

Impacts of COVID-19 on U.S. sport fish farms: Quarter 2 Results

April 10, 2020 to June 29, 2020 survey

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Introduction

In response to the coronavirus (COVID-19) disease pandemic, a collaborative initiative was launched by The Ohio State University, Virginia Tech, and Engle-Stone Aquatic\$, LLC to assess the impacts of the pandemic on U.S. aquaculture, aquaponics, and allied industry. Results from the first quarter survey (AAEC-218NP) demonstrated that the U.S. aquaculture industry has been impacted by the coronavirus (COVID-19) disease pandemic; with 90% of respondents reporting that their farm or business had been affected by the pandemic in some way. The Q1 impacts reported by respondents can be broadly summarized as the disruption of traditional marketing channels, challenges with labor, and challenges with production. Over the course of the first quarter of 2020, the U.S. government developed and implemented several emergency relief measures, in an effort to assist small businesses and individuals. The Q2 survey asked specifically about these relief and assistance programs, as well as questions on adaptations and changes being implemented by farms and businesses in response to the ongoing challenges. This fact sheet summarizes the Q2 results of this study, covering the period from April 10th to June 29th, 2020

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 **sportfish farm** respondents.

Results

Characterization of Respondents

Quarter 2 survey results showed that there were **11 sportfish farm participants**. Fifty percent of sportfish respondents (n = 6) sold their fish directly to customers, 33% sold to other, un-categorized channels, and 17% to distributors (Table 1). No respondents sold to other aquaculture farms, restaurants, processors or grocery stores/supermarkets.

Table 1. Primary marketing channel for sportfish respondents.

Category	Percentage
Direct to customers	50%
Other	33%
Other aquaculture farms	0%
Restaurants	0%
Distributors	17%
Processor	0%
Grocery stores/supermarkets	0%

One hundred percent of the respondents raised sportfish. Of these, a majority of sportfish respondents 73% raised trout for sportfish, 8% warmwater species for sportfish, and 9% raised other species for sale as sportfish.

Scale of farms/businesses

Sportfish farms varied in terms of their production scale. Respondents to the survey included those with scales of production from sales of \$1,001 to \$5,000 a year up to those with annual sales greater than \$1 million (Table 2). The greatest percentage (45%) of respondents had sales greater than \$1 million, followed by \$100,001 to \$250,000 (18%); \$250,001 to \$500,000; \$50,001 to \$100,000; \$5,001 to \$10,000, and \$1,001-\$5,000 each representing 9% of the respondents. No respondents had sales from \$1 to \$1,000; \$10,001 to \$25,000; \$25,001 to \$50,000, or from \$500,000 to \$1 million.

Table 2. Scale of sportfish respondent farms/business.

Category	Percentage
> \$1 million	45%
\$500,001 - \$1 million	0%
\$250,001 - \$500,000	9%
\$100,001 - \$250,000	18%
No response	0%
\$50,001 - \$100,000	9%
\$25,001 - \$50,000	0%
\$10,001 - \$25,000	0%
\$5,001 - \$10,000	9%
\$1,001 - \$5,000	9%
\$1 - \$1,000	0%

Aquaculture Regions

The greatest percentage of sportfish farm respondents (33%) were located in the Northeastern Aquaculture Region, followed by the North Central Aquaculture Region (33%), and the Western Aquaculture Region (17%) (Table 3). There were no sportfish respondents from the Southern or Tropical and Sub-tropical Aquaculture Regions. There were 6 respondents to this question.

Table 3. Participation by aquaculture region. (n = 6)

Region	Percentage of survey respondents
Southern	0%

Northeastern	33%
Western	17%
North Central	50%
Tropical and Sub-tropical	0%

Key Findings

Eighty-three percent of sportfish respondents (n = 6) reported that their farm or business had been impacted by the COVID-19 pandemic. Seventeen percent of respondents indicated that their farm had not been affected by COVID-19 in the period of time between April 10th, 2020 and June 29th, 2020. Five sportfish farms or businesses responded to the question that asked whether their farm or business would survive the next 3 months without external intervention (such as government assistance). One hundred percent of the respondents answered, “yes.” When asked the same question, but for the next 6 months, 100% of the five respondents said that their farm or business would survive. Five respondents also responded to the question which asked if their farm or business would survive the next 12 months without external assistance. Eighty percent of respondents indicated that they would survive and 20% said that their farm or business would “maybe” survive.

83% of Q2 sportfish respondents indicated that their farm or business had been impacted by the coronavirus disease pandemic.

Lost Sales

Sixty-seven percent of sportfish farm respondents indicated that they had lost sales due to the COVID-19 outbreak. Only four sportfish farms or businesses responded when asked if their farm or business lost sales to international or export markets outside the U.S. All four respondents indicated they had not lost sales to international or export markets outside the U.S. In terms of the volume of sales that had been lost, one farm reported losses in the range of \$1,001 to \$5,000 (n = 4). Two respondents reported that

they had lost \$10,001 to \$25,000, and one respondent reported losses from \$25,001 to \$50,000. No respondents reported losses in any other sales category

Twenty percent of respondents (n = 5) indicated changes reported included delayed government contracts, while 40% of respondents (n = 5) reported experiencing delayed private contracts. Twenty percent experienced cancelled private contracts, 20% experienced re-instatement of private contracts, and 20% experienced new private contracts made in the period of time between April 10th, 2020 and June 29th, 2020 as a result of COVID-19.

Respondents were further asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. Thirty-three percent of sportfish respondents indicated that they expected to lose sales. Seventeen percent of sportfish respondents expected to experience production challenges, increased cost of production, labor challenges, and increased demand for products. In terms of the volume of sales expected to be lost, one respondent expected to lose from \$1,001 to \$5,000 and one respondent expected to lose \$5,001 to \$10,000 (n = 2).

One of the Q2 sportfish respondents indicated that they did not expect to experience changes in sales in Q3 of 2020 (n = 2).

67% of Q2 respondents reported that their farm or business had experienced lost sales due to the coronavirus disease pandemic.

A new question for the Q2 survey asked respondents about the availability of cash on hand to cover operating expenses. Twenty percent of respondents indicated that they had sufficient cash on hand to cover 1 to 3 months of operations (n = 5), while 40% of respondents indicated having enough cash on hand for 4 to 6 months of operations. Twenty percent of respondents reported having cash on hand

to cover 7 to 10 months. The remaining 20% of sportfish respondents had enough cash on hand to cover more than 10 months of operations. It is worth noting that the Q2 survey was open for a period of 3 weeks for data collection, meaning that respondents who completed the survey shortly after it was distributed may have already exhausted their cash on hand by the time this fact sheet was prepared.

Labor

Five sportfish farms or businesses responded to the question which asked if sportfish respondents had laid off employees as a result of the COVID-19 pandemic. Eighty percent indicated that they had no changes in employment between April 10th, 2020 and June 29th, 2020 as a result of COVID-19. The remaining 20% percent had “hired additional employees”. One sportfish respondent indicated they had hired 4 to 6 employees in the period of time between April 10th, 2020 and June 29th, 2020 in response to COVID-19 (n = 1).

Fifty percent of sportfish respondents (n = 6) had experienced some type of labor challenge. Twenty percent of sportfish respondents (n = 5) indicated that employees had missed work due to COVID-19, while 80% reported that employees had not missed work due to the coronavirus. The respondent who reported employees missing work, reported employees missing 11 to 14 days.

Challenges to the farm/business

Sportfish respondents (n = 6) reported a variety of different challenges to the business that included lost sales (67%), production challenges not related to labor (33%), increased costs (17%), labor challenges (50%), increased demand (50%), and other unspecified challenges (17%). One sportfish farm or business responded to the question that asked which challenges they expected to experience in terms of production challenges not related to labor, in the 3rd Quarter. Their response indicated they expected to experience challenges with production inputs and challenges with repair, construction, consultant, or engineering services.

Fifty percent of sportfish respondents (n = 2) expected to experience challenges with production inputs (feed, therapeutants, etc.), and challenges with

repair, construction, consultant, or engineering services in the coming months. One respondent indicated that they were unable to identify expected specific production challenges at this time.

Forty percent of respondents (n = 5) indicated that they could hold market-ready product for 1 to 3 months, with 20% reporting 4 to 6 months, and 20% more than 10 months. Holding market-ready product clearly increases biomasses of fish, reduces growth, increases costs, and increases risk of greater mortality to disease.

According to 2 sportfish respondents (n = 2), financial services challenges were not mentioned as an experienced challenge in the period of time between April 10th, 2020 and June 29th, 2020.

In terms of expectations for the coming months, 33% of sportfish respondents (n = 6) expected additional lost sales, 17% continued production challenges, 17% increased costs of production, 17% labor challenges, and 17% expected increased demand for products.

Marketing of products

Respondents were also asked about the effects of holding market ready product on price, quality, and quantities sold. There were only 5 sportfish farms or businesses that responded to this question. Sixty percent of respondents said “no”, holding product would not make it less marketable. The remaining 40% said they “don’t know” if holding market ready product as a result of COVID-19 would make it less marketable.

Of the 5 sportfish respondents, 40% said they could hold market ready product as a result of COVID-19 before it becomes an issue for new crops or planting for up to 1 to 3 months. Twenty percent reported being able to hold market ready product for 7 to 10 months, and 20% responded “more than 10 months”.

Data were also collected on the average price and approximate inventory of the primary market-sized product (n = 9) but varied by species raised.

Marketing channels

Respondents were also asked to indicate their primary marketing channels before the effects of the coronavirus (COVID-19) disease pandemic (Table

4). Fifty percent of Q2 sportfish respondents (n = 6) indicated that they previously primarily sold their products direct to consumers. This was followed by 33% that sold primarily to an unspecified “Other” category, and 17% that sold primarily to distributors.

Table 4. Primary marketing channel for respondents.

Category	Percentage
Distributor	17%
Processor	0%
Restaurants	0%
Direct to consumer	50%
No response	0%
Other	33%
Other aquaculture /aquaponics	0%
Grocery store / supermarket	0%

Respondents were also asked about adaptations or changes in their marketing channel in response to the pandemic, to which 100% of respondents said “no” they had not implemented or attempted to implement a new marketing channel (n = 6).

Relief and assistance programs

As an important new addition to the Q2 survey, respondents were asked about the various assistance and relief programs that had been announced during Q2 of 2020. Respondents were asked to identify to which programs they had applied, whether they had received the requested support, and whether that support had been helpful to their farm or business. Thirty-three percent of Q2 sportfish respondents (n = 6) had applied for the Paycheck Protection Program (PPP). This was followed by 17% of respondents who had applied for Small Business Administration loans (SBA) and Economic Injury Disaster Loans (EIDL). An additional 17% of Q2 sportfish respondents reported that their farm or business had not applied for any assistance programs during the second quarter.

As for having received the support that was requested, 2 sportfish respondents (n = 2) indicated that they had applied for and received Paycheck Protection Program loans (PPP) (Table 5). One sportfish respondent (n = 1) received an Economic Injury Disaster Loan (EIDL) that they applied for,

and one sportfish respondent (n = 3) reported that their applications for financial assistance had been denied or declined. Three others indicated that they had applied for assistance but that it had not yet been received.

Of the 6 sportfish respondents, 67% indicated that no specific type assistance would increase the likelihood for their farm or business to survive. This was followed by 17% of sportfish respondents who also selected Federal assistance, State assistance, and assistance from associations as mechanisms that would increase their likelihood of survival.

Seventeen percent of Q2 sportfish respondents (n = 6) indicated that waiving or delaying State fees would be helpful to them right now, while 33% of sportfish respondents reported that other unspecified assistance would be helpful to their farm or business right now.

Table 5. Assistance received by Q2 respondents

Category	(N =)	Percentage
Private bank loans / line of credit	0	N/A
Small Business Administration loans (SBA)	1	0%
Paycheck Protection Program loans (PPP)	2	100%
Economic Injury Disaster Loans (EIDL)	1	100%
Unemployment benefits	0	N/A
Other <u>Federal</u> program	0	N/A
Other <u>State</u> program	0	N/A
Other <u>Local</u> program	0	N/A
Farm or business has applied but not yet received	3	0%
Farm or business applications have been denied / declined	3	33%

Discussion and Conclusion

Responses by sportfish farms to the Quarter 2 survey show that the U.S. sportfish farmers have been impacted by the COVID-19 pandemic. Sixty-seven percent of sportfish respondents experienced lost sales. Twenty percent of sportfish respondents reported loss of sales due to canceled contracts. While lost sales were the immediate impact, other

challenges were mentioned related to increasing production costs, production challenges, labor challenges, increased demand, and other unspecified challenges.

Effects on the sportfish industry may be felt more in the coming months, as 20% of sportfish respondents (n = 5) reported uncertainty of farm or business survival in the next 12 months.

It should be noted that the maximum number of sportfish respondents for the Q2 survey is 11. Given the survey results and response rate, it will be important to continue to monitor changes throughout the year. Key findings from sportfish farm and business respondents include:

- 83% had been impacted by COVID-19 during Q2
- 40% had had private contracts delayed
- 20% had government contracts delayed.
- 67% had experienced lost sales
- 2 farms or businesses applied for the Paycheck Protection Program, 1 for an Economic Injury Disaster Loan, 1 farm or business application was denied and 3 had applied but had not yet received funding.

References

- National Marine Fisheries Service. 2018. "Fisheries of the United States, 2017". U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2017 Available at: <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-report>. (last accessed, April 12th, 2020)
- United States Department of Agriculture. 2019. 2018 Census of Aquaculture. National Agricultural Statistics Service, USDA,

Washington, District of Columbia, USA.

Accessed April 2020 at:

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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/aaec-218/AAEC-218.pdf

Additional Resources

van Senten, J., C.R. Engle, and M. Smith. 2020. Impacts of COVID-19 on U.S. aquaculture, aquaponics, and allied businesses. *Journal of the World Aquaculture Society* 51(3):571-573.

A summary of all Quarter 2 survey results may be found in the Appendix document to this fact sheet, titled: “Summary of COVID-19 impacts on U.S. aquaculture, aquaponics, and allied businesses: Quarter 2 Results”.

All study results and disaggregated reports are/will be published online and available at:

https://www.ares.vaes.vt.edu/ares/virginia-seafood/research/Impacts_of_COVID19.html

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Appendix

Summary of COVID-19 impacts on U.S. sportfish farms: Quarter 2 Results

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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 will be administered quarterly for the duration of 2020 in order to capture the evolving effects of the coronavirus disease pandemic (COVID-19) on the industry. The Quarter 2 survey closed on July 17th, 2020 at 11:59 pm.

Survey methods are detailed in the Virginia Cooperative Extension Fact Sheet VCE-AAEC-228, available at: https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html.

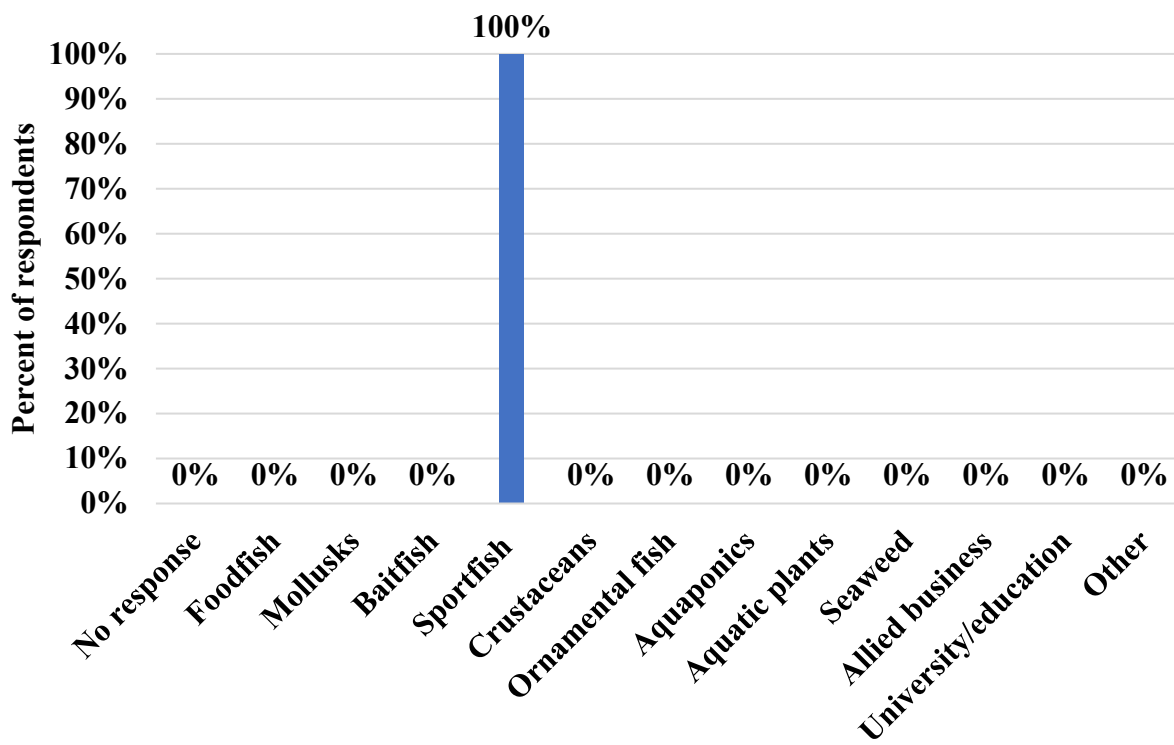
This report is a supplemental report to the **Sportfish (including trout) Report Summary, Quarter 1** that summarizes results of **sportfish farm** respondents.

Survey results for each question

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

Q1. What is the primary product that your farm or allied business produces? (n = 11)

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



Q1.1. Please indicate which is the major species of foodfish raised by your farm or business:

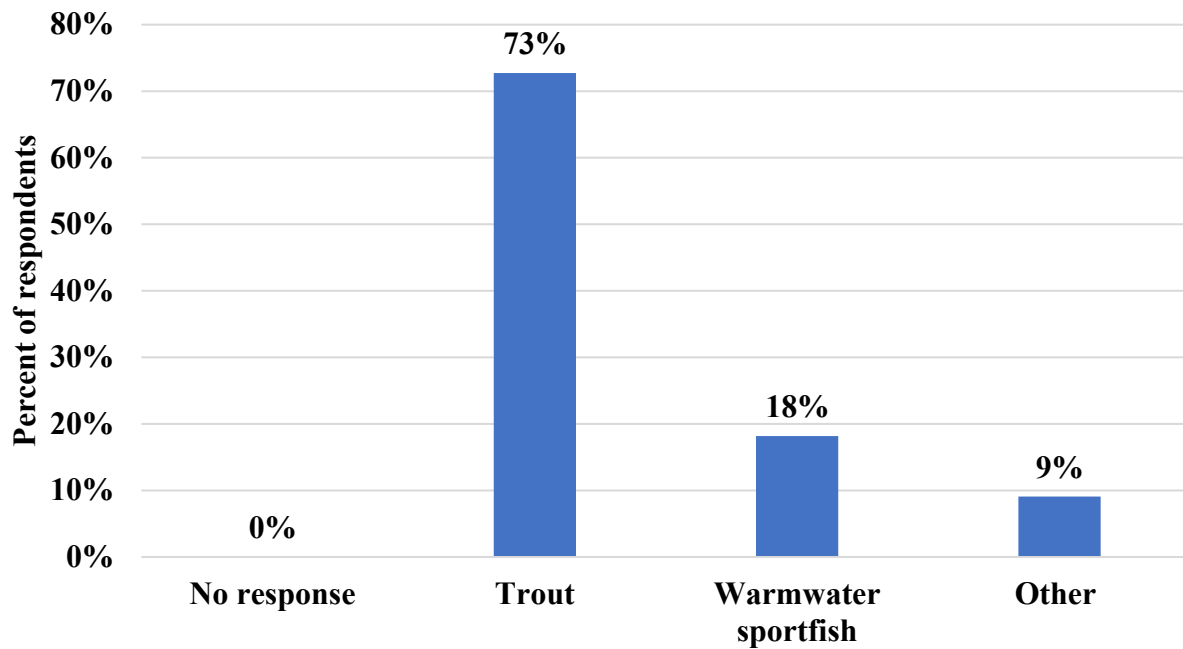
(n = 0)

- No response : NA
- Catfish : NA
- Trout : NA
- Salmon : NA
- Tilapia : NA
- Hybrid Striped Bass : NA
- Other : NA

Q1.2 Please indicate which is the major species of sportfish raised by your farm or business:

(n =11)

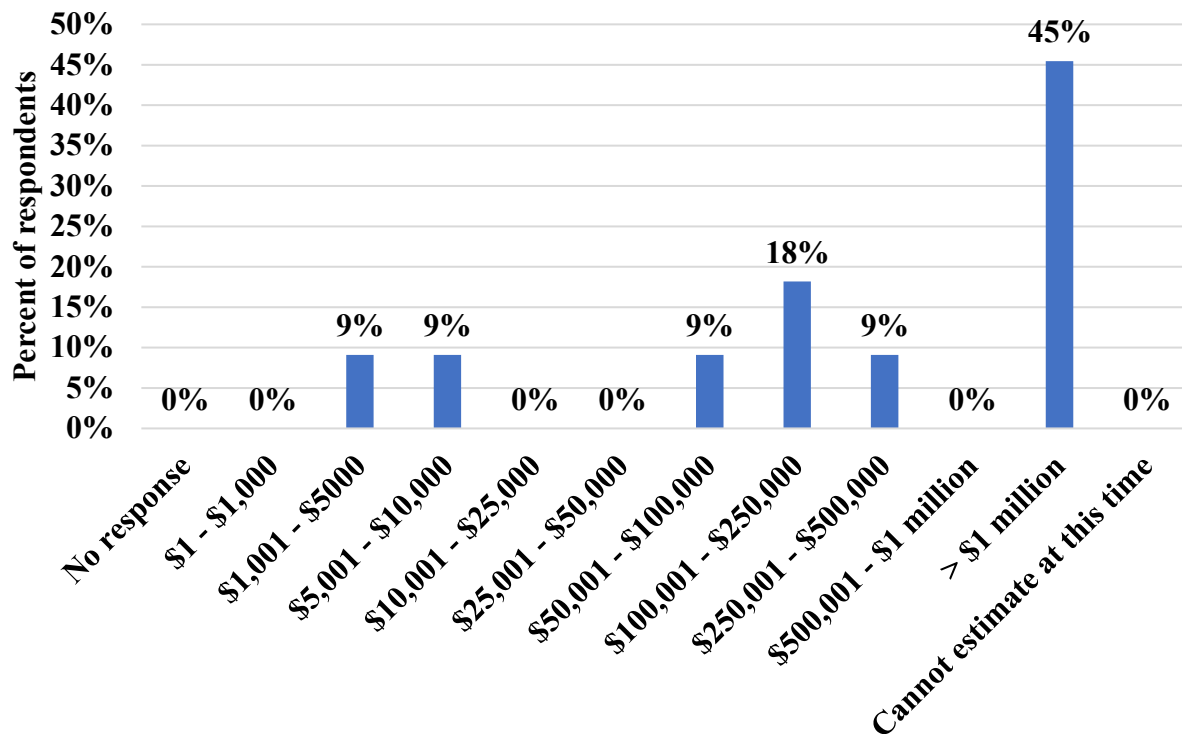
- No response : 0%
- Trout : 73%
- Warmwater sportfish : 18%
- Other : 9%



Q2. Please indicate the scale of your farm or business by annual sales volume before the effects of coronavirus disease (COVID-19):

(n = 11)

• No response	:	0%
• \$1 - \$1,000	:	0%
• \$1,001 - \$5,000	:	9%
• \$5,001 - \$10,000	:	9%
• \$10,001 - \$25,000	:	0%
• \$25,001 - \$50,000	:	0%
• \$50,001 - \$100,000	:	9%
• \$100,001 - \$250,000	:	18%
• \$250,001 - \$500,000	:	9%
• \$500,001 - \$ 1million	:	0%
• Greater than \$1 million	:	45%
• Cannot estimate at this time	:	0%



Q3. Please provide the average price and approximate inventory of the primary product (market-sized) on your farm or business for the following periods of time:

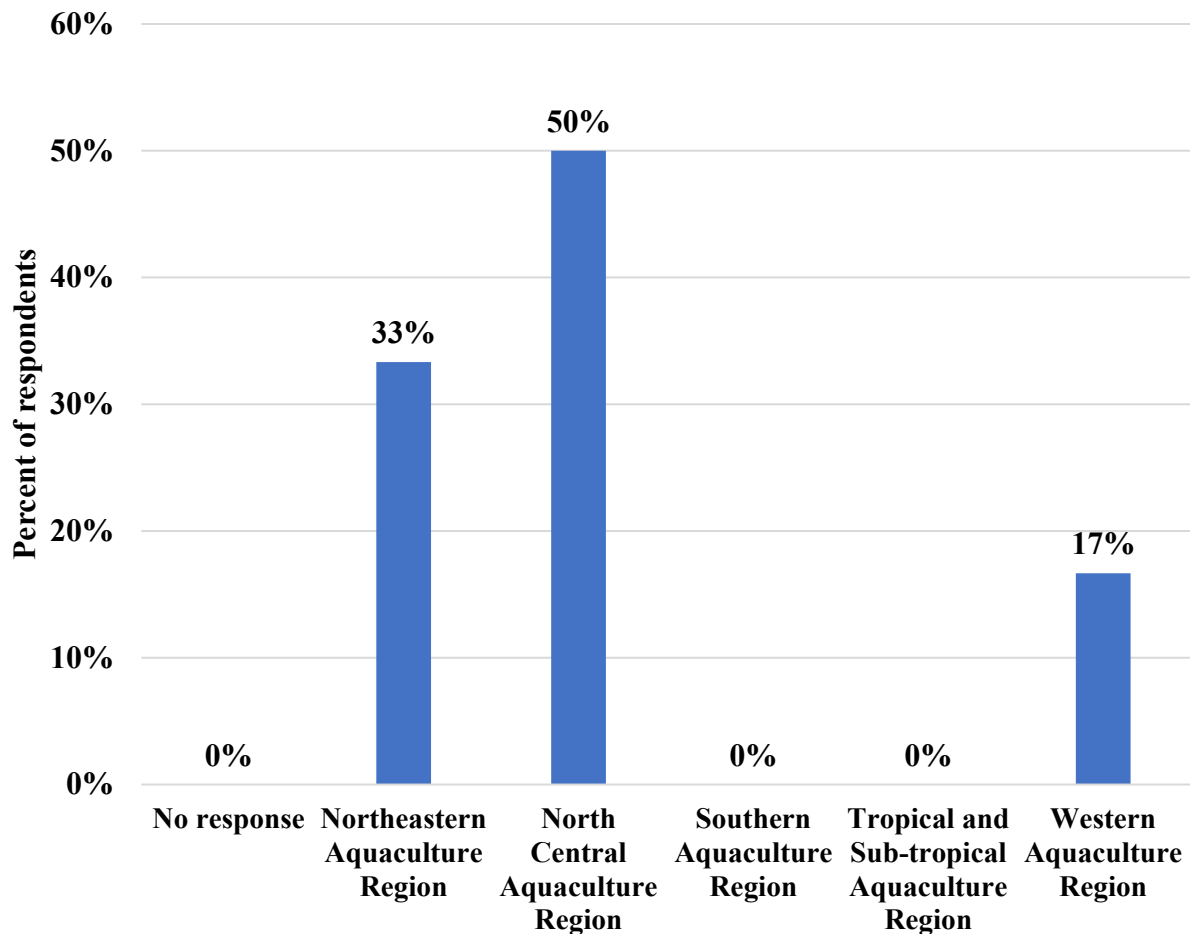
(n = 9)

* See Quarter 2 Sportfish Report for more information on the response to this question.

Q4. In which USDA defined Aquaculture Region is your farm or business located?

(n = 6)

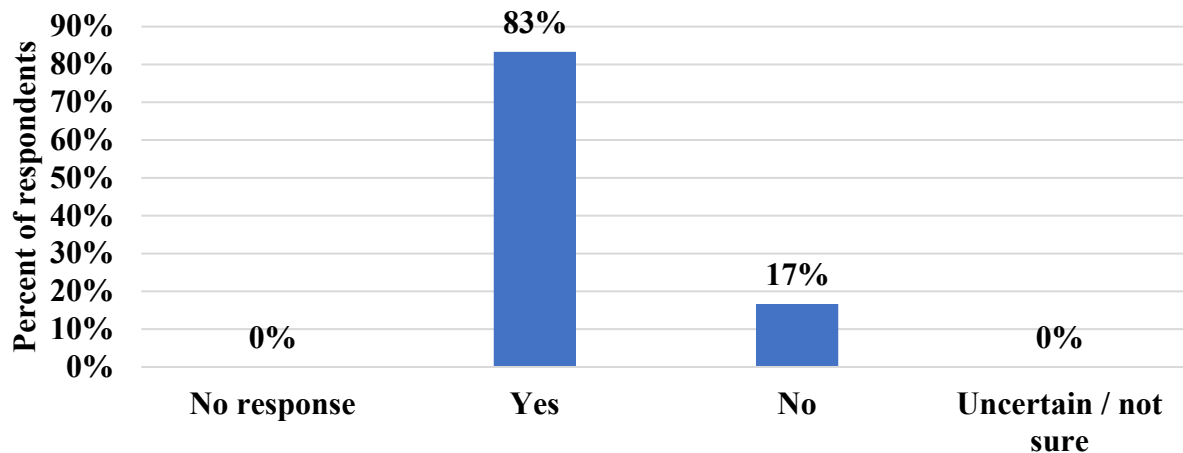
- | | | |
|--|---|-----|
| • No response | : | 0% |
| • Northeastern Aquaculture Region | : | 33% |
| • North Central Aquaculture Region | : | 50% |
| • Southern Aquaculture Region | : | 0% |
| • Tropical and Sub-Tropical Aquaculture Region | : | 0% |
| • Western Aquaculture Region | : | 17% |



Q5. Has your farm or allied business been impacted, either positively or negatively, by the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020?

(n = 6)

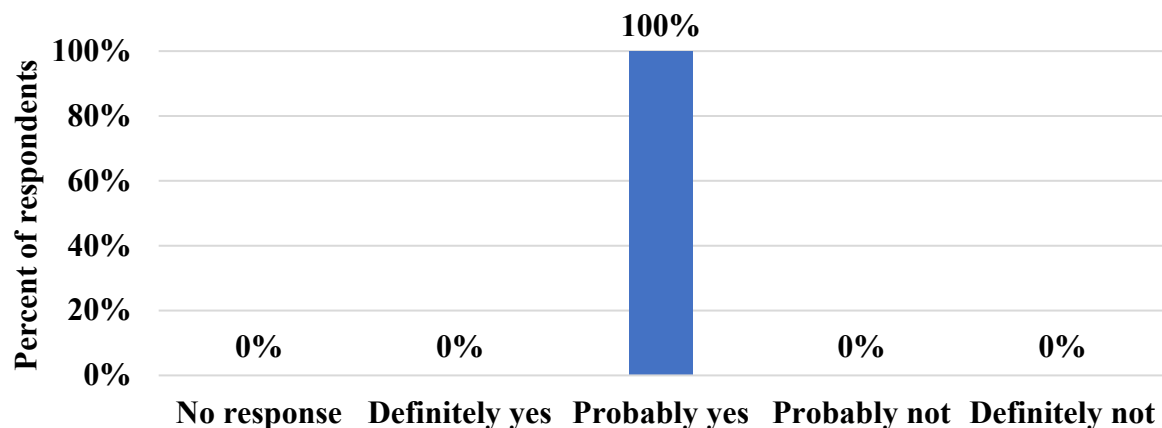
- No response : 0%
- Yes : 83%
- No : 17%
- Uncertain/not sure : 0%



Q5.1. Does your farm or allied business expect to be affected, either positively or negatively, by the coronavirus disease (COVID-19) in 2020?

(n = 1)

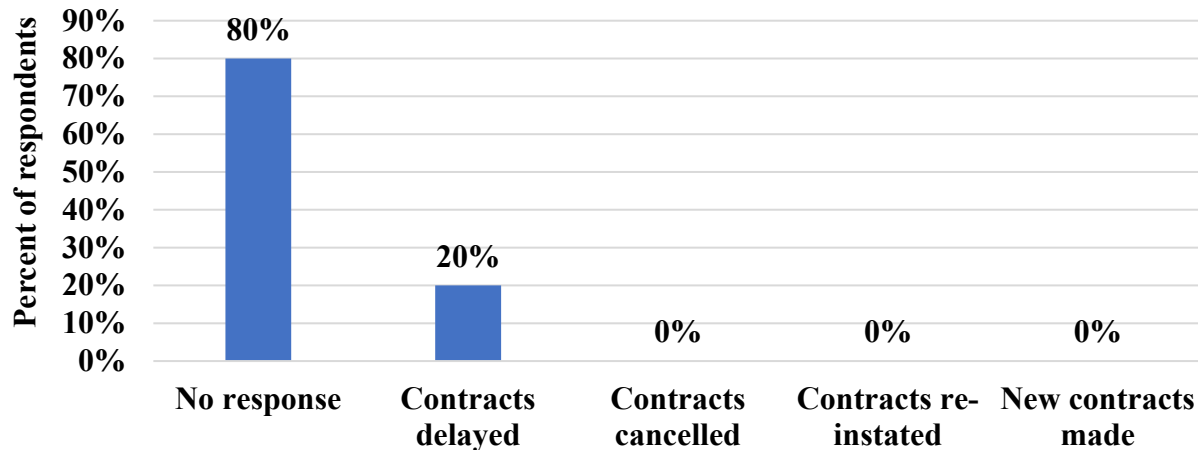
- No response : 0%
- Definitely yes : 0%
- Probably yes : 100%
- Probably not : 0%
- Definitely not : 0%



Q6. Have there been changes in government (state or federal) contracts in the period of time between April 10th 2020 and June 29th 2020 because of the coronavirus disease (COVID-19)?

(n = 5)

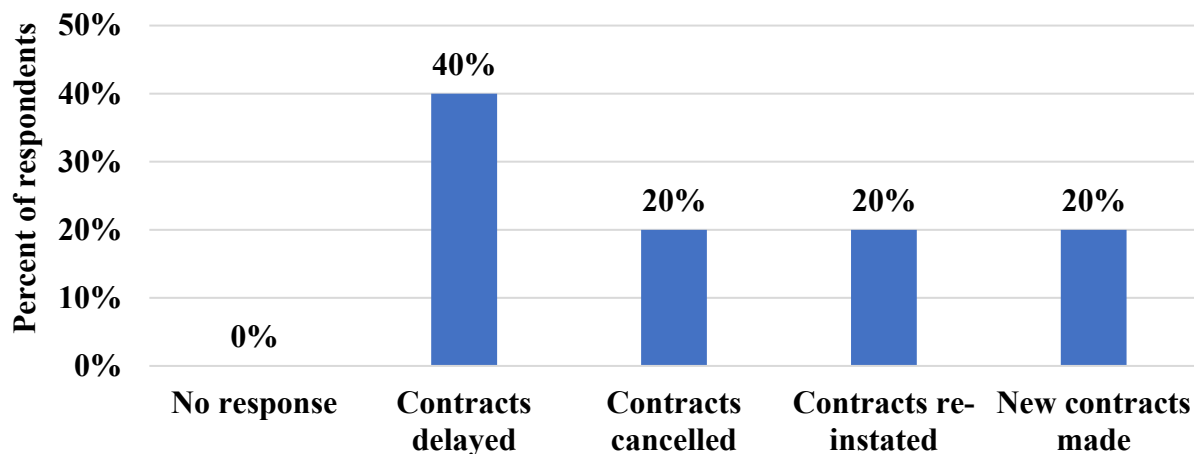
- No response : 80%
- Contracts delayed : 20%
- Contracts cancelled : 0%
- Contracts re-instated : 0%
- New contracts made : 0%



Q7. Have there been changes in private contracts in the period of time between April 10th 2020 and June 29th 2020 because of the coronavirus disease (COVID-19)?

(n = 5)

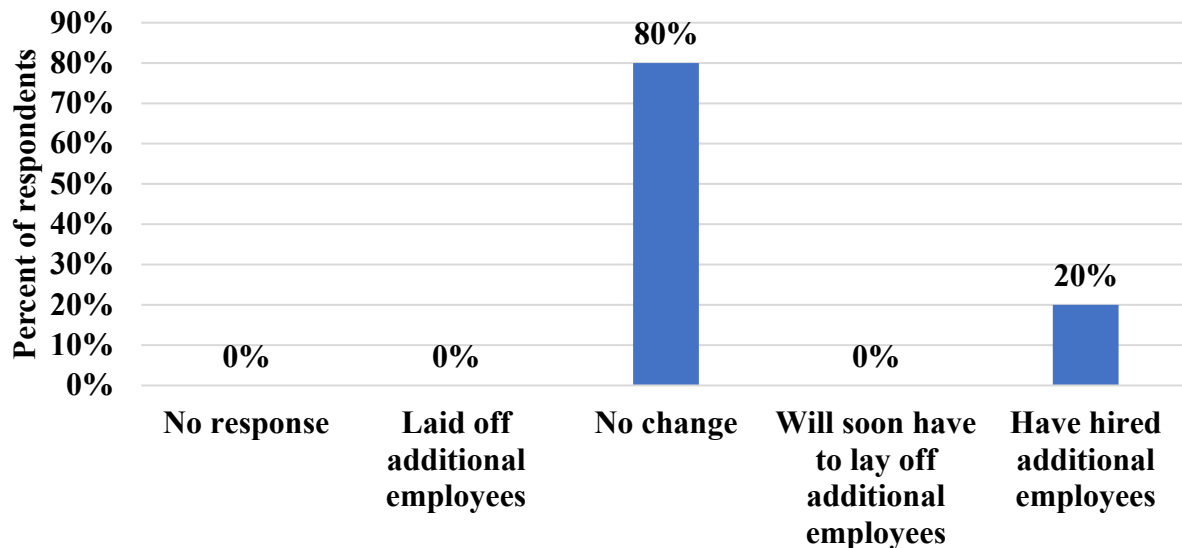
- No response : 0%
- Contracts delayed : 40%
- Contracts cancelled : 20%
- Contracts re-instated : 20%
- New contracts made : 20%



Q8. Please indicate what types of changes in employment have occurred in the period of time between April 10th 2020 and June 29th 2020 due to the coronavirus disease (COVID-19)?

(n =5)

- No response : 0%
- Laid off additional employees : 0%
- No change : 80%
- Will soon have to lay off additional employees : 0%
- Have hired additional employees : 20%



Q8.1. 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 =0)

- No response : N/A
- Yes : N/A
- No : N/A
- Don't know : N/A

Q8.2. How many employees has your farm or business had to lay off in the period of time between April 10th 2020 and June 29th 2020 in response to the coronavirus disease (COVID-19)?

(n = 0)

- No response : N/A
- 1 – 3 employees : N/A
- 4 – 6 employees : N/A
- 7 – 10 employees : N/A
- 11 – 15 employees : N/A
- 16 – 20 employees : N/A
- More than 20 employees : N/A

Q8.3. 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 = 0)

- No response : N/A
- Less than 1 week : N/A
- 1 – 3 weeks : N/A
- 4 – 6 weeks : N/A
- 7 – 10 weeks : N/A
- More than 10 weeks : N/A

Q8.4. How many employees do you estimate your farm or business will have to lay off in response to the coronavirus disease (COVID-19)?

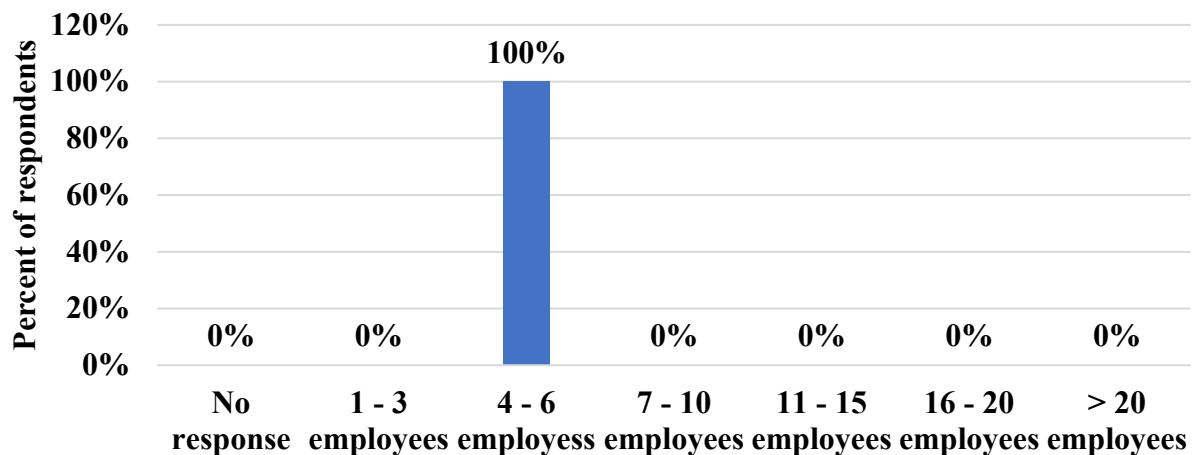
(n = 0)

- No response : N/A
- 1 – 3 employees : N/A
- 4 – 6 employees : N/A
- 7 – 10 employees : N/A
- 11 – 15 employees : N/A
- 16 – 20 employees : N/A
- More than 20 employees : N/A

Q8.5 How many additional employees has your farm or allied business hired in the period of time between April 10th 2020 and June 29th 2020 in response to the coronavirus disease (COVID-19)?

(n = 1)

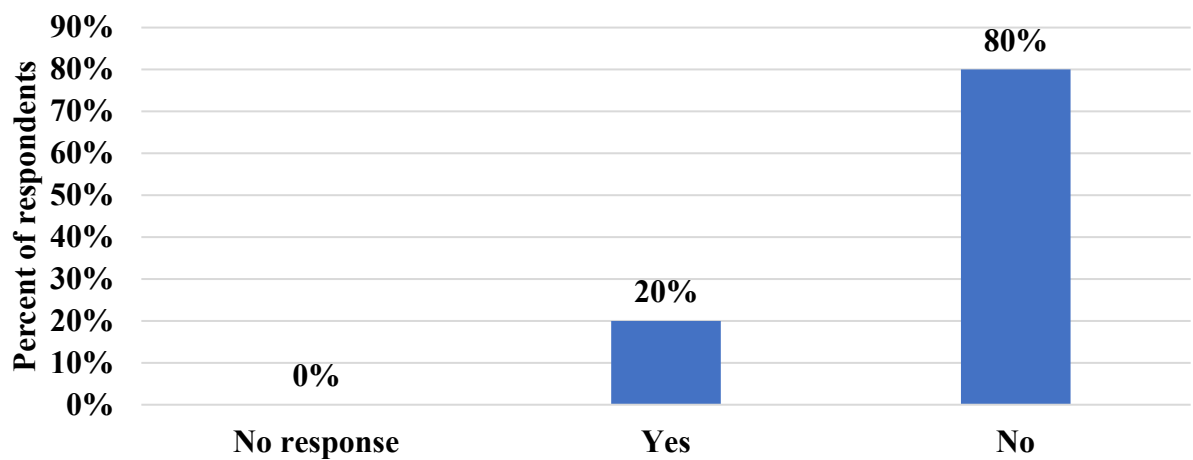
- No response : 0%
- 1 – 3 employees : 0%
- 4 – 6 employees : 100%
- 7 – 10 employees : 0%
- 11 – 15 employees : 0%
- 16 – 20 employees : 0%
- More than 20 employees : 0%



Q9. Has your farm or business had any employees miss work due to the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020?

(n = 5)

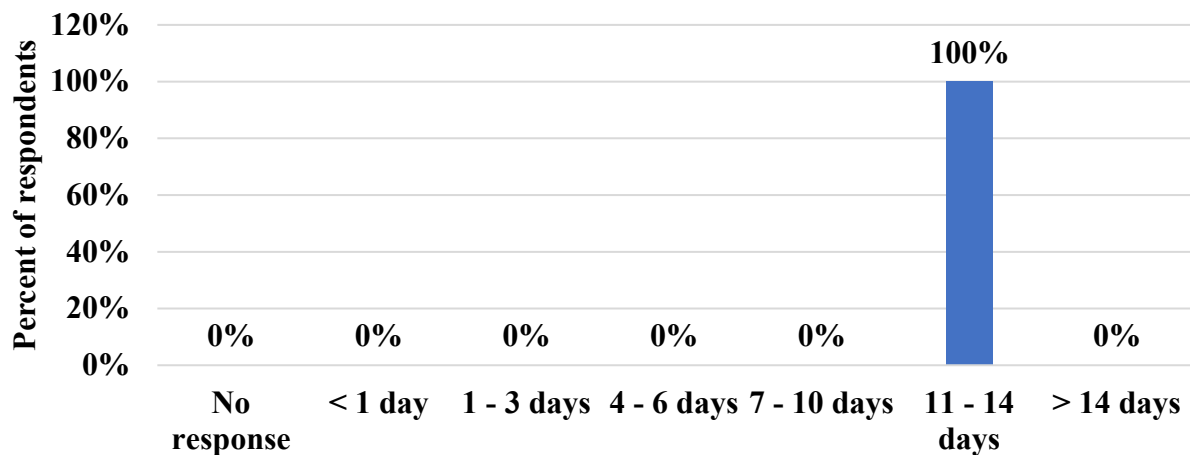
- No response : 0%
- Yes : 20%
- No : 80%



Q9.1. In total, approximately how many days have any employees in your farm or business missed work due to the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020?

(n = 1)

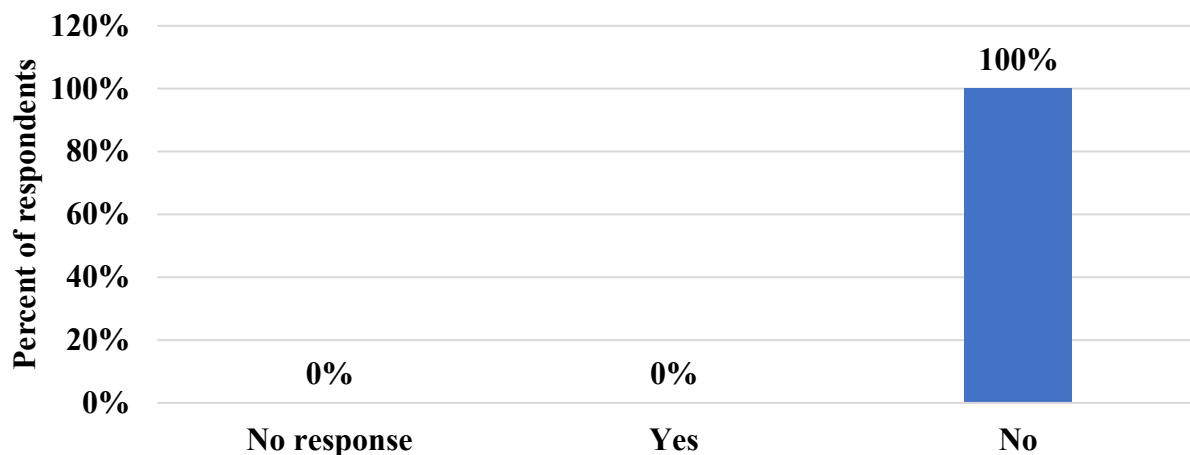
- No response : 0%
- Less than a day : 0%
- 1 -3 days : 0%
- 4 – 6 days : 0%
- 7 – 10 days : 0%
- 11 – 14 days : 100%
- More than 14 days : 0%



Q10. Does your farm or business make use of H2A or H2B workers?

(n = 5)

- No response : 0%
- Yes : 0%
- No : 100%



Q10.1. Has your farm or business been able to secure H2A and H2B workers during the coronavirus disease (COVID-19) pandemic in the period of time between April 10th 2020 and June 29th 2020?

(n = 0)

- No response : N/A
- Yes : N/A
- No : N/A
- Don't know yet : N/A
- Have not tried : N/A

Q10.2. Is your farm or business currently at risk of losing H2A or H2B workers due to the coronavirus disease (COVID-19) pandemic?

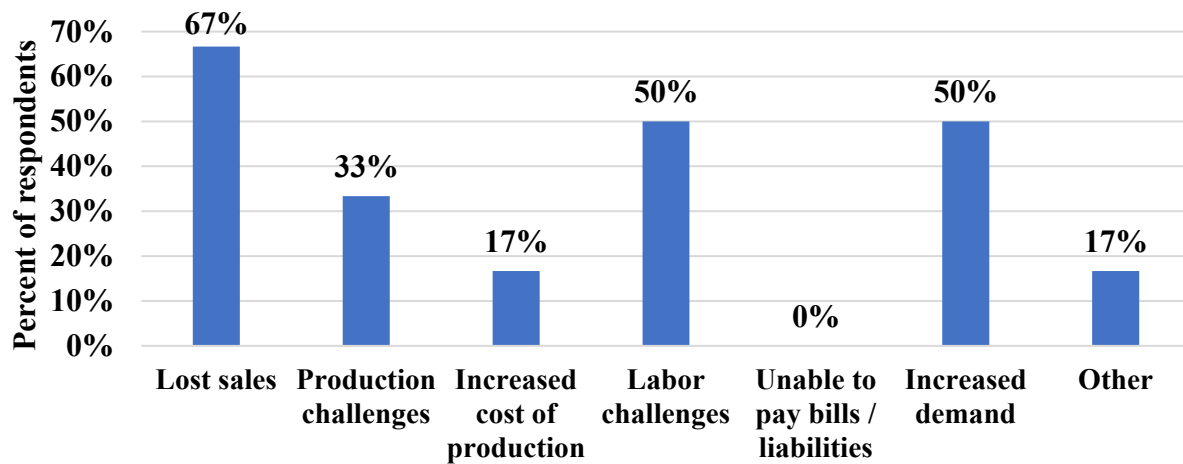
(n = 0)

- No response : N/A
- Yes : N/A
- No : N/A
- Don't know yet : N/A

Q11. Has your farm or business experienced any of the following as a result of the coronavirus disease (COVID-19) in in the period of time between April 10th 2020 and June 29th 2020? Please select all that apply.

(n = 6)

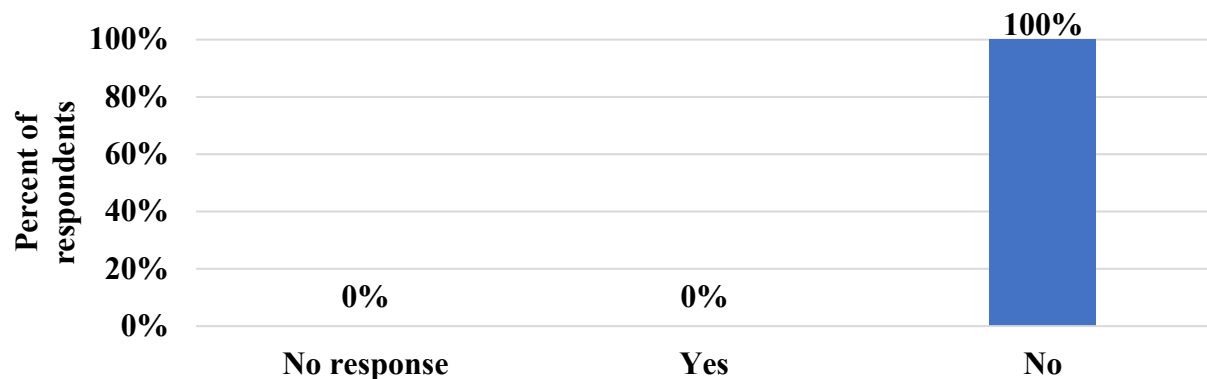
- Lost sales : 67%
- Production challenges (not related to labor) : 33%
- Increased cost of production : 17%
- Labor challenges : 50%
- Unable to pay bills or cover liabilities : 0%
- Increased demand for products : 50%
- Other : 17%



Q11.1. 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) in the period of time between April 10th 2020 and June 29th 2020?

(n = 4)

- No response : 0%
- Yes : 0%
- No : 100%

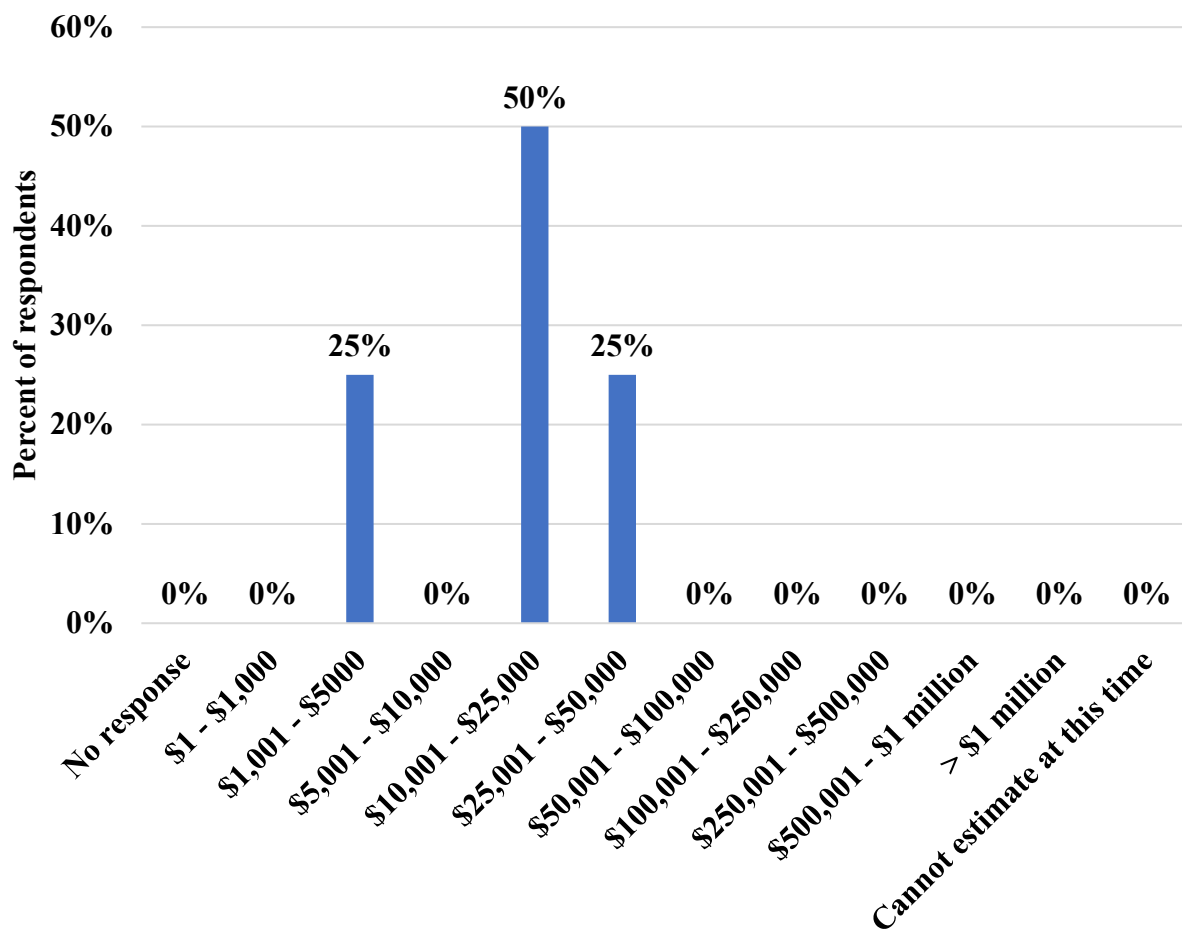


Q11.2. If your farm or business has experienced lost sales as a result of the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020?

Please estimate the value of lost sales:

(n = 4)

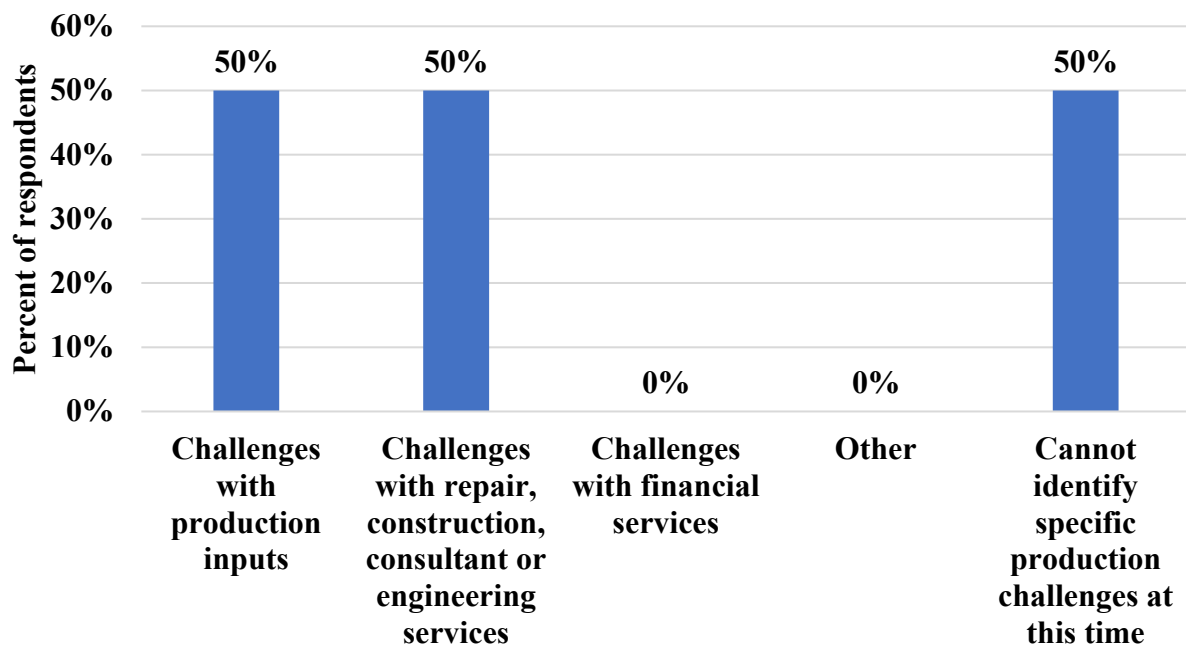
- No response : 0%
- \$1 - \$1,000 : 0%
- \$1,001 - \$5,000 : 25%
- \$5,001 - \$10,000 : 0%
- \$10,001 - \$25,000 : 50%
- \$25,001 - \$50,000 : 25%
- \$50,001 - \$100,000 : 0%
- \$100,001 - \$250,000 : 0%
- \$250,001 - \$500,000 : 0%
- \$500,001 - \$1 million : 0%
- Greater than \$1 million : 0%
- Cannot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



Q11.3. If your farm or business has experienced production challenges (not related to labor) as a result of the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020, can those challenges be specified? Please select all that apply.

(n = 2)

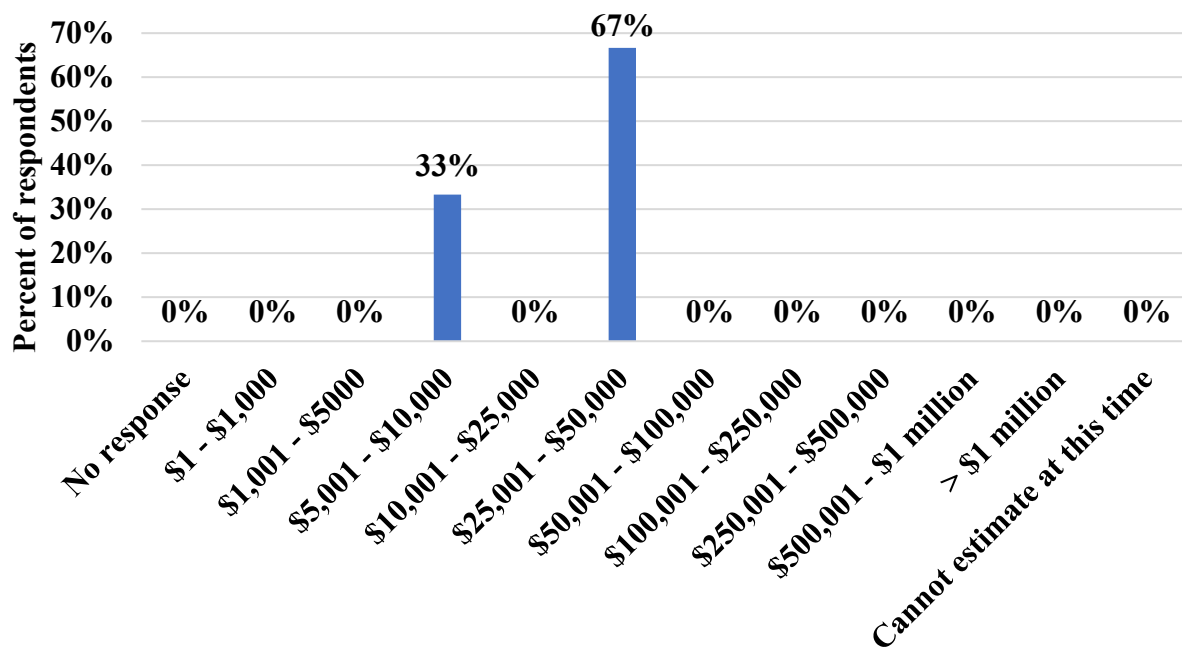
- Challenges with production inputs (feed, chemicals, therapeutants, etc.) : 50%
- Challenges with repair, construction, consultant or engineering services : 50%
- Challenges with financial services (operating loans, leases, etc.) : 0%
- Other : 0%
- Cannot identify specific production challenges at this time : 50%



Q11.6. If your farm or business has experienced increased demand for products as a result of the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020? Please estimate the value of those effects on sales:

(n = 3)

• No response	:	0%
• \$1 - \$1,000	:	0%
• \$1,001 - \$5,000	:	0%
• \$5,001 - \$10,000	:	33%
• \$10,001 - \$25,000	:	0%
• \$25,001 - \$50,000	:	67%
• \$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	:	0%



Q11.8. If your farm or allied business has experienced missed bill or loan payments as a result of the coronavirus disease (COVID-19) in the period of time between April 10th 2020 and June 29th 2020? Please estimate the value of those missed payments:

(n = 0)

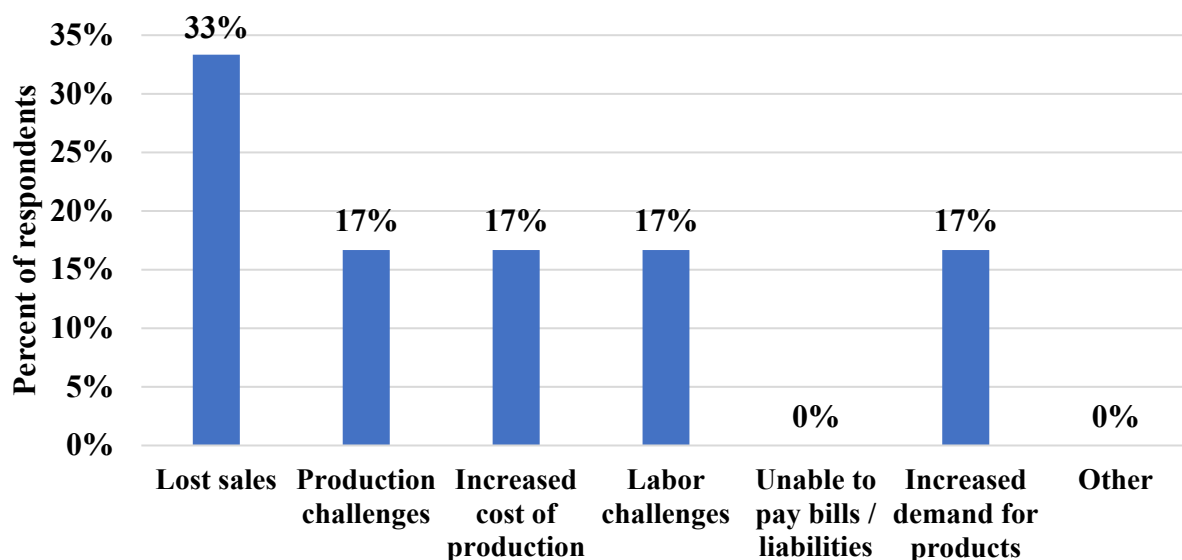
- No response : N/A
- \$1 - \$1,000 : N/A
- \$1,001 - \$5,000 : N/A
- \$5,001 - \$10,000 : N/A
- \$10,001 - \$25,000 : N/A
- \$25,001 - \$50,000 : N/A
- \$50,001 - \$100,000 : N/A
- \$100,001 - \$250,000 : N/A
- \$250,001 - \$500,000 : N/A
- \$500,001 - \$ 1million : N/A
- Greater than \$1 million :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

Q12. Does your farm or business expect to experience any of the following as a result of the coronavirus disease (COVID-19) in the 3rd Quarter of 2020 (July, August, September)?

Please select all that apply.

(n = 6)

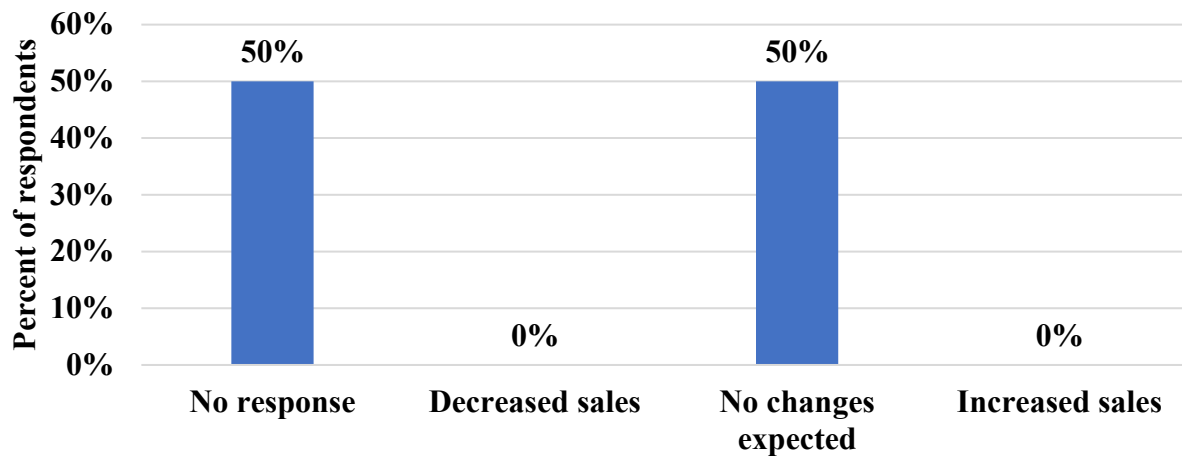
- Lost sales : 33%
- Production challenges (not related to labor) : 17%
- Increased cost of production : 17%
- Labor challenges : 17%
- Unable to pay bills or cover liabilities : 0%
- Increased demand for products : 17%
- Other : 0%



Q12.1. Does your farm or allied business expect to experience changes in sales to international or export markets (outside of the United States), as a result of the coronavirus disease (COVID-19), in the 3rd Quarter of 2020 (July, August, September)?

(n = 2)

- No response : 50%
- Decreased sales : 0%
- No changes expected : 50%
- Increased sales : 0%

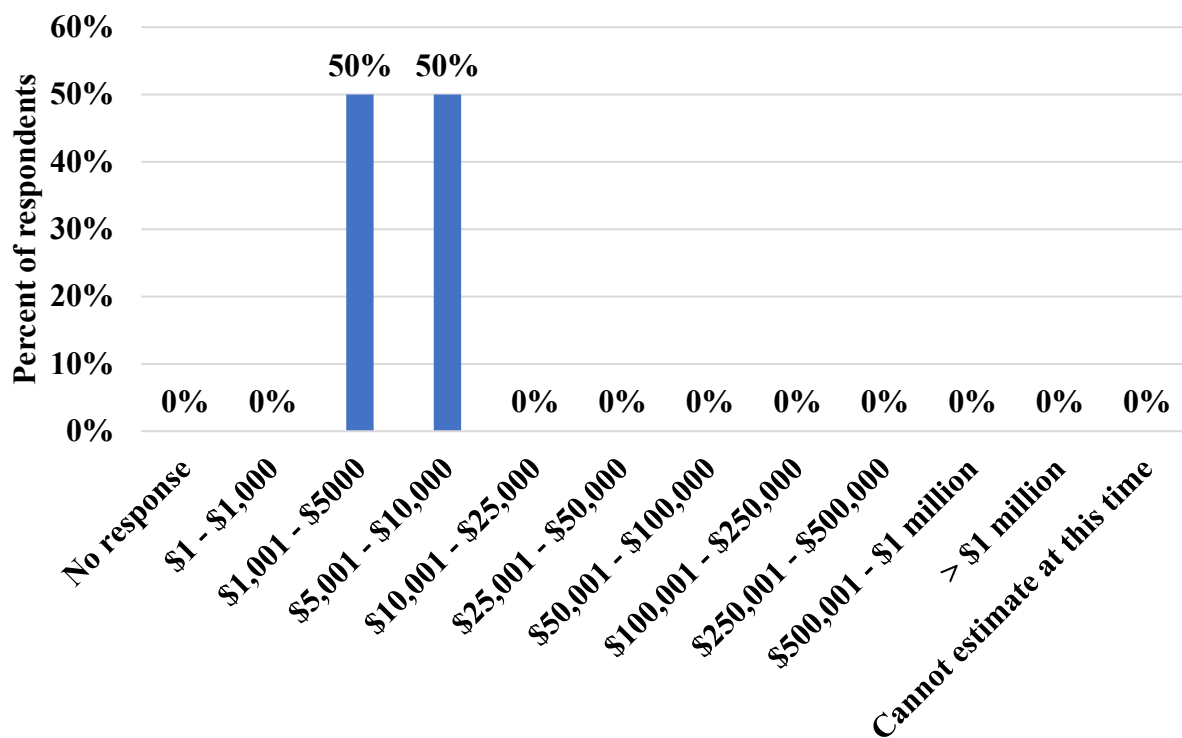


Q12.2. Does your farm or business expect to experience lost sales as a result of the coronavirus disease (COVID-19) in the 3rd Quarter of 2020 (July, August, September)?

Please estimate the value of lost sales:

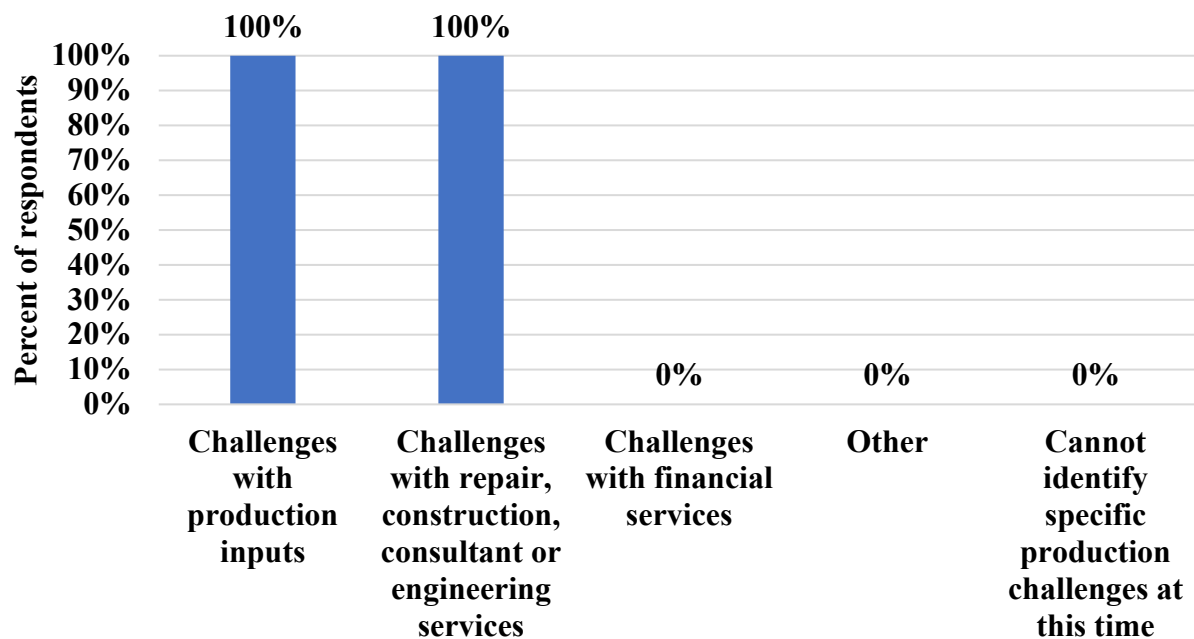
(n = 2)

- No response : 0%
- \$1 - \$1,000 : 0%
- \$1,001 - \$5,000 : 50%
- \$5,001 - \$10,000 : 50%
- \$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 : 0%



Q12.3. Does your farm or business expect to experience production challenges (not related to labor) as a result of the coronavirus disease (COVID-19) in the 3rd Quarter of 2020 (July, August, September), can those challenges be specified? Please select all that apply.
(n = 1)

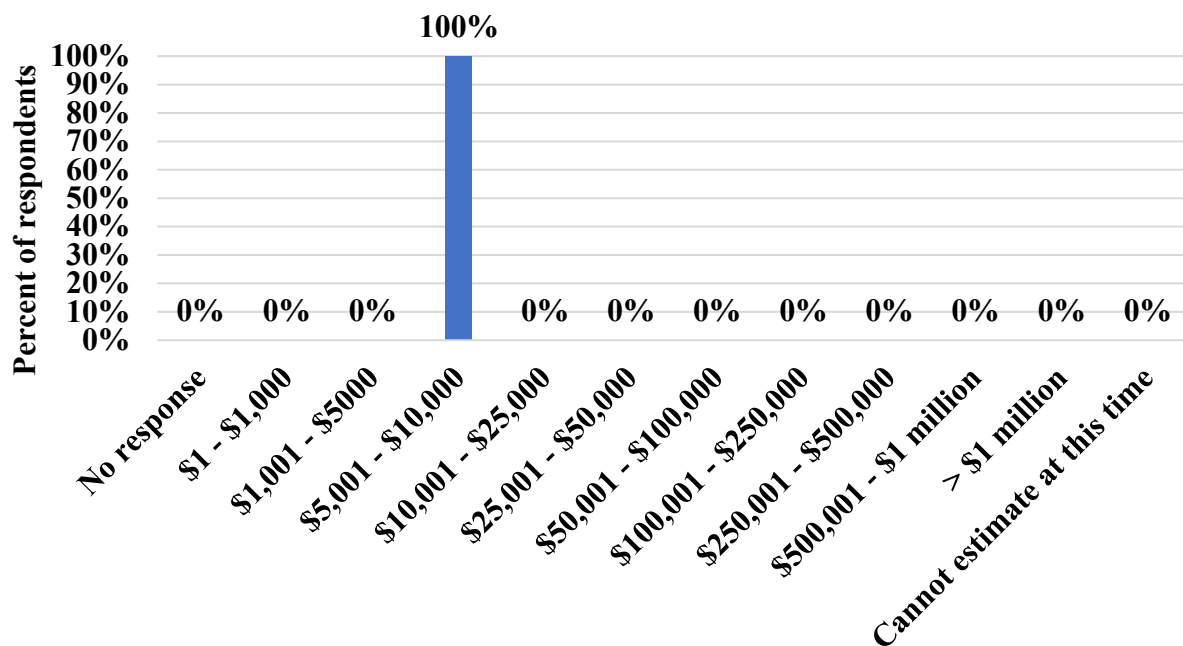
- Challenges with production inputs (feed, chemicals, therapeutants, etc.) : 100%
- Challenges with repair, construction, consultant or engineering services : 100%
- Challenges with financial services (operating loans, leases, etc.) : 0%
- Other : 0%
- Cannot identify specific production challenges at this time : 0%



Q12.6. Does your farm or business expect to experience increased demand for products as a result of the coronavirus disease (COVID-19) in the 3rd Quarter of 2020 (July, August, September)? Please estimate the value of those effects on sales:

(n = 1)

• No response	:	0%
• \$1 - \$1,000	:	0%
• \$1,001 - \$5,000	:	0%
• \$5,001 - \$10,000	:	100%
• \$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	:	0%



Q12.8. If your farm or allied business expects to miss bill or loan payments as a result of the coronavirus disease (COVID-19) in the 3rd Quarter of 2020 (July, August, September)? Please estimate the value of those missed payments:

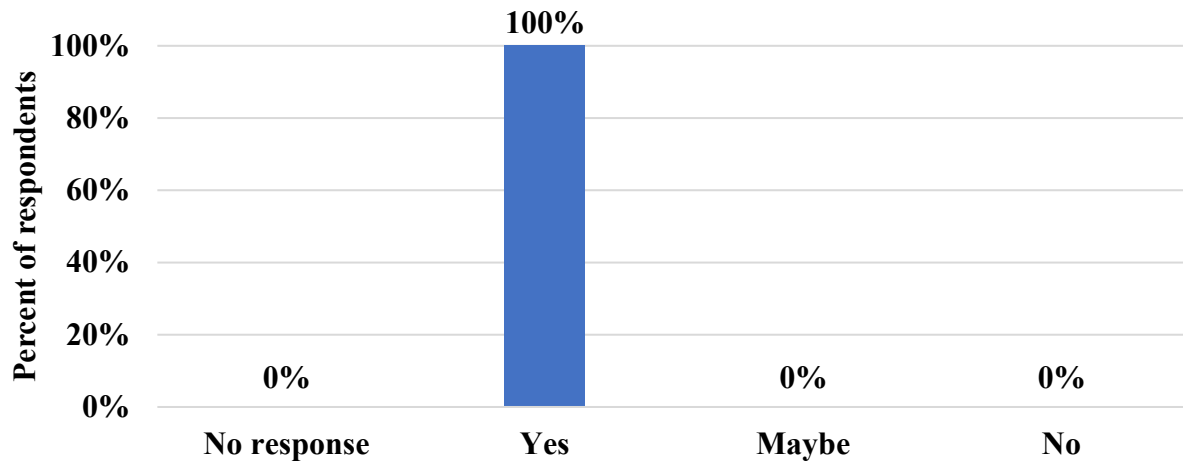
(n =0)

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

Q13. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 3 (three) months?

(n = 5)

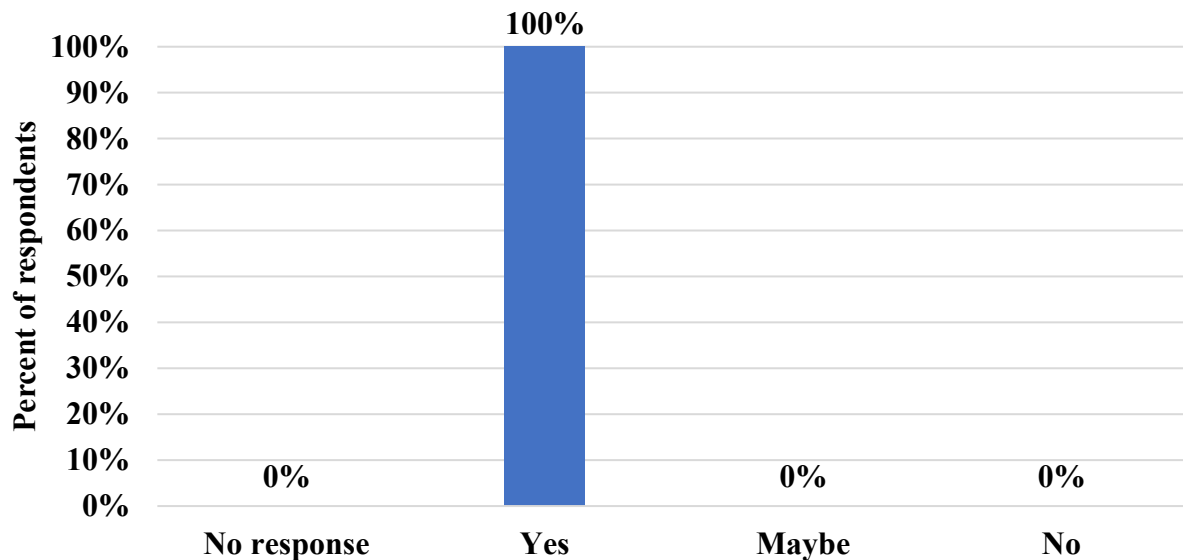
- No response : 0%
- Yes : 100%
- Maybe : 0%
- No : 0%



Q14. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 6 (six) months?

(n = 5)

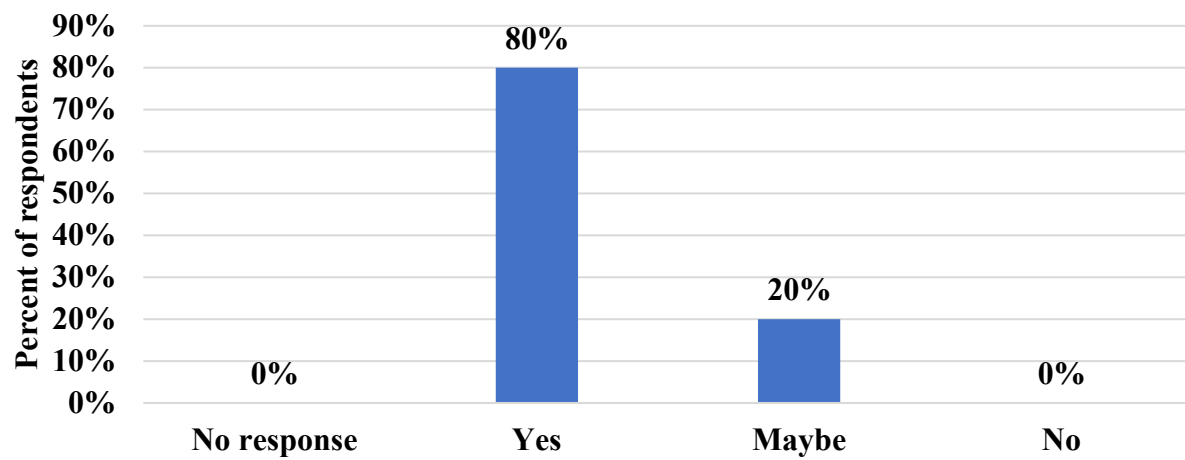
- No response : 0%
- Yes : 100%
- Maybe : 0%
- No : 0%



Q15. Without external intervention (for example, governmental assistance), will your farm or business survive in the next 12 (twelve) months?

(n = 5)

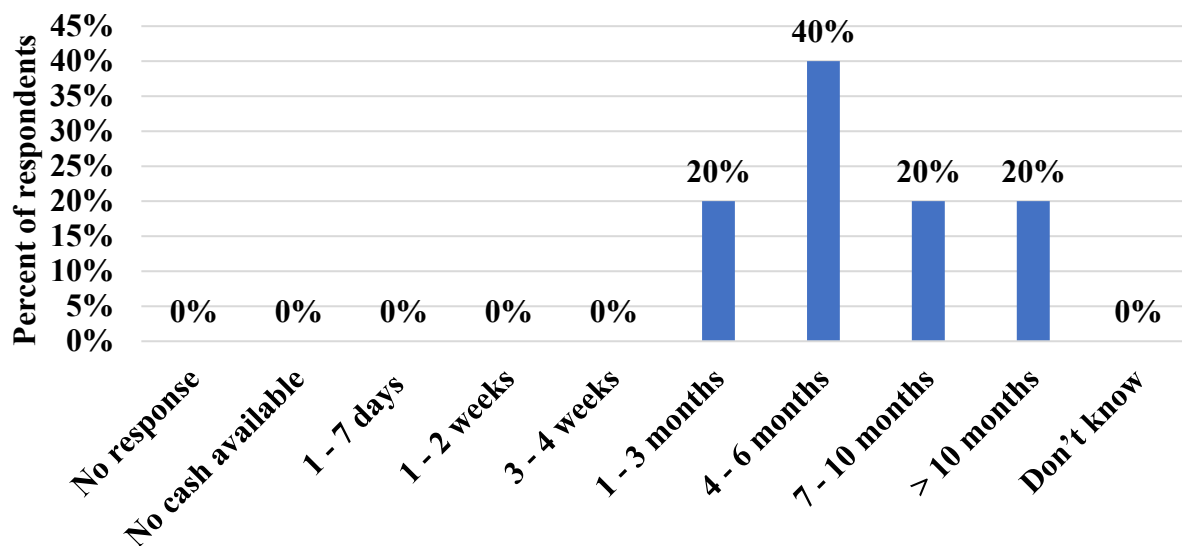
- No response : 0%
- Yes : 80%
- Maybe : 20%
- No : 0%



Q16. How would you describe the current availability of cash on hand for your farm or allied business, including financial assistance or loans? Please select how long a period the current cash on hand will cover:

(n = 5)

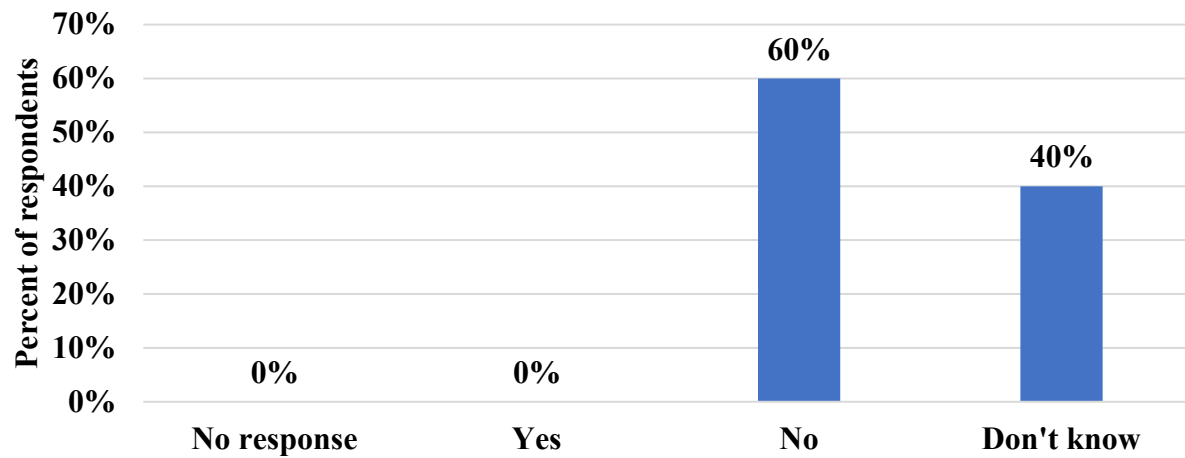
- No response : 0%
- No cash available for business operations : 0%
- 1 - 7 days of operations : 0%
- 1 - 2 weeks of operations : 0%
- 3 - 4 weeks of operations : 0%
- 1 - 3 months of operations : 20%
- 4 - 6 months of operations : 40%
- 7 - 10 months of operations : 20%
- More than 10 months of operations : 20%
- Don't know : 0%



Q17. Will holding market ready product, as a result of the coronavirus disease (COVID-19), make it less marketable?

(n = 5)

- No response : 0%
- Yes : 0%
- No : 60%
- Don't know : 40%



Q17.1. Will holding market ready product, as a result of the coronavirus disease (COVID-19), result in: Please select all that apply.

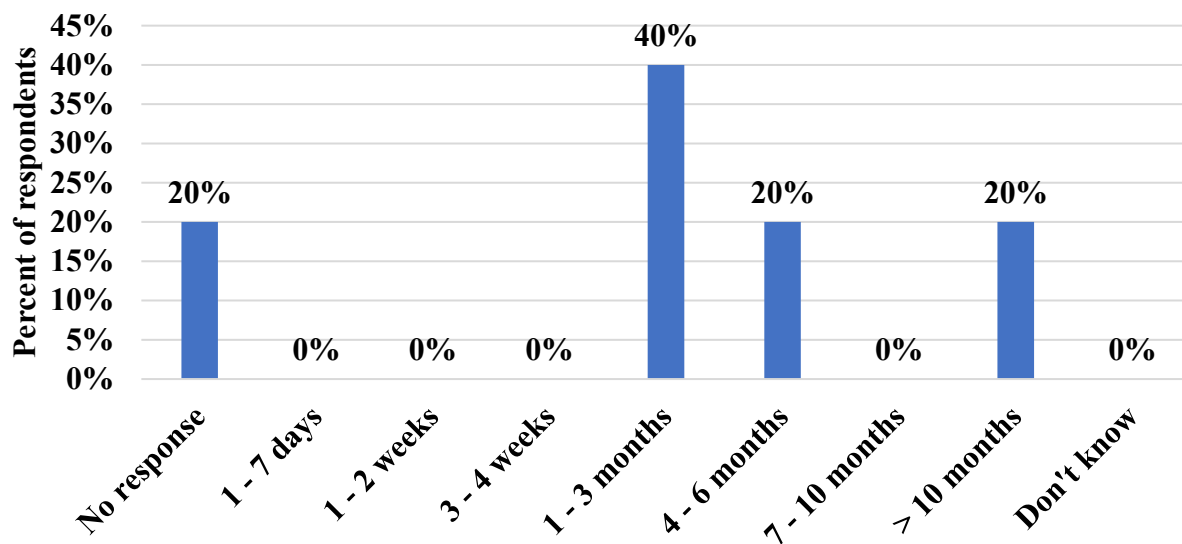
(n = 0)

- Reduced quantity sold : N/A
- Reduced price : N/A
- Reduced quality of product : N/A
- Other : N/A

Q18. How long can your farm or allied 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 = 5)

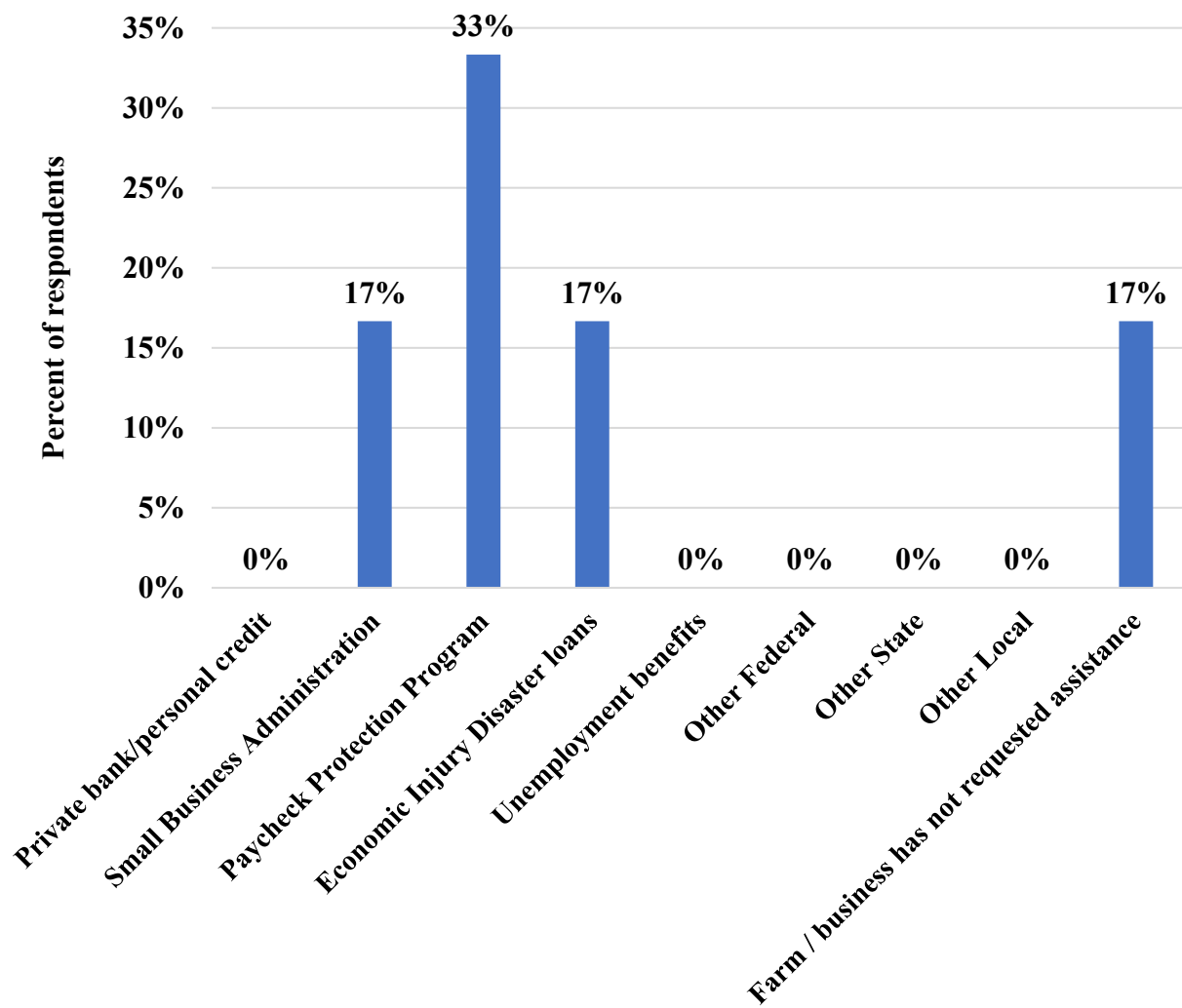
- No response : 20%
- 1 - 7 days : 0%
- 1 - 2 weeks : 0%
- 3 - 4 weeks : 0%
- 1 - 3 months : 40%
- 4 - 6 months : 20%
- 7 - 10 months : 0%
- More than 10 months : 20%
- Don't know : 0%



Q19. Please indicate if your farm or allied business has applied for loans or financial assistance from any of the following programs in the period of time between April 10th 2020 and June 29th 2020: (please select all that apply)

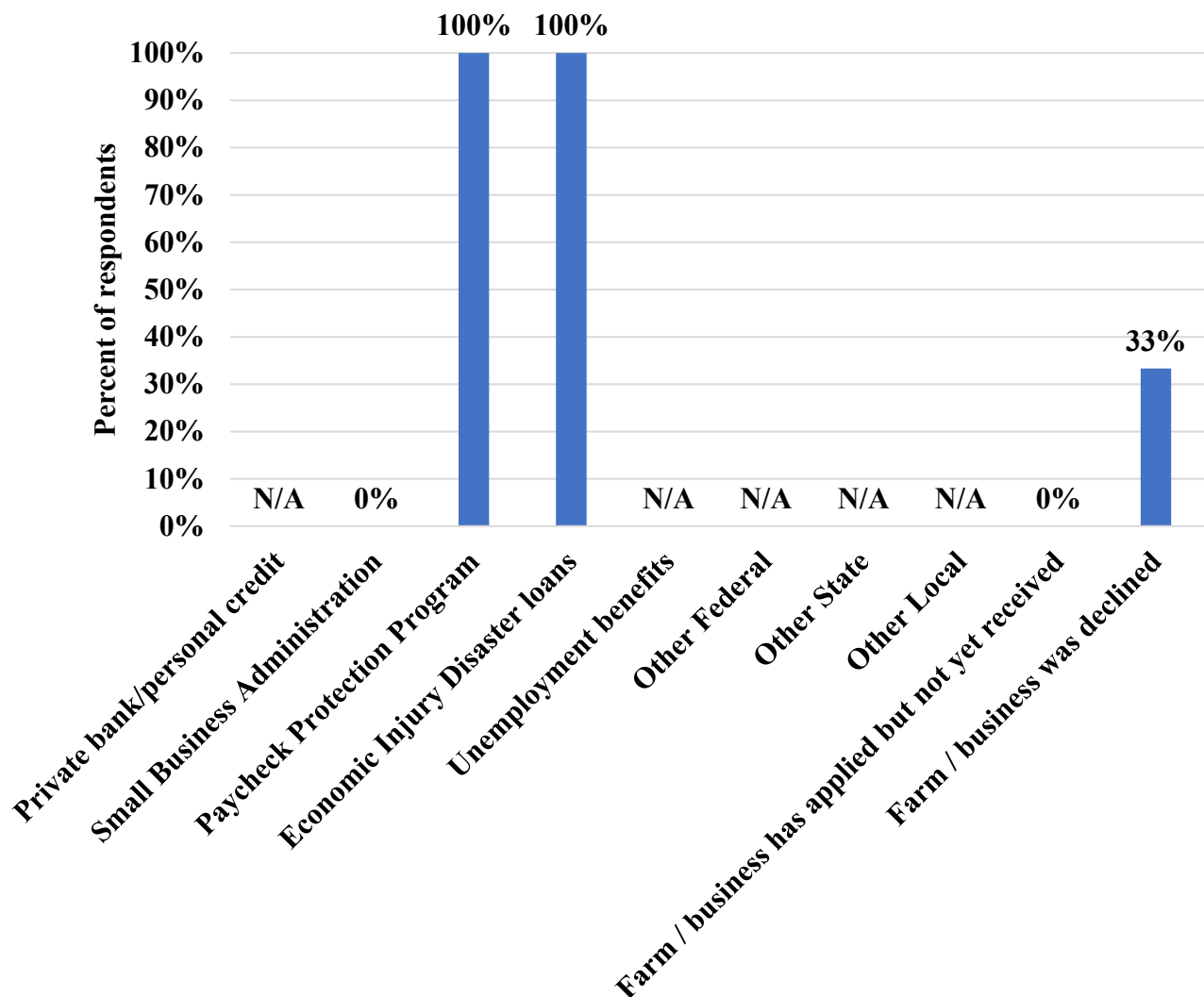
(n = 6)

- Private bank loans / personal line of credit : 0%
- Small Business Administration loans (SBA) : 17%
- Paycheck Protection Program loans (PPP) : 33%
- Economic Injury Disaster Loans (EIDL) : 17%
- Unemployment benefits : 0%
- Other **Federal** program or initiative (please describe): : 0%
- Other **State** program or initiative (please describe): : 0%
- Other **Local** program or initiative : 0%
- Farm or business has not requested financial assistance from any source : 17%



Q19.1. Please indicate if your farm or allied business has received loans or financial assistance from any of the following programs that you applied for: (please select all that apply)

- Private bank loans / personal line of credit (n = 0) : NA
- Small Business Administration loans (SBA) (n = 1) : 0%
- Paycheck Protection Program loans (PPP) (n = 2) : 100%
- Economic Injury Disaster Loans (EIDL) (n = 1) : 100%
- Unemployment benefits (n = 0) : NA
- Other **Federal** program or initiative (n = 0) : NA
- Other **State** program or initiative (n = 0) : NA
- Other **Local** program or initiative (n = 0) : NA
- Farm or business has applied but not yet received loans or assistance (n = 3) : 0%
- Farm or business applications have been denied / declined (n = 3) : 33%



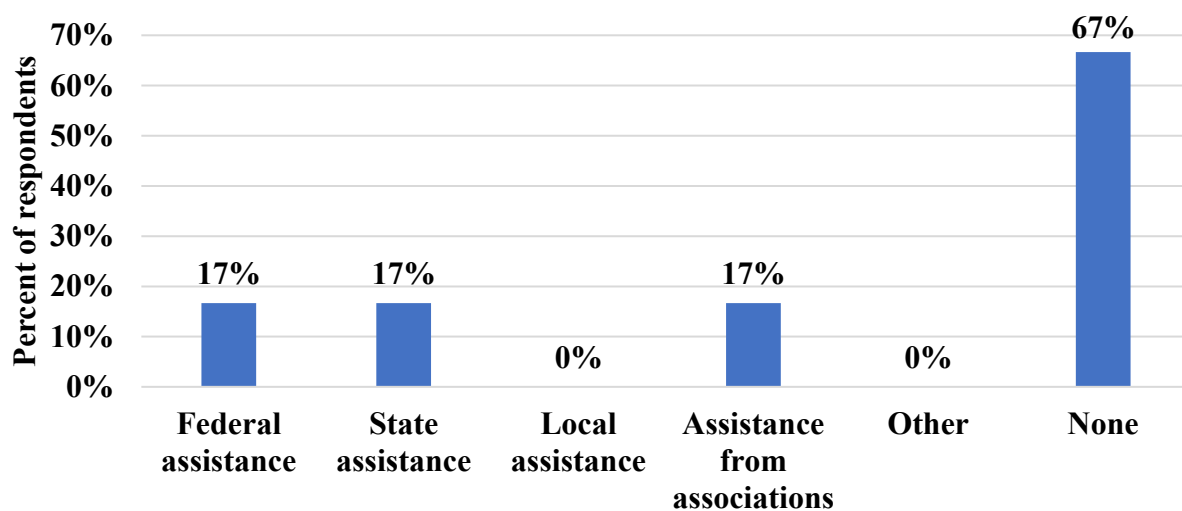
Q19.2. Please indicate if loans or financial assistance received by your farm or allied business has been helpful?

Financial Assistance Program	No response	Yes	No
Private bank loans / personal line of credit (n = 0)	NA	NA	NA
Small Business Administration loans (SBA) (n = 0)	NA	NA	NA
Paycheck Protection Program loans (PPP) (n = 2)	0%	100%	0%
Economic Injury Disaster Loans (EIDL) (n = 1)	0%	100%	0%
Unemployment benefits (n = 0)	NA	NA	NA
Other Federal program or initiative (n = 0)	NA	NA	NA
Other State program or initiative (n = 0)	NA	NA	NA
Other Local program or initiative (n = 0)	NA	NA	NA

Q20. 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 = 6)

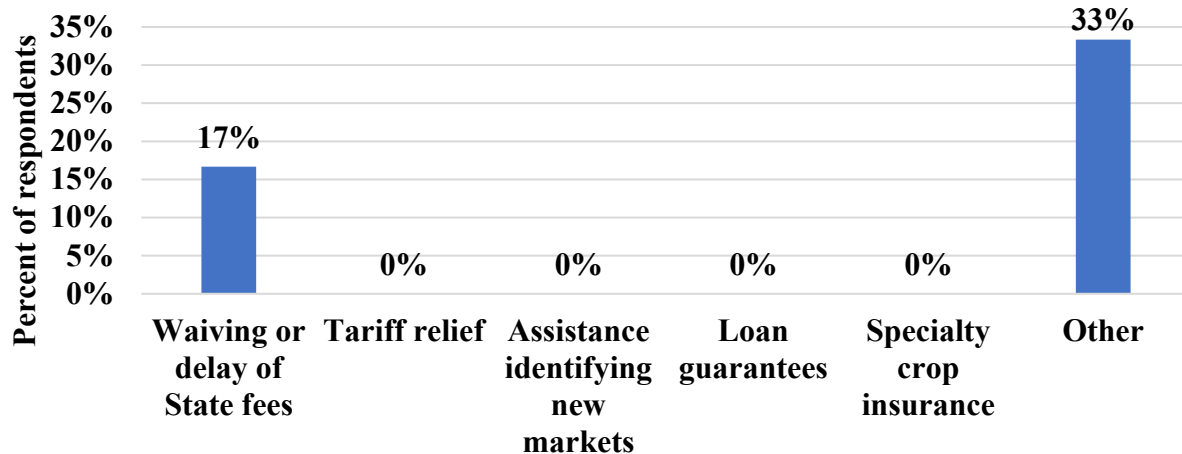
- Federal assistance : 17%
- State assistance : 17%
- Local assistance : 0%
- Assistance from associations : 17%
- Other : 0%
- None : 67%



Q21. Would assistance with any of the following be helpful to your farm or business right now? Please select all that apply.

(n = 6)

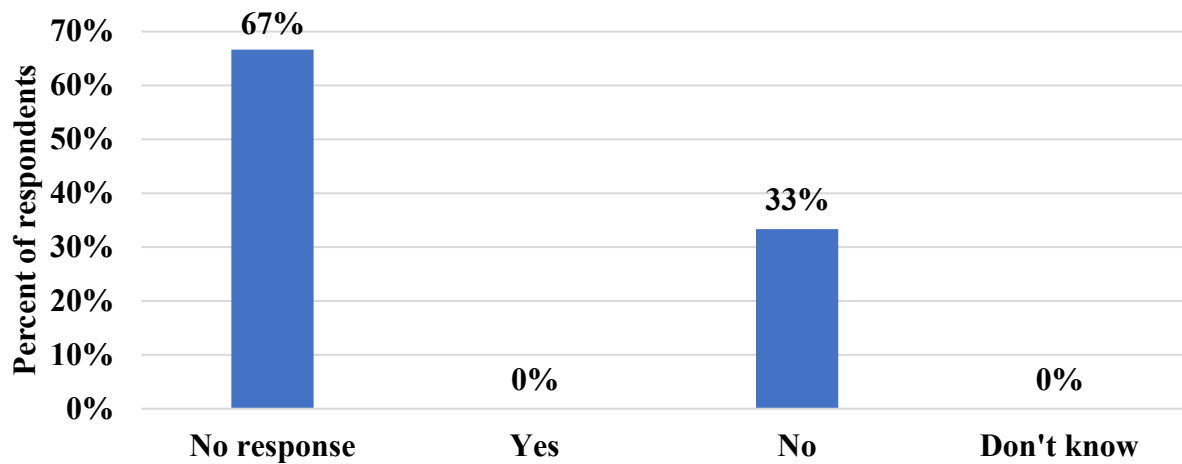
- Waiving or delay of State fees : 17%
- Tariff relief : 0%
- Assistance identifying new markets : 0%
- Loan guarantees : 0%
- Specialty Crop Insurance : 0%
- Other : 33%



Q22. 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?

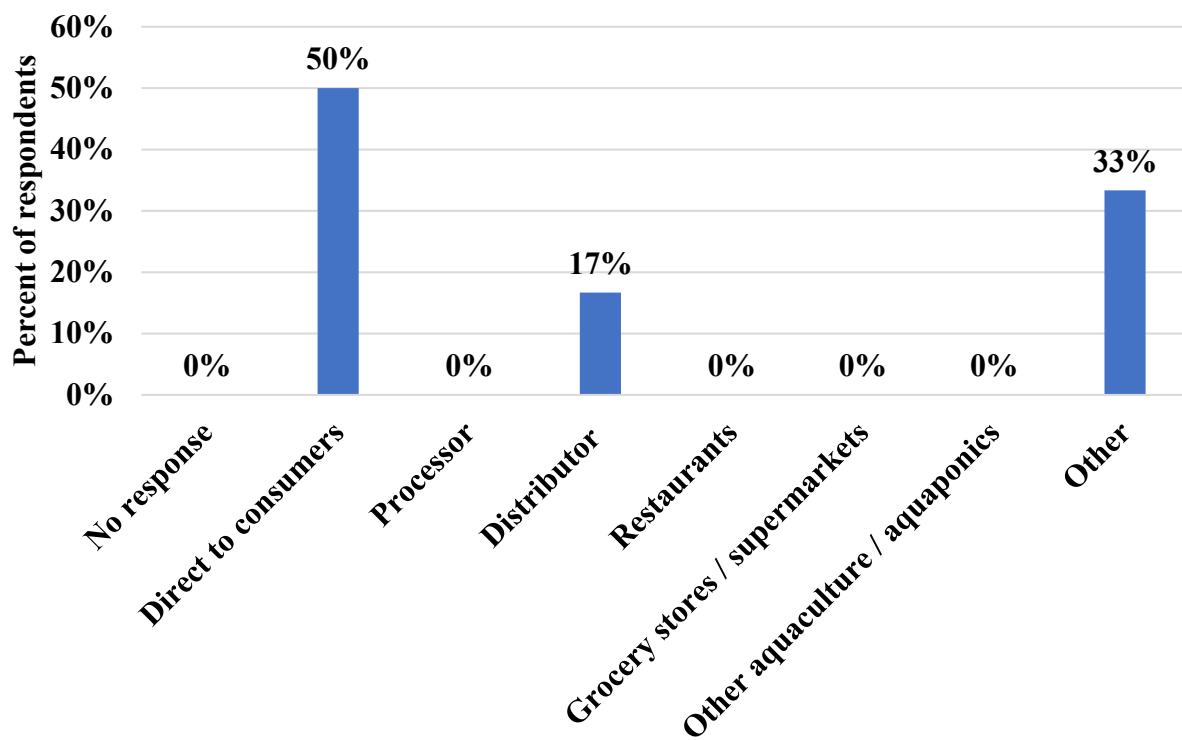
(n =6)

- No response : 67%
- Yes : 0%
- No : 33%
- Don't know : 0%



Q23. How did your farm or allied business primarily market or sell aquaculture / aquaponics products before the effects of the coronavirus disease pandemic (COVID-19)?
(n = 6)

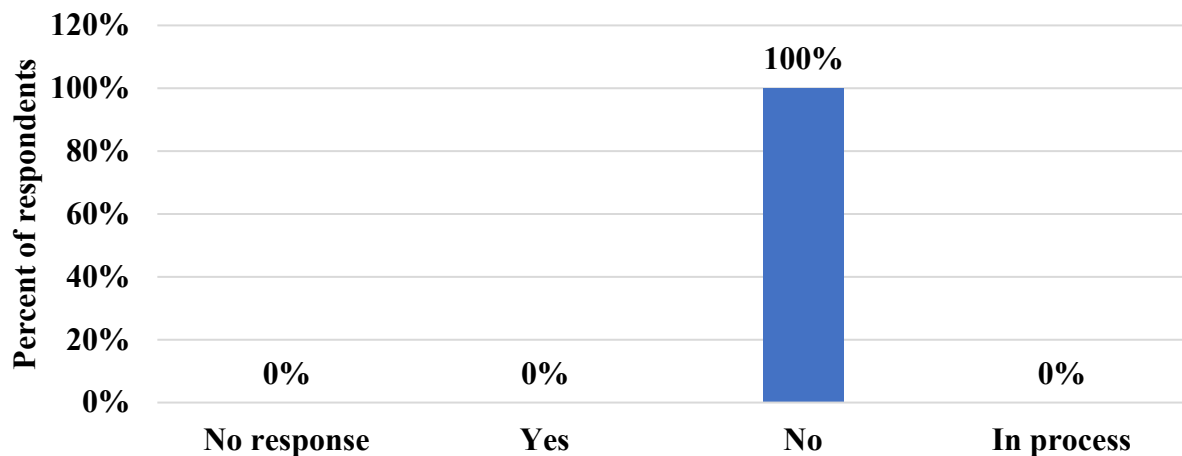
• No response	:	0%
• Direct to consumers	:	50%
• Processor	:	0%
• Distributor	:	17%
• Restaurants	:	0%
• Grocery Stores / Supermarkets	:	0%
• Other aquaculture/aquaponics farms or businesses	:	0%
• Other	:	33%



Q23.1. Did your farm or allied business implement or attempt to implement a new marketing or sales channel in the period of time between April 10th 2020 and June 29th 2020 because of coronavirus disease (COVID-19)?

(n = 6)

- No response : 0%
- Yes : 0%
- No : 100%
- In the process of implementing : 0%



Q23.2. What percent of sales from your farm or allied business in the period of time between April 10th 2020 and June 29th 2020 went through a new marketing channel?

(n = 0)

Marketing Channel	Average percent of sales
Direct to consumers / end users	N/A
Processor	N/A
Distributor	N/A
Restaurants	N/A
Grocery stores / supermarkets	N/A
Other aquaculture / aquaponics farms or business	N/A
Other	N/A

Q23.3. If your farm or allied business implemented or attempted to implement a "Direct to consumer / end user" marketing channel, please specify the method(s) from the options below: (please select all that apply)?

(n = 0)

- Home delivery : N/A
- Curbside pickup : N/A
- Opened a retail outlet : N/A
- Online sales : N/A
- Other : N/A

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.

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