

Impacts of COVID-19 on U.S. aquaculture, aquaponics, and allied businesses located in the USDA Tropical and Subtropical Aquaculture Region:

Quarter 1 Results

March 23, 2020 to April 10, 2020

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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 the USDA **Tropical and Subtropical Aquaculture Region** respondents.

The USDA Tropical and Subtropical Aquaculture Region is comprised of the following states and U.S. allied Pacific islands: American Samoa, Commonwealth of the North Mariana Islands, Federated States of Micronesia, Guam, Hawaii, Palau, and the Republic of the Marshall Islands.

Results

Characterization of Tropical and Subtropical Aquaculture Region Respondents

Quarter 1 survey results showed that there were **12 participants from the Tropical and Subtropical Aquaculture Region** as defined by USDA. Forty-two percent of Tropical and Subtropical respondents primarily sold their products to “other” market channels. Comments provided by respondents indicated that products went to community outreach, conservation, research contracts to government and other producers, and broodstock. Based on the comments provided by respondents it would appear that a few of the respondents to the Quarter 1 survey from the Tropical and Subtropical Aquaculture Region were not strictly for-profit producers, but affiliated with a university or non-profit organizations. Market channels for direct to retail, grocery stores/supermarkets, and other aquaculture/aquaponics producers were tied at 17%. Eight percent of respondents chose not to answer this question (Table 1).

Table 1. Primary marketing channel for Tropical and Subtropical respondents.

Category	Percentage
Other	42%
Direct to customers	17%
Grocery stores/supermarkets	17%
Other aquaculture/aquaponic farms	17%
No response	8%
Processor	0%
Distributor	0%
Restaurants	0%

Respondents in the Tropical and Subtropical region varied in terms of their reported scales of production. Survey respondents ranged from a production scale of \$5,001 to \$10,000 in annual sales (8%) to in excess of \$1 million in annual sales (Table 2). Thirty-three percent of respondents reported annual sales in the \$500,001 to \$1 million range, followed by those with sales of \$50,001 to \$100,000 (17%). Another 17% of respondents chose not to respond to this question. It should also be noted that respondents that indicated their production scale to be in excess of \$1 million annually, did not specify a value.

Table 2. Scale of Tropical and Subtropical respondent farms/businesses.

Category	Percentage
\$500,001 - \$1 million	33%
\$50,001 - \$100,000	17%
No response	17%
> \$1 million	8%
\$100,0001 - \$250,000	8%
\$10,001 - \$25,000	8%
\$5,001 - \$10,000	8%
\$250,0001 - \$500,000	0%
\$25,001 - \$50,000	0%
\$1,001 - \$5,000	0%
\$1 - \$1,000	0%

Key Findings

Ninety-two (92%) percent of survey respondents from the Tropical and Subtropical Aquaculture Region reported that their farm or business had been impacted by the COVID-19 pandemic. One respondent (8%) was uncertain or unsure whether their farm or business had been impacted. The one respondent indicated that they expected their farm would “probably not” be affected by the coronavirus disease pandemic in 2020.

When asked whether their farm or business would survive the next 3 months without external intervention (such as government assistance), 55% of respondents said, “yes”. Thirty-six percent reported that their farm or business would “maybe” survive 3 months without external assistance, and 9% chose not to answer this question. When asked if the farm or business could survive the next 6 months without external intervention, 27% said that their farm or business would survive, 64% said “maybe”. **No respondents from the Tropical and Subtropical Aquaculture Region indicated that their farm would not survive 3 months or 6 months without external intervention.** Increasing the time frame in the question to 12 months without external assistance, **27% of respondents in the Tropical and Subtropical Aquaculture Region indicated that they would not survive**, 45% said that their farm or business would “maybe” survive, and 18% said that they would survive.

Lost Sales

Forty-five percent of Tropical and Subtropical Aquaculture Region farms or businesses indicated that they had lost sales due to the COVID-19 pandemic. Twenty-five percent of respondents indicated that they had lost sales to international or export markets outside the U.S. Thirty-eight percent of respondents were not able to estimate the value of lost sales in the first quarter of 2020. A quarter of respondents indicated they had lost between \$100,001 and \$250,000. Thirteen percent of respondents said that they had lost between \$25,001 and \$50,000, \$5,001 and \$10,000, and \$1,001 and \$5,000.

Reported lost sales included canceled private and government contracts; **73% percent of survey respondents reported losing private contracts** for sales and 9% reported losing government (state or federal) contracts for sales. Only one specific comment was provided with regard to lost sales, which has been excluded from this summary to preserve confidentiality of respondents.

Survey participants were asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. **Sixty-four (64%) percent of responding Tropical and Subtropical Aquaculture Region farms or businesses indicated that they expected to lose sales in 2020**, with 29% expecting to lose sales to international markets. Twenty-nine (29%) percent of respondents could not estimate the value of expected lost sales at the time of the first quarter survey. Of the respondents that did estimate expected lost sales, 29% indicated they expected to lose between \$25,001 and \$50,000; with 14% expecting to lose in excess of \$1 million, between \$100,001 and \$250,000, and between \$5,001 and \$10,000. Respondents did not elaborate on the value in excess of \$1 million.

When asked how long the farm or business could survive without sales before suffering longer term cash flow effects, 36% of respondents did not answer this question. Twenty-seven percent said between 1 to 3 months, and 18% percent said more than 10 months. Nine percent said their farm or business could survive 4 to 6 months or less than one month without sales. **It should be noted that data collection through the survey was open for a period of 3 weeks (March 23rd to April 10th), meaning that more than approximately 2 months have eclipsed between respondent participation and the preparation of this report.**

Labor

Eighteen percent of respondents reported that they had laid off employees as a result of the COVID-19 pandemic, and 36% of respondents indicated that they “will have to soon” at the time they completed the survey. Forty-five percent of responding farms and businesses had not laid off employees at the time of the Quarter 1 survey. All of the Tropical and Subtropical region farm or business respondents that had laid off employees, indicated that they had laid off between 1 and 3 employees. Of those employees who had been laid off, 17% of Tropical and Subtropical region respondents indicated that these were “Short-Time” or “Shared-Work” employees. Sixty-seven percent stated that none of the workers laid off were in this category. Seventeen percent chose not to respond to this question. One respondent reported having lost labor time having to implement COVID-19 safety measures throughout the work day. Another respondent indicated limiting employee hours to minimize contact in both the field and office.

Respondents were also asked how many weeks before they would have to decide whether to lay off employees. **Half (50%) of the respondents who answered this question indicated that they would have to decide within 4 to 6 weeks whether to lay off employees.** A quarter (25%) said they had between 1 and 3 weeks to make a decision, and another 25% said that they had between 7 and 10 weeks to make a decision. **It should be noted that the data collection period was open for 3 weeks, which means that some respondents completed the survey approximately 2 months before the preparation of this report.** Tropical and Subtropical Aquaculture Region respondents were further asked how many employees they would need to lay off at that time. Seventy-five percent said that they will have to lay off from 1 to 3 employees and another 25% said from 4 to 6 employees.

Forty-five percent of respondents had experienced some type of labor challenge. Thirty-six percent of respondents reported that employees have missed work due to the COVID-19 pandemic. The labor shortage due to sickness or self-quarantine has resulted in challenges with production. **Fifty (50%) percent of responding farms or businesses indicated that employees had missed work between 7 and 10 days, followed by 25% who reported employees missing between 11 and 14 days, and another 25% who reported employees missing more than 14 days.**

There were not many comments regarding specific labor challenges provided by respondents. One respondent noted that a shortage of labor was affecting the operation of their farm or business.

Challenges to the Farm or Business

Eighteen percent of respondents noted production challenges and increased costs of production. Twenty-seven percent noted “other” challenges; namely, a lack of shipping services, restricted access to land, and lost research contracts. Two respondents indicated that they had experienced challenges with production inputs and challenges with repair, construction, consultant, or engineering services. Respondents specifically noted production input difficulties with seeds for aquaponics due to a shut-down of non-essential businesses. Respondents also noted that scheduled repair work was on hold as a result of COVID-19. One respondent noted that access to their site of operations was restricted, resulting in having to cease their work activities.

Respondents noted no challenges with financial services or “other” challenges affecting production.

Survey participants were asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. Twenty-seven percent of farms expected challenges with production inputs (e.g. feed and seed), another 27% expected to experience increased costs of production. Thirty-three percent could not identify specific production challenges that they expected to experience at the time they completed the survey.

Marketing of Products

Thirty-six percent of respondents did not respond when asked how long they could hold market ready product before it becomes an issue for new crops or plants. Nine percent of respondents said they could hold market ready product for less than 1 month before it would interrupt future crops, in addition to 9% of respondents who said between 7 and 10 months or greater than 10 months. Eighteen percent of respondents stated between 1 and 3 months or 4 to 6 months.

Thirty-six percent of respondents said “yes” holding market ready product would make it less marketable. Eighteen percent said “no” and 45% were unsure if holding market ready product would make it less marketable. Half of the respondents who indicated holding product would make it less marketable, indicated doing so would lead to a reduced quantity sold, with another 50% stating it would lead to reduced price. A quarter of respondents stated that holding market ready product would lead to “other”; namely there would be less demand for larger fish. This same respondent indicated that holding market ready product would also result in the increased risk of product losses and diminished ROI.

Increased Demand for Products

Eighteen percent of respondents reported an increase in demand for their products. With one respondent estimating between \$50,001 and \$100,000 and another estimating between \$5,001 and \$10,000 in increased sales.

Twenty-seven percent of respondents reported that they expected to experience an increase in demand. Of these, 29% said that they expected increased demand of \$25,001 to \$50,000. Another 29% could not estimate the value of increased sales at the time of completing the survey. Fourteen percent of those who expected to experience an increase in demand estimated either a greater than \$1 million increase, between \$100,001 and \$250,000, or between \$5,001 and \$10,000 increase in sales.

Assistance to Farms/Businesses

The survey included questions on the types of assistance that might be helpful to farm or business respondents. Sixty-four percent of Tropical and Subtropical Aquaculture Region respondents indicated that federal assistance would increase the likelihood of survival of their farm or business. Thirty-six percent of respondents said that state assistance would help, and 27% said local assistance would help. Only 9% said assistance from associations would be helpful. Twenty-seven percent said there were other steps or types of assistance that would increase the likelihood for the farm or business to survive. Eighteen percent said none.

When asked more specifically about the types of assistance that would be helpful to their farm or business, 27% said waiving or delaying of state fees would be helpful, 18% said tariff relief and assistance identifying new markets. Twenty-seven percent also said “other”; with one respondent pointing out that assistance for their clients would help to support the research performed by the business. Other comments about specific assistance that would help farms and allied businesses were grants or direct payments to cover lost sales, offering zero interest loans, renewable energy credits, shipping or feed rebates, and relief or delaying of state and federal taxes. One respondent noted that an extension of PPP would be helpful to their business.

All participating respondents (100%) did not answer the question asking if there were existing programs for which their farm or business does not currently qualify that would be of assistance during the pandemic.

Discussion and Conclusion

Responses by the Tropical and Subtropical Aquaculture Region farms and businesses to the Quarter 1 survey show that the aquaculture, aquaponics, and allied businesses within the region have been severely impacted by the COVID-19 pandemic. Ninety-two percent of responding farms or businesses indicated that they had been affected by the pandemic. Forty-five percent had experienced lost sales, and 73% have had orders from private companies canceled (9% had government orders canceled). While lost sales were the immediate challenge and concern for farms and businesses, other challenges related to production included labor challenges, challenges with production inputs, repair services, and access to work sites. Thirty-six percent of respondents indicated that holding market ready product would make it less marketable in the future; with resulting consequences for the quantity of product sold (50%), and reduced prices for products (50%). A majority (55%) of respondents from the Tropical and Subtropical Aquaculture Region indicated that their farm or business would survive the next 3 months without external assistance; that percentage decreasing as the term was increased to 6 months (27%) and 12 months (18%).

Key findings from Tropical and Subtropical Aquaculture Region farm and business respondents include:

- 92% have been impacted by COVID-19
- 73% have had private orders/contracts canceled
- 81% have already or will soon have to lay off employees
- 45% have experienced lost sales
- 55% can survive 3 months without external intervention

References

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