50,001 - \$100,000 : 13%
- \$100,001 - \$250,000 : 13%
- \$250,001 - \$500,000 : 7%
- \$500,001 - \$ 1million : 3%
- Greater than \$1 million : 0%
- Cannot estimate at this time : 23%



Q7.3. If your farm or business has experienced production challenges (not related to labor) as a result of the coronavirus disease (COVID-19), can those challenges be specified? Please select all that apply.

(n = 14)

- Challenges with production inputs (feed, chemicals, therapeutants, etc.) : 64%
- Challenges with repair, construction, consultant or engineering services : 36%
- Challenges with financial services (operating loans, leases, etc.) : 29%
- Other : 7%
- Cannot identify specific production challenges at this time : 21%



Q7.6. If your farm or business has experienced increased demand for products as a result of the coronavirus disease (COVID-19), please estimate the value of those effects on sales?

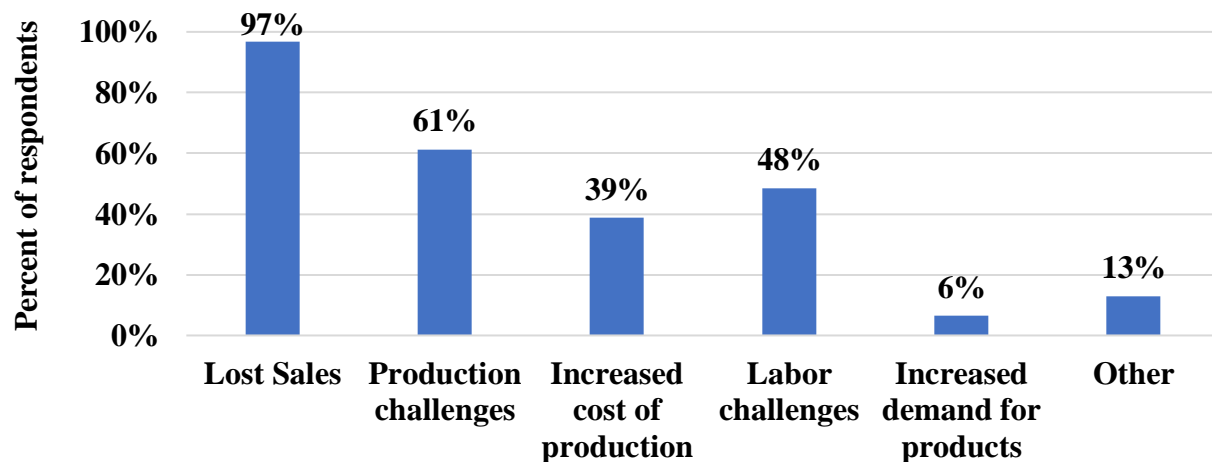
(n = 0)

- No response : NA
- \$1 - \$1,000 : NA
- \$1,001 - \$5,000 : NA
- \$5,001 - \$10,000 : NA
- \$10,001 - \$25,000 : NA
- \$25,001 - \$50,000 : NA
- \$50,001 - \$100,000 : NA
- \$100,001 - \$250,000 : NA
- \$250,001 - \$500,000 : NA
- \$500,001 - \$ 1million : NA
- Greater than \$1 million : NA
- Cannot estimate at this time : NA

Q8. Does your farm or business expect to experience any of the following as a result of the coronavirus disease (COVID-19) in 2020? Please select all that apply.

(n = 31)

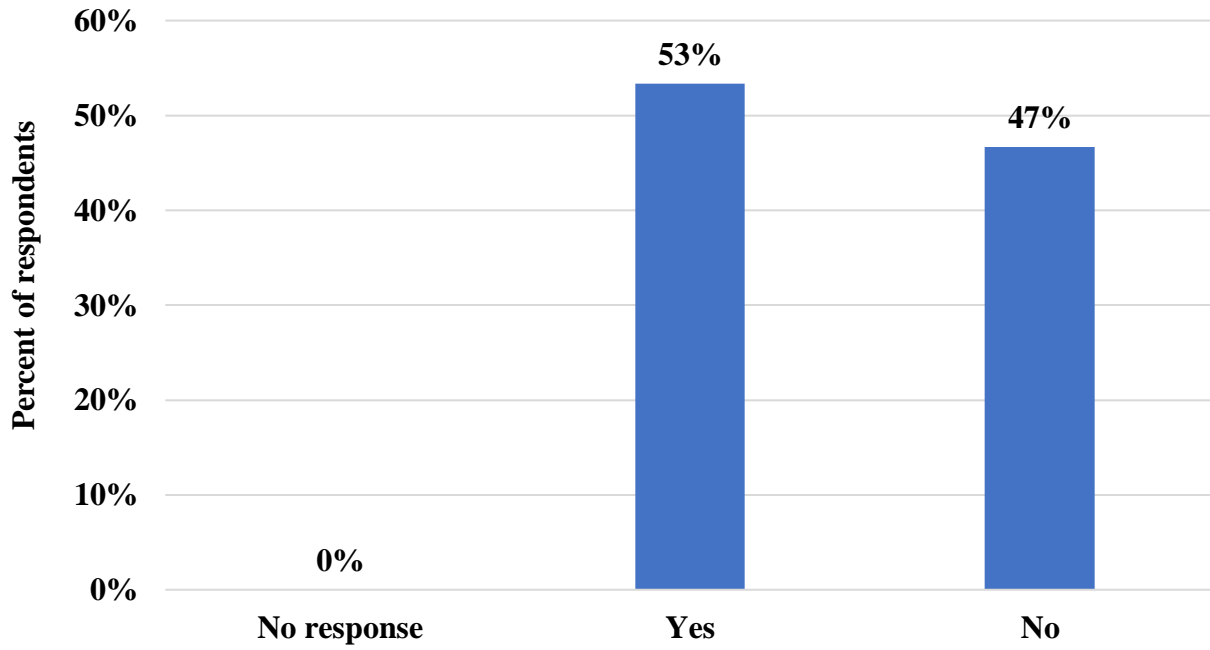
- Lost sales : 97%
- Production challenges (not related to labor) : 61%
- Increased cost of production : 39%
- Labor challenges : 48%
- Increased demand for products : 6%
- Other : 13%



Q8.1. Does your farm or business expect to experience lost sales to international or export markets (outside of the United States), as a result of the coronavirus disease (COVID-19)?

(n = 30)

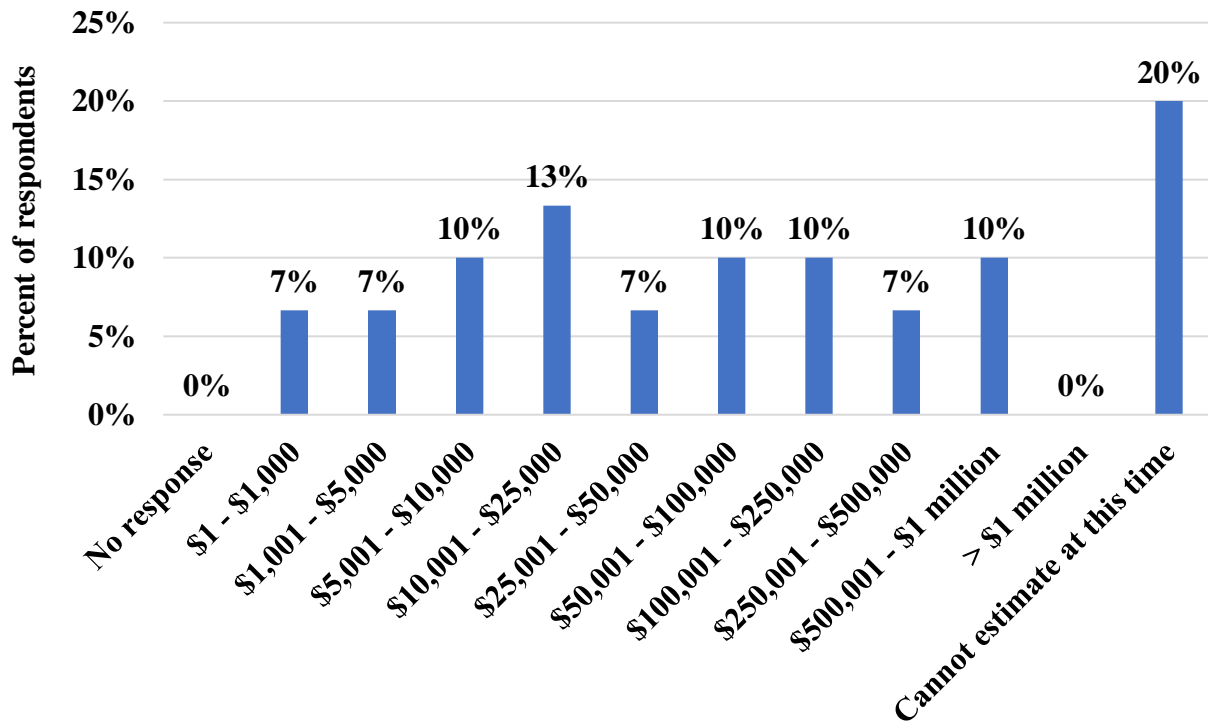
- No response : 0%
- Yes : 53%
- No : 47%



Q8.2. Does your farm or business expect to experience lost sales as a result of the coronavirus disease (COVID-19), please estimate the value of lost sales?

(n = 30)

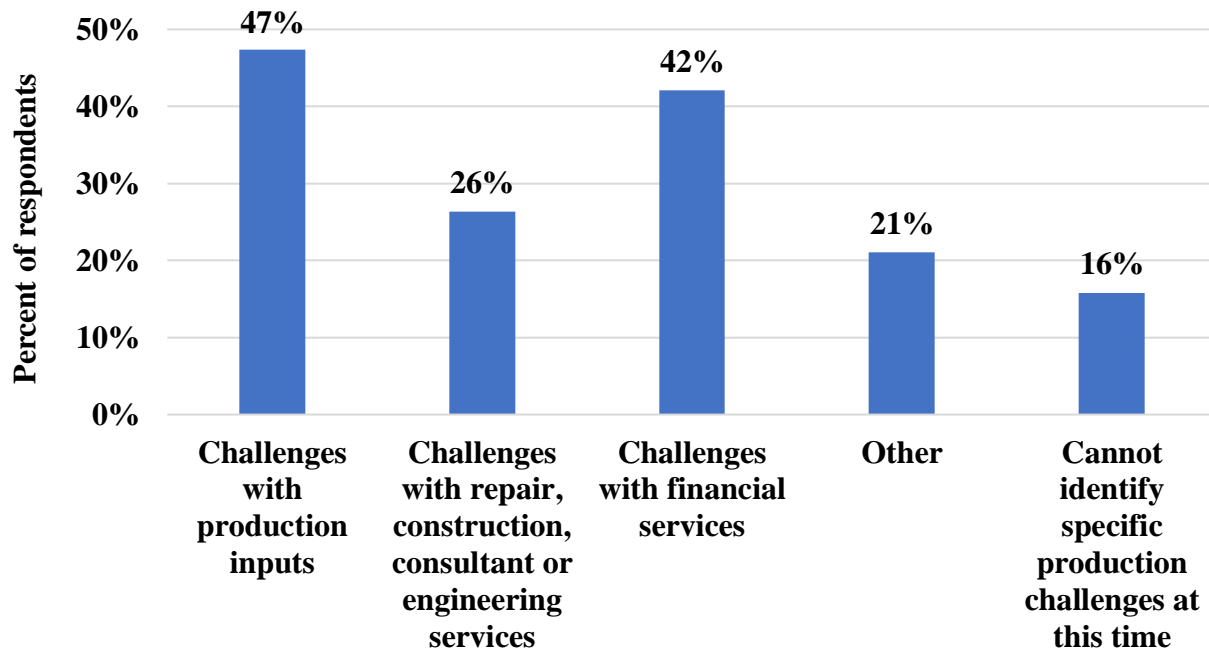
- No response : 0%
- \$1 - \$1,000 : 7%
- \$1,001 - \$5,000 : 7%
- \$5,001 - \$10,000 : 10%
- \$10,001 - \$25,000 : 13%
- \$25,001 - \$50,000 : 7%
- \$50,001 - \$100,000 : 10%
- \$100,001 - \$250,000 : 10%
- \$250,001 - \$500,000 : 7%
- \$500,001 - \$ 1million : 10%
- Greater than \$1 million : 0%
- Cannot estimate at this time : 20%



Q8.3. Does your farm or business expect to experience production challenges (not related to labor) as a result of the coronavirus disease (COVID-19), can those challenges be specified? Please select all that apply.

(n = 19)

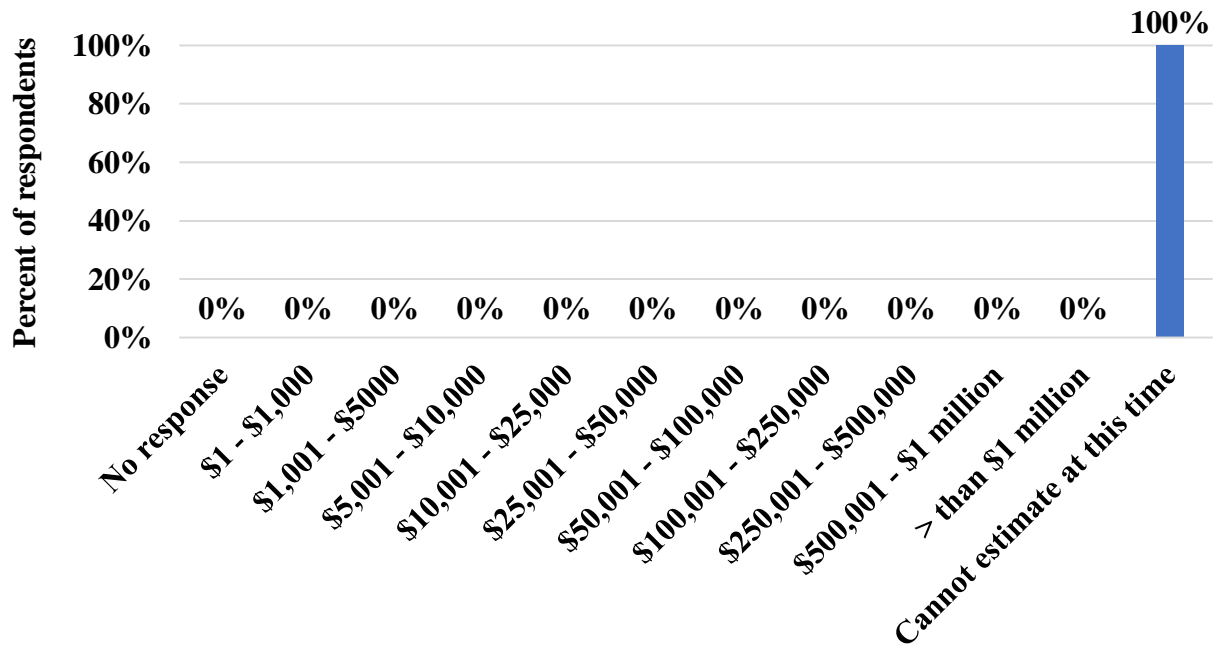
- Challenges with production inputs (feed, chemicals, therapeutants, etc.) : 47%
- Challenges with repair, construction, consultant or engineering services : 26%
- Challenges with financial services (operating loans, leases, etc.) : 42%
- Other : 21%
- Cannot identify specific production challenges at this time : 16%



Q8.6. Does your farm or business expect to experience increased demand for products as a result of the coronavirus disease (COVID-19), please estimate the value of those effects on sales?

(n = 2)

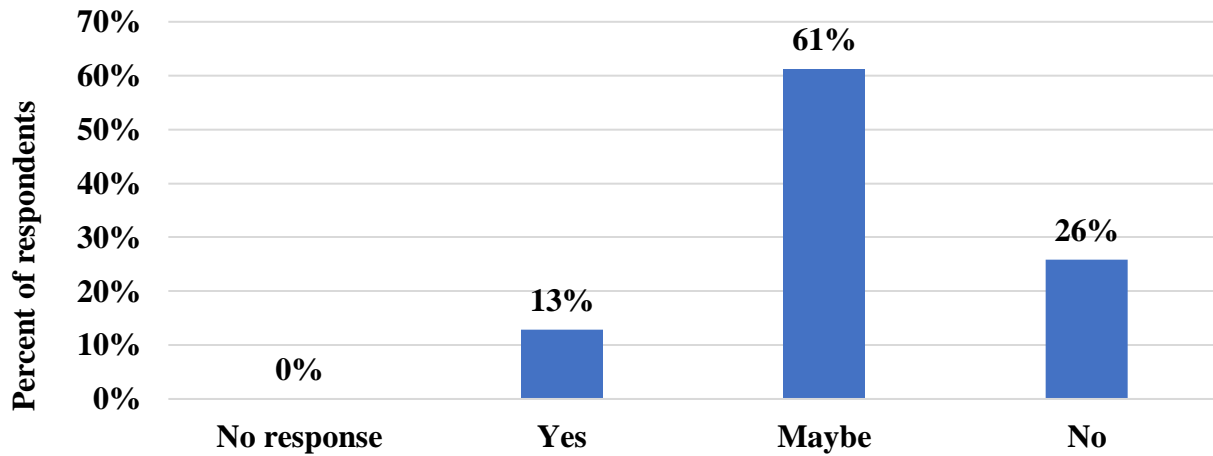
- No response : 0%
- \$1 - \$1,000 : 0%
- \$1,001 - \$5,000 : 0%
- \$5,001 - \$10,000 : 0%
- \$10,001 - \$25,000 : 0%
- \$25,001 - \$50,000 : 0%
- \$50,001 - \$100,000 : 0%
- \$100,001 - \$250,000 : 0%
- \$250,001 - \$500,000 : 0%
- \$500,001 - \$ 1million : 0%
- Greater than \$1 million : 0%
- Cannot estimate at this time : 100%



Q9. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 3 (three) months?

(n = 31)

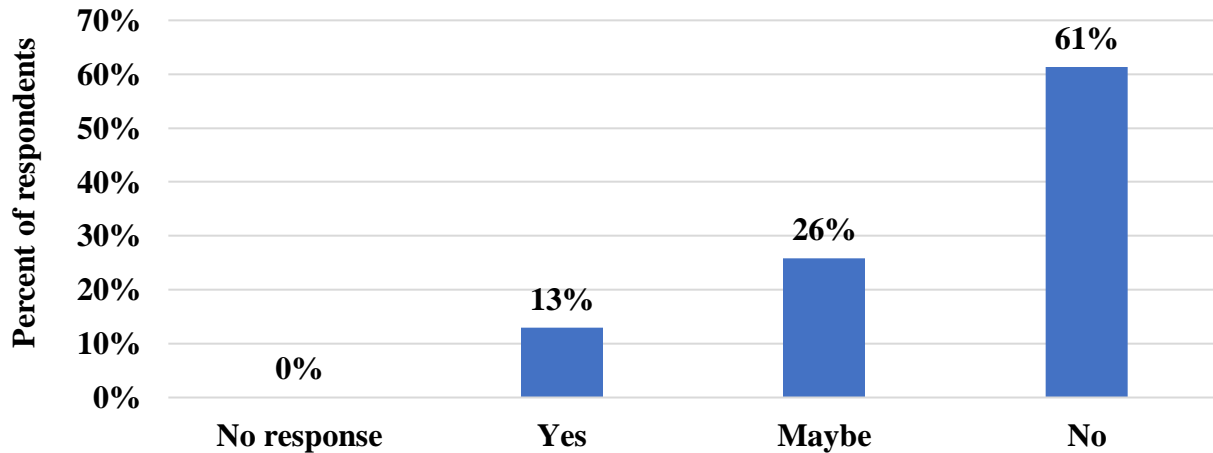
- No response : 0%
- Yes : 13%
- Maybe : 61%
- No : 26%



Q10. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 6 (six) months?

(n = 31)

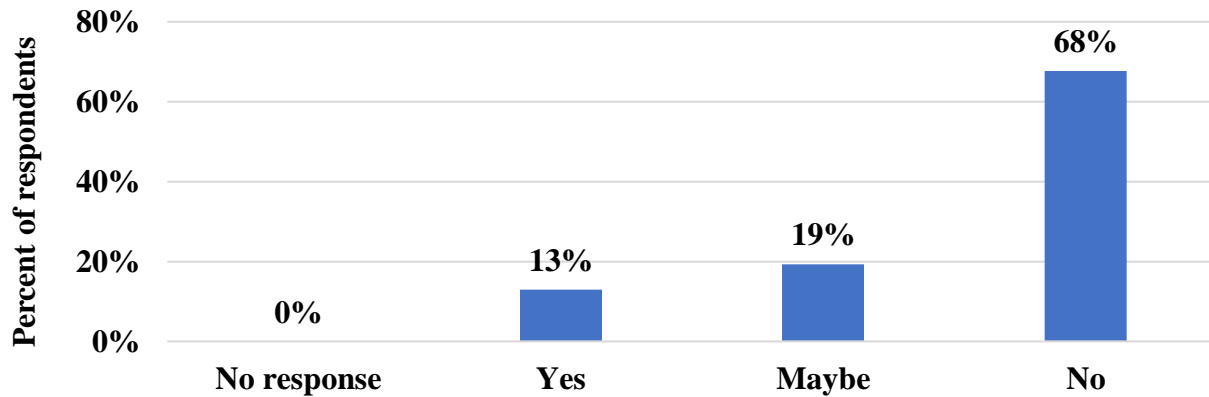
- No response : 0%
- Yes : 13%
- Maybe : 26%
- No : 61%



Q11. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 12 (twelve) months?

(n = 31)

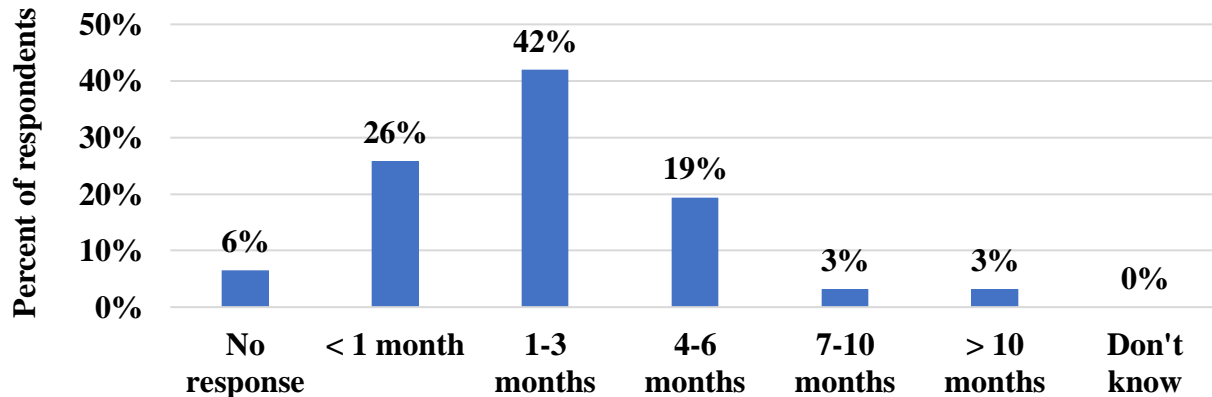
- No response : 0%
- Yes : 13%
- Maybe : 19%
- No : 68%



Q12. How many months can your farm or business survive without sales, as a result of the coronavirus disease (COVID-19), before suffering longer term cash flow effects?

(n = 31)

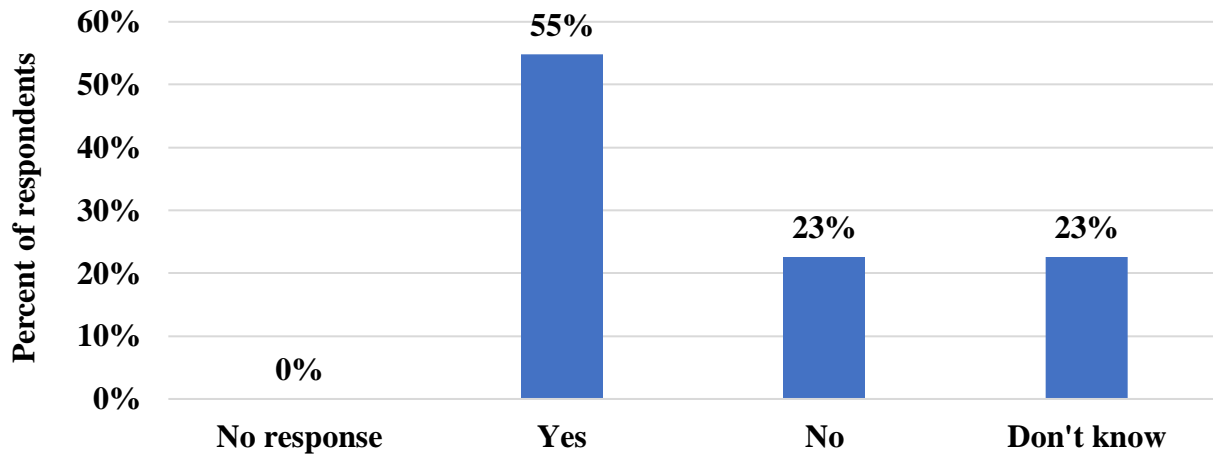
- No response : 6%
- Less than 1 month : 26%
- 1 – 3 months : 42%
- 4 – 6 months : 19%
- 7 – 10 months : 3%
- More than 10 months : 3%
- Do not know : 0%



Q13. Will holding market ready product, as a result of the coronavirus disease (COVID-19), make it less marketable?

(n = 31)

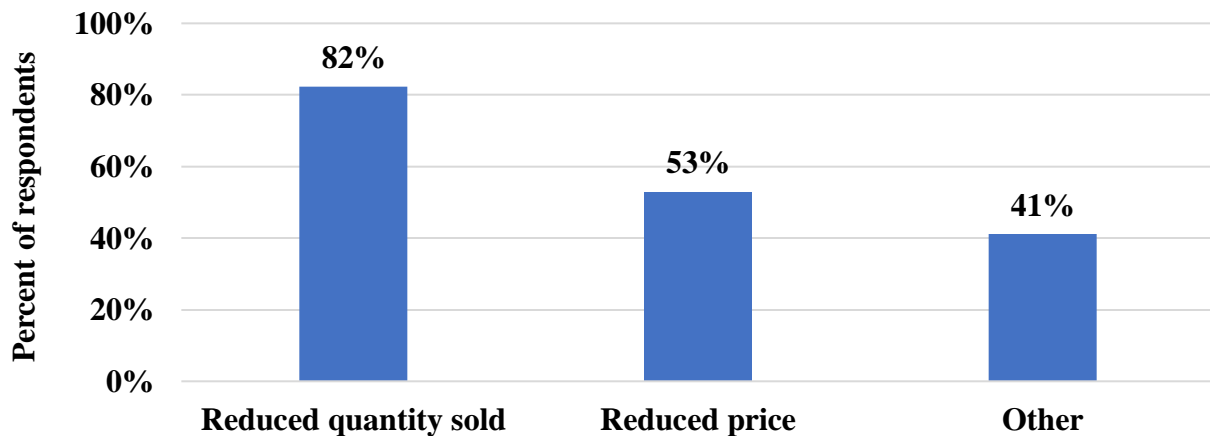
- No response : 0%
- Yes : 55%
- No : 23%
- Don't know : 23%



Q13.1. Will holding market ready product, as a result of the coronavirus disease (COVID-19), result in: Please select all that apply.

(n = 17)

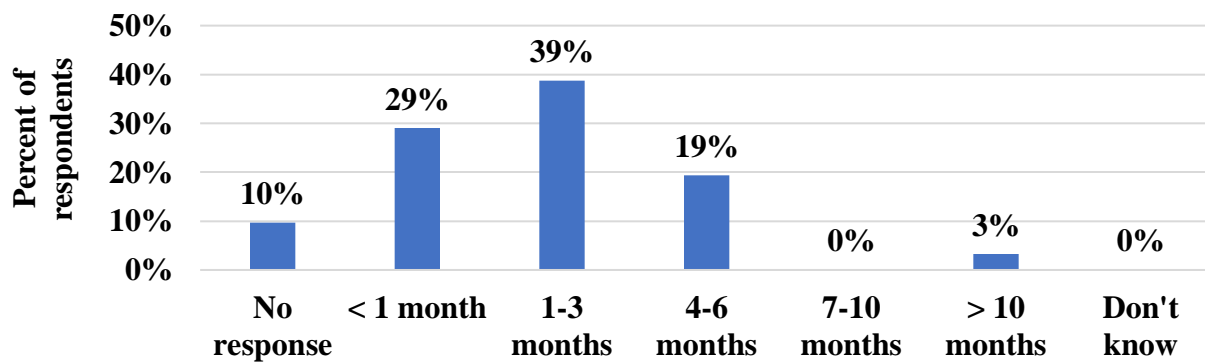
- Reduced quantity sold : 82%
- Reduced price : 53%
- Other : 41%



Q14. How many months can your farm or business hold market ready product, as a result of the coronavirus disease (COVID-19), before it becomes an issue for new crops or planting?

(n = 31)

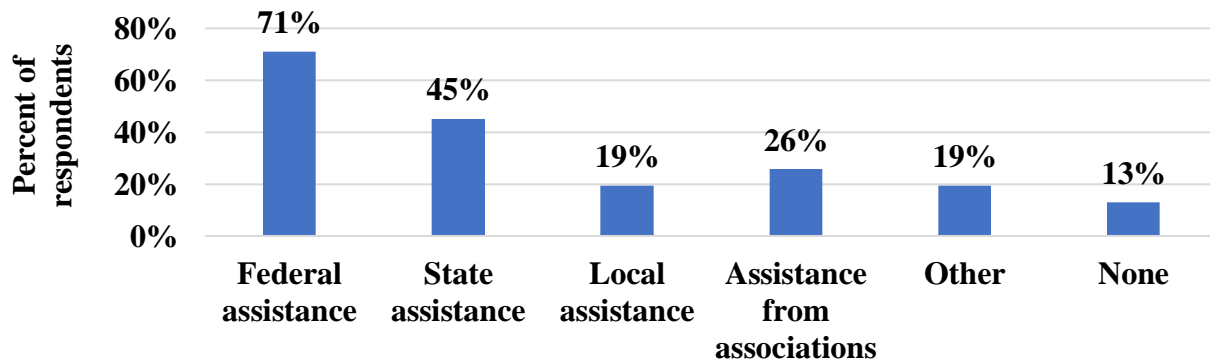
- No response : 10%
- Less than 1 month : 29%
- 1 – 3 months : 39%
- 4 – 6 months : 19%
- 7 – 10 months : 0%
- More than 10 months : 3%
- Don't know : 0%



Q16. Are there specific steps or types of assistance that would increase the likelihood for your farm or business to survive? Please select all that apply.

(n = 31)

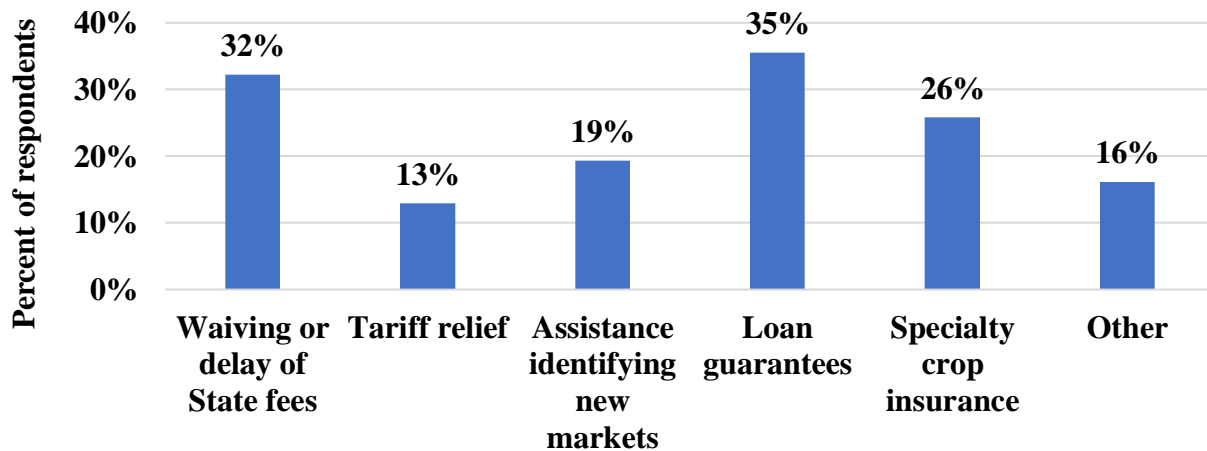
- Federal assistance : 71%
- State assistance : 45%
- Local assistance : 19%
- Assistance from associations : 26%
- Other : 19%
- None : 13%



Q17. Would assistance with any of the following be helpful to your farm or business right now? Please select all that apply.

(n = 31)

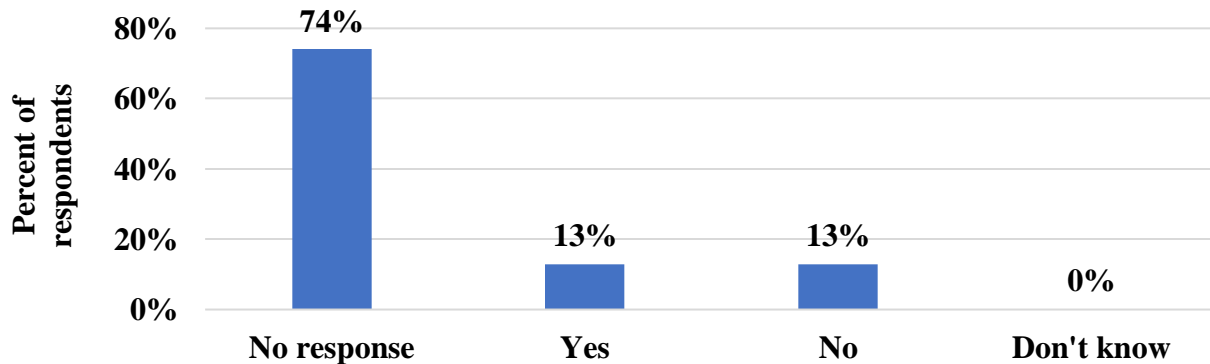
- Waiving or delay of State fees : 32%
- Tariff relief : 13%
- Assistance identifying new markets : 19%
- Loan guarantees : 35%
- Specialty Crop Insurance : 26%
- Other : 16%



Q18. Are there any existing programs that your aquaculture, aquaponics, or allied business does not currently qualify for, that would increase the likelihood of survival of your farm or business?

(n = 31)

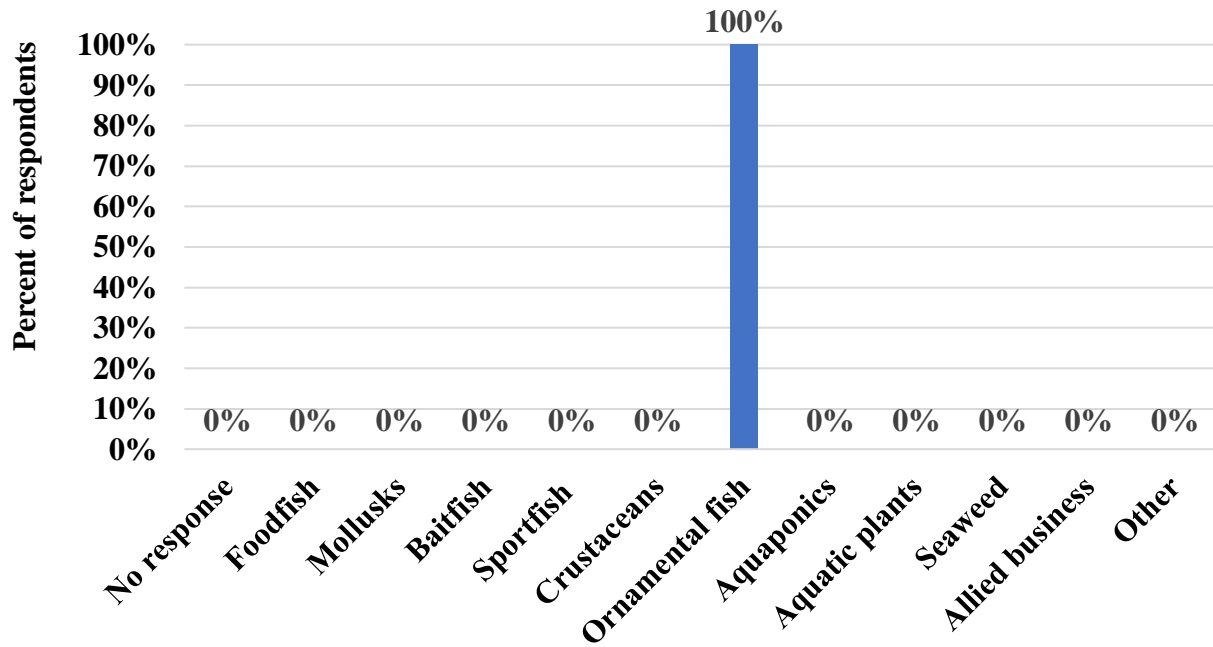
- No response : 74%
- Yes : 13%
- No : 13%
- Don't know : 0%



Q19. What is the primary product that your farm or business produces?

(n = 32)

• No response	:	0%
• Foodfish	:	0%
• Mollusks (oysters, clams, mussels, etc.)	:	0%
• Baitfish	:	0%
• Sportfish / recreational fish, including trout	:	0%
• Crustaceans (crawfish, soft crab, shrimp, etc.)	:	0%
• Ornamental fish (aquarium or water garden)	:	100%
• Aquaponics	:	0%
• Aquatic plants	:	0%
• Seaweed	:	0%
• Allied business (equipment, chemicals, etc.)	:	0%
• Other	:	0%



Q19.1. Please indicate which is the major species of foodfish raised by your farm or business:

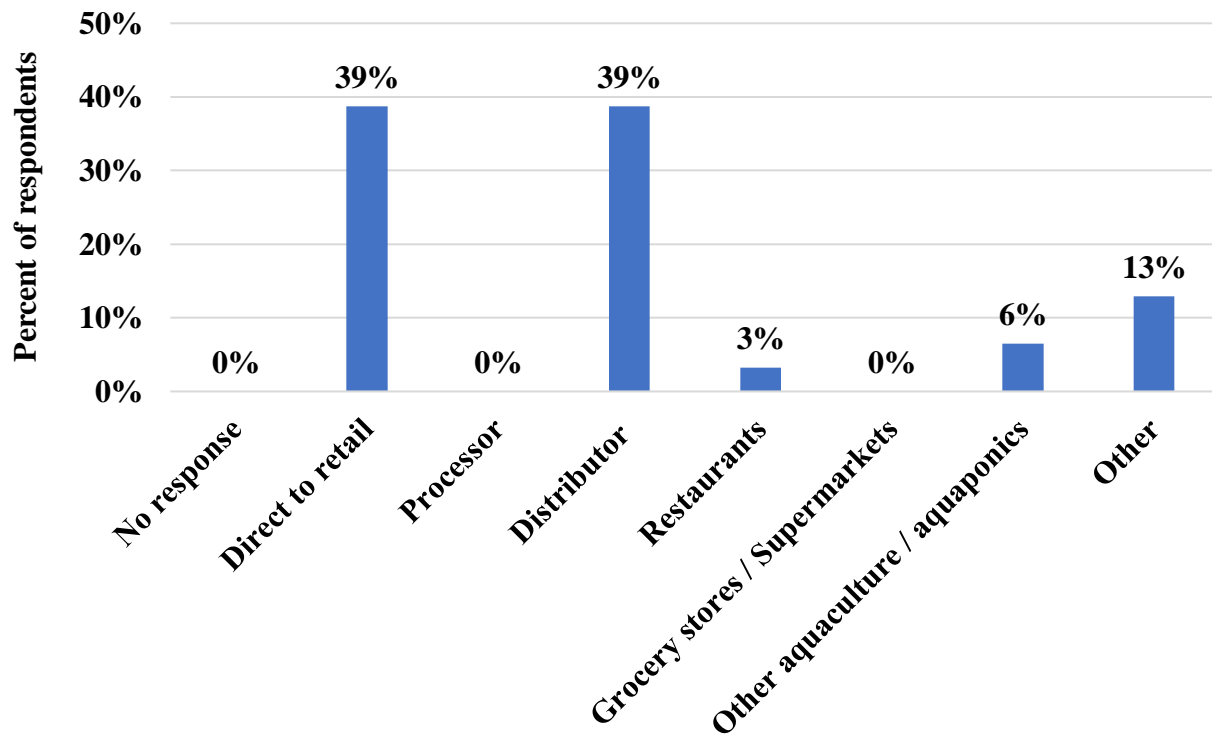
(n = 0)

- No response : NA
- Catfish : NA
- Sportfish : NA
- Ornamental fish : NA
- Salmon : NA
- Tilapia : NA
- Hybrid Striped Bass : NA
- Other : NA

Q20. How does your farm or business primarily market or sell aquaculture / aquaponics products?

(n = 31)

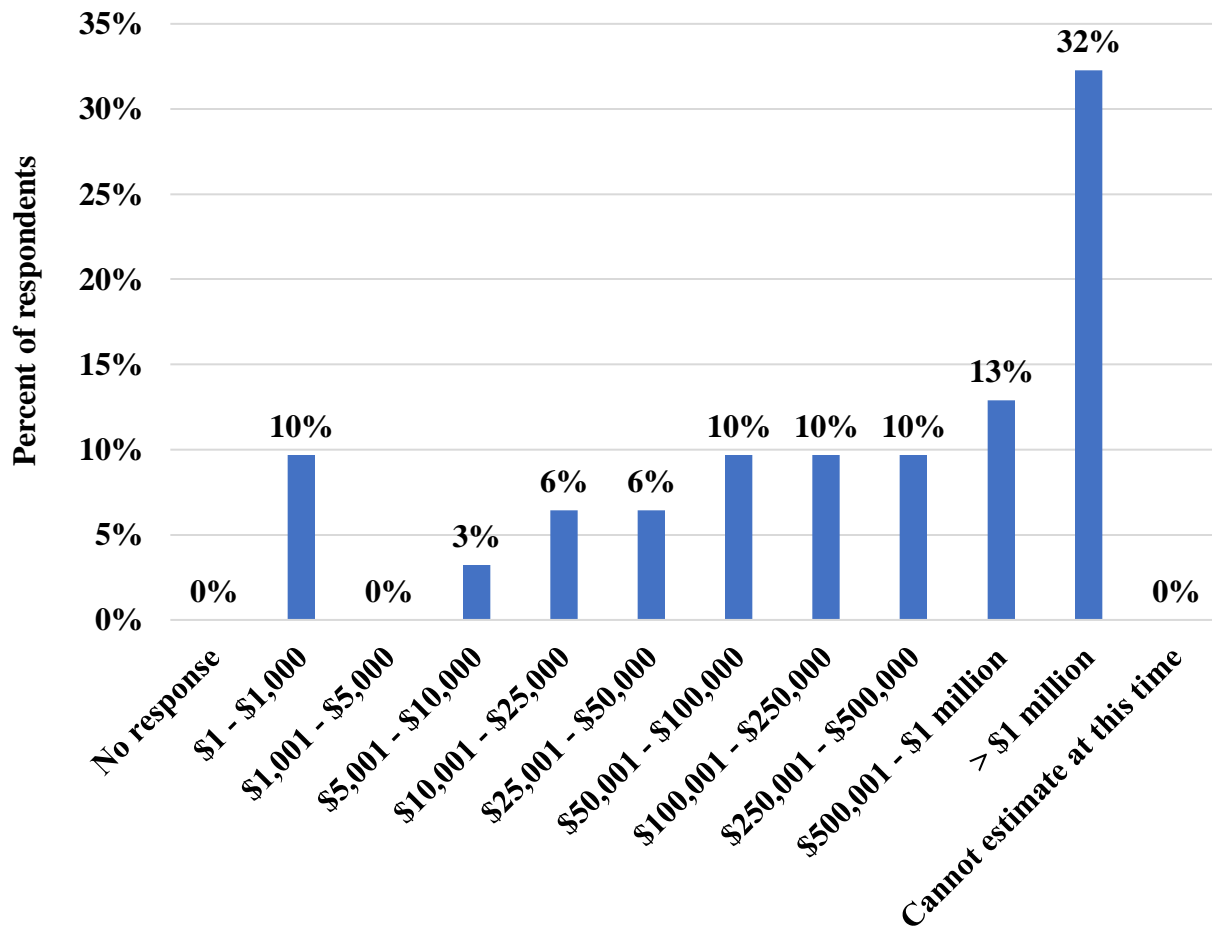
- No response : 0%
- Direct to retail (direct to consumers) : 39%
- Processor : 0%
- Distributor : 39%
- Restaurants : 3%
- Grocery Stores / Supermarkets : 0%
- Other aquaculture/aquaponics farms or businesses : 6%
- Other : 13%



Q21. Please indicate the scale of your farm or business by annual sales volume before the effects of coronavirus disease (COVID-19):

(n = 31)

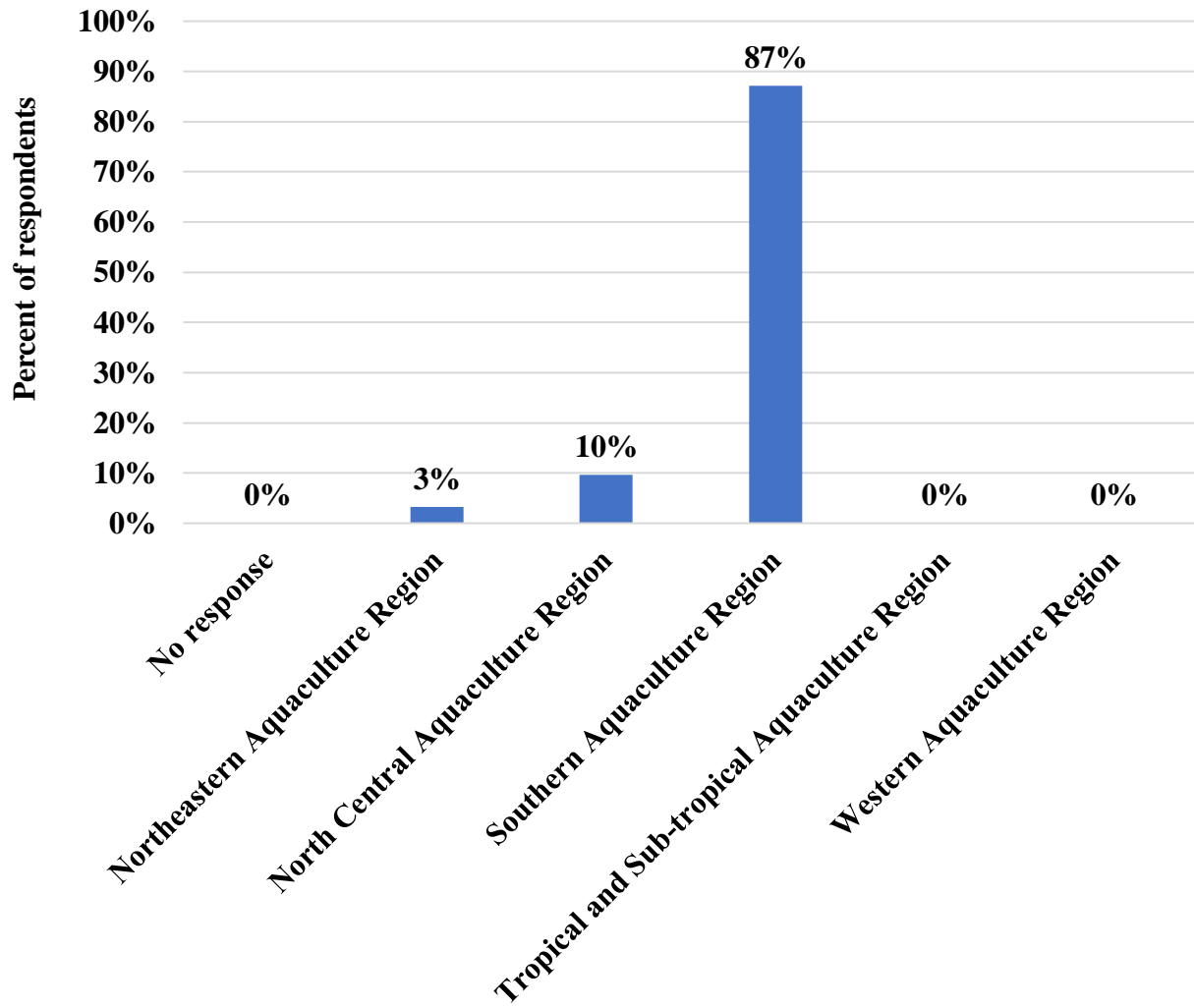
- No response : 0%
- \$1 - \$1,000 : 10%
- \$1,001 - \$5,000 : 0%
- \$5,001 - \$10,000 : 3%
- \$10,001 - \$25,000 : 6%
- \$25,001 - \$50,000 : 6%
- \$50,001 - \$100,000 : 10%
- \$100,001 - \$250,000 : 10%
- \$250,001 - \$500,000 : 10%
- \$500,001 - \$ 1million : 13%
- Greater than \$1 million : 32%
- Cannot estimate at this time : 0%



Q22. In which USDA defined Aquaculture Region is your farm or business located?

(n = 31)

- No response : 0%
- Northeastern Aquaculture Region : 3%
- North Central Aquaculture Region : 10%
- Southern Aquaculture Region : 87%
- Tropical and Sub-Tropical Aquaculture Region : 0%
- Western Aquaculture Region : 0%



References

USDA (United States Department of Agriculture). 2019. 2018 Census of Aquaculture. National Agricultural Statistics Service, USDA, Washington, District of Columbia, USA.

Accessed April 2020 at:

https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Census_of_Aquaculture/index.php.

Acknowledgements

Thank you to all respondents who participated in this study. Also, thank you to all of the national, regional, and state associations, agencies, Extension, and all others who helped us disseminate the survey. There are simply too many names to list, thanks to all of you.