

Aquaponics Survey

Start of Block: Welcome

A Survey of Aquaponic Stakeholder Groups

focused questions for hobbyists, educators, and aquaponic producers

A Study By:

The School of Fisheries, Aquaculture, and Aquatic Sciences
Auburn University

Greetings from the Auburn University

School of Fisheries, Aquaculture, and Aquatic Sciences

The School of Fisheries, Aquaculture, and Aquatic Sciences (SFAAS) appreciates your participation in this study to generate a 'snapshot' of the status of the aquaponics industry. We recognize and appreciate your commitment to improving and advancing aquaponics.

This survey is intended for those age 18 and older, and the questions should take about 20 minutes to complete. Please fill out this survey to the best of your ability, although some questions may not apply to you. Your participation is voluntary, and your responses will be kept confidential and any data collected will be presented in aggregate form to ensure anonymity. If you have any questions or wish to provide additional feedback, please do so in the comments section at the end of this survey, or through email.

The information you share with us will be used to develop targeted research, teaching, and extension efforts to support the needs of the aquaponics industry.

Thank you for your participation. We look forward to hearing from you!

Sincerely,

D. Allen Pattillo, M.S.
Ph.D. Student - Aquaponic Economics
Auburn University
dap0005@auburn.edu

Dr. Terry Hanson, Ph.D.
Professor & Extension Specialist - Aquaculture Economics
Auburn University

Dr. David Cline, Ph.D.
Associate Extension Professor - Aquaculture
Auburn University

End of Block: Welcome

Start of Block: Introduction questions

How long have you been working with aquaponics?

- < 1 year (1)
 - 1-2 years (2)
 - 3-5 years (3)
 - 6-10 years (4)
 - 11-20 years (7)
 - more than 20 years (8)
-

What first got you interested in aquaponics? (check all that apply)

- Fish (1)
 - Plant (2)
 - Healthy Food (3)
 - Environmental Sustainability (4)
 - Education /Teaching (5)
 - Making Money (7)
 - Need to know for my work (8)
 - Self Sufficiency (9)
 - Other (Please Explain) (6)
-

Which of the following categories best describes your interest in aquaponics?

- Hobby/Home Gardening (1)
- Producer (For-Profit Producer or Non-Profit Producers) (2)
- Education (College/University, K-12, Extension, etc) (5)
- Supporting Groups (Public agency, equipment supplier, community groups, etc.) (3)

Skip To: 7 If Which of the following categories best describes your interest in aquaponics? = Supporting Groups (Public agency, equipment supplier, community groups, etc.)

What is your current stage of aquaponic system development?

- Researching/gathering information (4)
 - Planning and Design (1)
 - Facility Constructed (2)
 - Currently in Operation (3)
 - Not Applicable (6)
-

Please describe the construction style of your planned/current aquaponics system

- Home made/Do-It-Yourself (DIY) (1)
 - Commercially available/Turn-Key (2)
 - Hybrid of DIY and Turn-Key (3)
 - Designed by a consultant (5)
 - Not Applicable (4)
-

Is your current/planned aquaponic system:

- Coupled (fully recirculating between the fish and plant portions of the system) (1)
 - Decoupled (water flows from fish to plants and does not return to fish) (2)
 - Not sure (4)
 - Not Applicable (5)
-

What type of setting is your current/planned aquaponic system located in?

- Urban (1)
- Suburban (2)
- Rural (3)
- Industrial (4)

Please rate the *importance* of the following topics:

	Not important (1)	Slightly important (2)	Moderately important (3)	Very important (4)	Extremely important (5)
System Design (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Construction (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Maintenance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish Health/Disease (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pest/Disease/Nutrient Deficiencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Record Keeping (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Food Products (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate *your knowledge* of the following topics:

	Not knowledge able (1)	Slightly knowledge able (2)	Moderately knowledge able (3)	Very knowledge able (4)	Extremely knowledge able (5)
System Design (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Construction (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Maintenance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish Health/Disease (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pest/Disease/N utrient Deficiencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Record Keeping (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Food Products (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate the *accessibility of quality information* on the following topics:

	Not accessibl e (1)	Slightly accessibl e (2)	Moderate ly accessibl e (3)	Very accessibl e (4)	Extremel y accessibl e (5)	Do not know (6)
System Design (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Construction (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Maintenance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish Health/Disease (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pest/Disease/Nutri ent Deficiencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Record Keeping (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Food Products (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Where do you obtain information regarding aquaponics?

Select the items in the left column and drag them into the boxes on the right. Rank each category in terms of importance that you place on each information source, with 1 being most important.

I use this resource	I want to use this resource	I do not use this resource
_____ Peer-Reviewed Scientific Journals (1)	_____ Peer-Reviewed Scientific Journals (1)	_____ Peer-Reviewed Scientific Journals (1)
_____ Extension Agents (2)	_____ Extension Agents (2)	_____ Extension Agents (2)
_____ Extension Publications (3)	_____ Extension Publications (3)	_____ Extension Publications (3)
_____ Internet/Videos (4)	_____ Internet/Videos (4)	_____ Internet/Videos (4)
_____ Social Media (5)	_____ Social Media (5)	_____ Social Media (5)
_____ Friends/Family (6)	_____ Friends/Family (6)	_____ Friends/Family (6)
_____ Books/Library (7)	_____ Books/Library (7)	_____ Books/Library (7)
_____ Classes/Workshops (8)	_____ Classes/Workshops (8)	_____ Classes/Workshops (8)
_____ Consultants (9)	_____ Consultants (9)	_____ Consultants (9)
_____ Manufacturers/Suppliers (11)	_____ Manufacturers/Suppliers (11)	_____ Manufacturers/Suppliers (11)
_____ Other Producers/Educators (10)	_____ Other Producers/Educators (10)	_____ Other Producers/Educators (10)

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

Please describe the scale of your current/planned aquaponic system.

Please enter the approximate values in the text boxes below.

For those using metric units, please convert to English units.

[Unit Converter](#)

Please report in US dollars.

[Currency converter](#)

	Fish Production (1)	Plant Production (1)

Production Area (square feet) (1)		
Water Volume (gallons) (2)		
Production (pounds/year) (3)		
Investment Cost (\$USD) (5)		

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

What is the funding source for your current/planned aquaponic system?

(Check all that apply)

- Personal funds (1)
 - Dealer financing (8)
 - Investors/private funds (2)
 - Bank/government loan (3)
 - Private grant (5)
 - Government grant (4)
 - Credit card (6)
 - Prefer not to disclose (7)
-

Do you sell any products relating to aquaponics?

(fish, plants, education/training, materials/supplies, etc.)

- Yes (4)
 - No (5)
-

Display This Question:

If Do you sell any products relating to aquaponics? (fish, plants, education/training, materials/su... = Yes

Please indicate which of the following products or services you sell relating to aquaponics.

(check all that apply)

	(4)
Food Fish (10)	<input type="checkbox"/>
Ornamental Fish (11)	<input type="checkbox"/>
Vegetable Produce (12)	<input type="checkbox"/>
Microgreens (5)	<input type="checkbox"/>
Ornamental Plants (13)	<input type="checkbox"/>
Materials/Supplies (2)	<input type="checkbox"/>
Training/Education (1)	<input type="checkbox"/>
Black Soldier Flies (8)	<input type="checkbox"/>
Compost (3)	<input type="checkbox"/>
Fish Emulsion (4)	<input type="checkbox"/>
Composting Worms (6)	<input type="checkbox"/>
Worm Castings (7)	<input type="checkbox"/>
Other (please specify) (14)	<input type="checkbox"/>

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

Do you plan to increase the scale of your aquaponics operation in the next 5 years?

- Yes (1)
- Maybe (2)
- No (3)
- Not Applicable (4)

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

Have you encountered any regulatory roadblocks regarding your aquaponics operation?

- Yes (1)
- No (2)
- Not Applicable (3)

Display This Question:

If Have you encountered any regulatory roadblocks regarding your aquaponics operation? = Yes

If yes, please specify the regulatory roadblocks that you have encountered.

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

Are there any permits or licenses that are required for your aquaponics operation?

- Yes (1)
- No (2)
- I don't know (3)
- Not Applicable (4)

Display This Question:

If Are there any permits or licenses that are required for your aquaponics operation? = Yes

If yes, please specify what permits or licenses that are required.

Please specify your top three challenges relating to aquaponics?

Write your response in the text boxes below.

Challenge #1 (1) _____

Challenge #2 (2) _____

Challenge #3 (3) _____

End of Block: Introduction questions

Start of Block: Hobbyist Questions

What sort of aquaponic training do you have? (check all that apply)

Formal Training (University/College) (1)

Informal Training (Workshop/Online) (2)

Work Experience (Farm Training) (3)

No Training (4)

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

How much time do you personally spend working with your system per week?

- 0-10 hours (1)
- 11-20 hours (2)
- 21-30 hours (3)
- 31-40 hours (4)
- 41-60 hours (5)
- > 60 hours (6)

End of Block: Hobbyist Questions

Start of Block: Fish Production

Fish Production

*The questions below should be answered based on the **fish production** in your aquaponics system.*

How long have you been producing fish?

Type the appropriate value in the box below.

Please round to nearest 0.5 year.

- Number of Years Producing Fish (1)
-

What aquaculture techniques do you use? (check all that apply)

- Recirculating Aquaculture Systems (Clear Water) (1)
 - Pond Systems (Green Water) (2)
 - Biofloc Systems (Brown Water) (3)
 - Flow-Through Systems (Raceways) (4)
 - Cages (Net-Pens) (5)
 - Other (Specify) (6) _____
-

Please tell us about your fish production system(s).

Select from the drop-down menu or fill in the text entry boxes.

For those using metric units, please convert to English units.

[Unit Converter](#)

	Fish Tank Size	Tank Shape	Tank Construction Material	Production Capacity
	Volume (gallons) (1)			Number of Tanks (1)
1 (1)		▼ Round (1 ... Other (3))	▼ Plastic (1 ... Other (7))	
2 (4)		▼ Round (1 ... Other (3))	▼ Plastic (1 ... Other (7))	
3 (2)		▼ Round (1 ... Other (3))	▼ Plastic (1 ... Other (7))	

Select the following aquaculture system components that you use in your aquaponic system.

(check all that apply)

- Clarifier/solids settler (1)
- Combination solids/biofilter (3)
- Dedicated mechanical filter (2)
- Dedicated biological filter (9)
- Protein skimmer (15)
- Aeration (4)
- Pure Oxygen (5)
- Ozone sterilization (6)
- Ultraviolet sterilization (7)
- Heater (8)
- Chiller (10)
- Water pump (11)
- Airlift (12)
- Environmental monitoring systems (13)
- Automated feeders (14)
- Backup generator (16)

What aquatic organisms do you grow? (check all that apply)

- Baitfish (minnows/shiners) (12)
 - Barramundi/Jade Perch (27)
 - Bluegill/Hybrid Sunfish (24)
 - Catfish (13)
 - Common/Grass Carp (14)
 - Crayfish/Prawn (17)
 - Largemouth Bass (25)
 - Ornamental (Koi/Goldfish/aquarium fish) (2)
 - Striped Bass/Hybrid (26)
 - Tilapia (1)
 - Trout/Salmon (5)
 - Other (Specify) (23) _____
-

What are the key selection criteria that you use when choosing the *fish species* you raise?

(Check all that apply)

- Personal preferences (8)
 - What the consumers want (including restaurants, groceries & individual buyers) (1)
 - What grows well in my region (2)
 - What is easy to grow in an aquaponics system (3)
 - What is most profitable (4)
 - Regional food preferences (5)
 - Regulatory allowances (6)
 - Other (please explain) (7)
-

What conditions do you grow your fish under? *(check all that apply)*

- Outdoors/open air (1)
 - Shade house/canopy (2)
 - High tunnel (no environmental control) (3)
 - Greenhouse (with environmental control) (4)
 - Indoors/Warehouse (5)
 - Other (please specify) (6)
-

Please complete the table below, as best you can, by entering the proper values based on your *fish production for your top 2 species*.

Please convert to English units.

[Unit Converter](#)

	Species	Species
	1 (1)	2 (1)

Fish Species (common name) (1)		
Average Initial Length (inches) (2)		
Stocking Density (fish/100 gal) (3)		
Max Biomass (lbs/gal) (5)		
Average Harvest Weight (lbs) (7)		
Production Period from Stocking to Harvest (months) (9)		
Annual Feed Usage (lbs) (10)		
Survival (%) (11)		
Sales Price (\$/lb) (12)		

What portion of the year do you produce your top 2 fish species?

Please enter the names of the fish in the boxes on the left and mark the boxes on the right for all seasons in which they are grown.

	Year Round (13)	Spring (1)	Summer (14)	Fall (15)	Winter (16)
Fish Species 1 (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish Species 2 (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

End of Block: Fish Production

Start of Block: Plant Production

Plant Production

*The following questions should be answered based on the **plant production** in your aquaponic system.*

How long have you been producing plants?

Type the appropriate value in the box below.

Please round to nearest 0.5 year

Number of years producing plants (1)

What plant varieties do you grow? *(check all that apply)*

- Basil (12)
 - Chives/Green Onion (11)
 - Cucumber (17)
 - Culinary Herbs (5)
 - Eggplant (8)
 - Flowers (21)
 - Hemp/Cannabis (26)
 - Pepper (10)
 - Leafy greens (25)
 - Lettuce (1)
 - Microgreens (27)
 - Root Crops (23)
 - Strawberry (19)
 - Tomato (6)
 - Others (Please Specify) (24)
-
-

What are the key selection criteria that you use when choosing the *plant species* you raise?

(Check all that apply)

- Personal preferences (8)
 - What the consumers want (including restaurants, groceries & individual buyers) (1)
 - What grows well in my region (2)
 - What is easy to grow in an aquaponics system (3)
 - What is most profitable (4)
 - Regional food preferences (5)
 - Regulatory allowances (6)
 - Other (please explain) (7)
-

Which of the following plant growing environments do you use?

- Outdoors/open air (1)
 - Shade house/canopy (2)
 - High tunnel (no environmental control) (3)
 - Greenhouse (with environmental control) (4)
 - Indoors/warehouse (5)
 - Other (please specify) (6)
-

What type of lighting do you use? (Check all that apply)

- Sunlight (1)
 - Fluorescent (4)
 - High Pressure Sodium (HPS) (2)
 - Incandescent (3)
 - Induction (6)
 - Light Emitting Diode (LED) (5)
 - Other (please specify) (7)
-

Plant production parameters:

Please complete, as best you can, the following table using **approximate average values** for the top 3 plant products produced on your farm.

Please convert to English units.

[Unit Converter](#)

	Plant Species	Crop Duration	Annual Production	Sales Price
	(common name) (1)	(days) (1)	(lbs) (1)	(\$/lb) (1)
1 (1)				
2 (2)				
3 (3)				

Based on the plant hardiness zone maps above, please select the zone where your facility is located.

Alaska is zone 3, Hawaii is zone 11, and Puerto Rico is Zone 12

[Click here to search for your zone by zip code.](#)

Zone 1 (36)

Zone 2 (35)

Zone 3 (24)

Zone 4 (25)

Zone 5 (26)

Zone 6 (27)

Zone 7 (28)

Zone 8 (29)

Zone 9 (30)

Zone 10 (31)

Zone 11 (32)

Zone 12 (33)

Zone 13 (34)

Page Break

What plant production techniques do you use? (check all that apply)

- Deep Water Culture/Floating Rafts (1)
 - Drip Irrigation/Dutch/Bato Buckets (2)
 - Media Beds/Flood and Drain (5)
 - Nutrient Film Technique (4)
 - Vertical Towers (6)
 - Wicking Beds (7)
 - Other (Please specify) (3)
-
-

Please select the construction materials used for your plant production systems from the list below.

(check all that apply)

- Concrete (6)
 - Fiberglass (8)
 - Metal (2)
 - Plastic (1)
 - Polystyrene (Styrofoam) (4)
 - PVC (11)
 - Rubber/Plastic Liner (10)
 - Sand/Gravel (5)
 - Soil (9)
 - Soilless Media (7)
 - Wood (3)
 - Other (12) _____
-

What portion of the year do you produce your top 3 plant species?

Please enter the names of the plants in the box on the left and mark the boxes on the right for the seasons in which they are grown.

	Year Round (13)	Spring (1)	Summer (25)	Fall (26)	Winter (27)
Plant Species 1 (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plant Species 2 (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plant Species 3 (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

End of Block: Plant Production

Start of Block: Food Safety Questions

Rate the following statements regarding your perceptions of different aspects of food safety in aquaponics.

	Strongly disagree (17)	Somewhat disagree (16)	Neither agree nor disagree (15)	Somewhat agree (14)	Strongly agree (13)
I have a solid understanding of food safety issues in aquaponic production (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider produce grown in aquaponics to be free of food-borne pathogens (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider fish grown in aquaponics to be free of food-borne pathogens (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am familiar with the current regulations in the Food Safety Modernization Act (FSMA) for aquaponics production (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Which of the following categories best describes your interest in aquaponics? = Producer (For-Profit Producer or Non-Profit Producers)

Please respond to the following statements regarding food safety protocols used on your farm.

	Yes (1)	No (2)	I'm not familiar with this (6)	Prefer not to disclose (5)
My farm is Good Agriculture Practice (GAP) certified (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My farm currently has a Hazard Analysis and Critical Control Point (HACCP) plan (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My farm is currently Best Aquaculture Practices (BAP) certified. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Which of the following categories best describes your interest in aquaponics? = Producer (For-Profit Producer or Non-Profit Producers)

What are your growing standards?

(Check all that apply)

- Certified USDA Organic (for plants) (1)
 - Grow at/above USDA Organic Standards (Not Certified USDA Organic) (2)
 - Conventional Growing (no certification standards) (3)
 - Other (please explain) (4)
-
- Not Applicable (5)

Display This Question:

If Which of the following categories best describes your interest in aquaponics? = Producer (For-Profit Producer or Non-Profit Producers)

Please respond to the following statements regarding food safety protocols used on your farm.

	Yes (1)	No (2)	I'm not familiar with this (6)	Prefer not to disclose (5)
My farm currently has <u>Standard Operating Procedures</u> (SOP's) for harvesting produce . (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My farm currently has <u>Standard Operating Procedures</u> (SOP's) for harvesting fish . (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Which of the following categories best describes your interest in aquaponics? = Producer (For-Profit Producer or Non-Profit Producers)

Please respond to the following statements regarding food safety protocols used on your farm.

	Yes (1)	No (2)	I'm not familiar with this (6)	Prefer not to disclose (5)
My farm currently has <u>Sanitation Standard Operating Procedures</u> (SSOP's) for harvesting fish . (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My farm currently has <u>Sanitation Standard Operating Procedures</u> (SSOP's) for harvesting produce . (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

The source of water for my aquaponics system is:
(check all that apply)

- City/Municipal Water (1)
 - Well Water (2)
 - Rain Water (3)
 - Surface Water (pond, river, reservoir, etc.) (4)
 - Other (please explain) (5)
-
- Not sure/Don't know (6)

Display This Question:

If Which of the following categories best describes your interest in aquaponics? = Producer (For-Profit Producer or Non-Profit Producers)

Would you like to participate in food safety research by submitting a sample of my aquaponics system water?

The results will be kept confidential and all supplies and postage are pre-paid.

If so, be sure to provide your contact information at the end of this survey.

- Yes (1)
- No (3)

End of Block: Food Safety Questions

Start of Block: Demographic Questions

Demographic Information

For statistical purposes, we need to ask you a few demographic questions. Please remember that information you provide is confidential!

Display This Question:

If Which of the following categories best describes your interest in aquaponics? != Supporting Groups (Public agency, equipment supplier, community groups, etc.)

Please provide the location of your aquaponic facility.

Country (4) _____

Postal (ZIP) code (3) _____

Is aquaponics your primary source of income?

Yes (8)

No (9)

Prefer not to disclose (11)

Please select your employment status.

- Employed full time (1)
 - Employed part time (2)
 - Unemployed looking for work (3)
 - Unemployed not looking for work (4)
 - Retired (5)
 - Student (6)
 - Disabled (7)
 - Prefer not to say (8)
-

Please select your ethnicity.

- American Indian/Alaska Native (3)
 - Asian (4)
 - Black/African American (2)
 - Hispanic/Latino (8)
 - Native Hawaiian/Pacific Islander (5)
 - White/Caucasian (1)
 - Other (6)
 - Prefer not to say (7)
-

Please select your gender.

- Male (1)
 - Female (2)
 - Prefer not to say (4)
-

Please select your education level completed.

- Less than high school (1)
 - High school graduate or Equivalent (2)
 - Some college (3)
 - Vocational/Tech/Agricultural (9)
 - Associate degree (4)
 - Bachelors degree (5)
 - Masters (6)
 - Doctorate (7)
 - Prefer not to say (8)
-

Please select your age group.

- 18 - 24 (2)
- 25 - 34 (3)
- 35 - 44 (4)
- 45 - 54 (5)
- 55 - 64 (6)
- 65 - 74 (7)
- 75 - 84 (8)
- 85 or older (9)
- Prefer not to say (10)

End of Block: Demographic Questions

Start of Block: Ending questions

What advice would you give to people considering aquaponics?

If you are willing to answer additional follow-up questions and/or provide personal statements about the issues covered in this survey, please provide your contact information below so we can reach out to you.

Be sure to provide your information here if you would like to participate in the water testing option.

(1)

Name of Person Completing this Survey: (1)	
Farm/Facility Name: (2)	
Location Address: (3)	
Location City/Town: (4)	
Location Zip Code: (5)	
Phone Number: (6)	
Email Address: (7)	

Please use the space below to provide additional comments related to this survey.

Thank you for completing this survey! Your responses are important to us and they will be kept confidential.

If you have questions or would like to be contacted about future aquaponics opportunities please send us an email at dap0005@auburn.edu

End of Block: Ending questions

Start of Block: Marketing Questions

Which of the following marketing methods do you use for your aquaponics operation?

Please rank them by importance.

Categorize the marketing methods (left column) into the boxes on the right and rank them by importance to your operation (1 = most important)

I use this currently	I want to use this	I do not use this
_____ Email (5)	_____ Email (5)	_____ Email (5)
_____ In person/point of sale (9)	_____ In person/point of sale (9)	_____ In person/point of sale (9)
_____ No Advertising (10)	_____ No Advertising (10)	_____ No Advertising (10)
_____ Print Media (Newspaper, magazine, fliers, etc.) (6)	_____ Print Media (Newspaper, magazine, fliers, etc.) (6)	_____ Print Media (Newspaper, magazine, fliers, etc.) (6)
_____ Radio (4)	_____ Radio (4)	_____ Radio (4)
_____ Signage (billboards, etc.) (11)	_____ Signage (billboards, etc.) (11)	_____ Signage (billboards, etc.) (11)
_____ Search engine (ex. google) (8)	_____ Search engine (ex. google) (8)	_____ Search engine (ex. google) (8)
_____ Social media (Facebook, Twitter, Instagram, etc.) (2)	_____ Social media (Facebook, Twitter, Instagram, etc.) (2)	_____ Social media (Facebook, Twitter, Instagram, etc.) (2)
_____ Television (3)	_____ Television (3)	_____ Television (3)
_____ Word of mouth (1)	_____ Word of mouth (1)	_____ Word of mouth (1)
_____ Other (specify) (7)	_____ Other (specify) (7)	_____ Other (specify) (7)

What percentage of your fish production go to the following markets?

Write the approximate percentage of total fish production that goes to each respective market in the boxes on the right. The totals must equal 100 percent, indicated in the bottom box.

Farmer's Market : _____ (1)

Supermarket : _____ (2)

Restaurant : _____ (3)

Direct to Consumer : _____ (5)

Donations (Food Bank, Shelters, Family and Friends) : _____ (4)

Not Sold : _____ (6)

Total : _____

What percentage of your plant production go to the following markets?

Write the approximate percentage of total plant production that goes to each respective market in the boxes on the right. The totals must equal 100 percent, indicated in the bottom box.

Farmer's Market : _____ (1)

Supermarket : _____ (2)

Restaurant : _____ (3)

Direct to Consumer : _____ (5)

Donations (Food Bank, Shelters, Family and Friends) : _____ (4)

Not Sold : _____ (6)

Total : _____

What percentage of your farm's current products are sold within...

Enter your values based on the shortest distance.

Enter your values to the closest 5%. Totals must equal 100%.

Your town/city/county : _____ (1)

Your state : _____ (2)

Your region : _____ (3)

Nationally : _____ (4)

Internationally : _____ (5)

Not Sold : _____ (6)

Total : _____

Most of my product is sold within:

Select the shortest distance based on the majority (>50%) of your product sales.

For those using metric units, please convert to English units.

[Unit Converter](#)

- 50 miles (1)
 - 100 miles (2)
 - 200 miles (3)
 - 500 miles (4)
 - 1,000 miles (5)
 - more than 1,000 miles (8)
-

How frequently do you make product deliveries per week?

- 1/week (1)
- 2-3/week (2)
- 4-6/week (3)
- 7-10/week (4)
- more than 10/week (5)

End of Block: Marketing Questions

Start of Block: Commercial Business Questions

Aquaponics Economics

The following questions are based on the economics of your aquaponics production

business. Providing this information will help create a better picture of the realities for aquaponic farmers.

Is your aquaponics operation...

- For-Profit (1)
 - Not-for-Profit/Charity (2)
-

Is your aquaponics business currently operational?

- Yes (1)
 - No (2)
-

What year did your aquaponics business first open?

Did you have any experience in aquaponics prior to starting your business?

- Yes (1)
 - No (2)
 - Not Applicable (3)
-

What are your *annual revenue* from your aquaponic business?

Please report approximate amounts in US dollars.

[Currency converter](#)

Fish Production : _____ (1)
Plant Production : _____ (2)
Agritourism : _____ (7)
Constructing Systems for Others : _____ (9)
Consulting Services : _____ (6)
Education/Training : _____ (4)
Equipment/supplies/systems : _____ (5)
Other (please specify) : _____ (8)
Total : _____

What was your **initial investment cost** for your aquaponic business?

Please report approximate amounts in US dollars.

[Currency converter](#)

Buildings : _____ (2)
Construction Labor : _____ (4)
Fish System/Equipment : _____ (5)
Greenhouse/High Tunnel : _____ (1)
Land : _____ (3)
Plant System/Equipment : _____ (6)
Tools : _____ (8)
Vehicles : _____ (7)
Other (please specify) : _____ (9)
Total : _____

What are your **annual operating costs** for your aquaponic business?
Please report approximate amounts in US dollars.

[Currency converter](#)

Electricity : _____ (2)
Energy/Gas : _____ (3)
Fish Inputs : _____ (5)
Plant Inputs : _____ (6)
Interest on Loans : _____ (9)
Insurance : _____ (12)
Labor : _____ (1)
Management : _____ (11)
Repairs & Maintenance : _____ (7)
Taxes : _____ (8)
Water : _____ (4)
Other (please specify) : _____ (10)
Total : _____

What are your **annual marketing costs** for your aquaponic business?
Please report approximate amounts in US dollars.

[Currency converter](#)

Vendor Licensing Fees : _____ (2)
Vendor Fees (Farmers Markets, etc) : _____ (3)
Media/Outreach : _____ (5)
Transportation/Delivery Cost : _____ (9)
Other (please specify) : _____ (10)
Total : _____

Do you own or lease your property?

- Own (1)
- Lease (2)
- Other (please specify) (3) _____
-

Do you consider your aquaponic business to be profitable?

- Yes (1)
 - No (3)
 - Not Sure (2)
 - Prefer not to say (4)
 - Not Applicable (5)
-

Display This Question:

If Do you consider your aquaponic business to be profitable? = Yes

How long did it take for your aquaponic business to become profitable?

- 0 to 0.5 years (1)
 - 0.5 to 1 years (2)
 - 1 to 3 years (3)
 - 3 to 5 years (4)
 - 5 to 10 years (5)
 - greater than 10 years (6)
-

There are many factors that affect the profitability of a business. **Which of these factors have the greatest positive or negative effect on the profitability of your aquaponic business? Select all that apply and rank them by importance.**

Drag the items from the column on the left and drop them in the boxes on the right. Organize them based on importance (1 = most important).

Positive Impact	Negative Impact
<input type="checkbox"/> Production scale (1)	<input type="checkbox"/> Production scale (1)
<input type="checkbox"/> Proximity to market (2)	<input type="checkbox"/> Proximity to market (2)
<input type="checkbox"/> Production methods (4)	<input type="checkbox"/> Production methods (4)
<input type="checkbox"/> Sustainability (14)	<input type="checkbox"/> Sustainability (14)
<input type="checkbox"/> Political support (16)	<input type="checkbox"/> Political support (16)
<input type="checkbox"/> Regulations (12)	<input type="checkbox"/> Regulations (12)
<input type="checkbox"/> Products grown (5)	<input type="checkbox"/> Products grown (5)
<input type="checkbox"/> Sales Price (18)	<input type="checkbox"/> Sales Price (18)
<input type="checkbox"/> Product quality (17)	<input type="checkbox"/> Product quality (17)
<input type="checkbox"/> Cost of production (7)	<input type="checkbox"/> Cost of production (7)
<input type="checkbox"/> Local climatic conditions (8)	<input type="checkbox"/> Local climatic conditions (8)
<input type="checkbox"/> Access to inputs (9)	<input type="checkbox"/> Access to inputs (9)
<input type="checkbox"/> Other (please specify) (10)	<input type="checkbox"/> Other (please specify) (10)

How many people work at your farm?

Full Time : _____ (1)
 Part Time : _____ (3)
 Seasonal : _____ (9)
 Unpaid/Family/Volunteer : _____ (8)
 Total : _____

Do you pay for employee benefits (i.e. health insurance, retirement, etc.)?

- Yes, for all employees (1)
 - Yes, for full-time employees only (2)
 - No (3)
-

Do you currently have a farm insurance policy for your aquaponics business?

- Yes (40)
 - No (41)
-

Please organize the following skills in order of importance to your aquaponics operation.

Drag the following statements to rank in descending order where 1 is most important.

- _____ Computer Software (14)
- _____ Financial Record Keeping (13)
- _____ Fish Care (11)
- _____ Fish Spawning (2)
- _____ Good Work Ethic (9)
- _____ Grace Under Pressure (17)
- _____ Maintenance (7)
- _____ Plant Care (12)
- _____ Punctuality (8)
- _____ Pest Management (3)
- _____ Water Quality (16)
- _____ Marketing/Advertising (18)

End of Block: Commercial Business Questions

Start of Block: Educator Questions

Please provide your years of teaching experience.

Enter appropriate value in the boxes below.

Please round your answer to the nearest 0.5 years.

Years of teaching experience (1)

Years of teaching with aquaponics (2)

What group of students do you work with? (check all that apply)

Pre-Kindergarten (1)

Kindergarten - 2nd grade (2)

3rd - 5th grade (3)

6th - 8th grade (4)

9th - 12th grade (5)

Vocational/ Agriculture (6)

Junior College (7)

4-yr College (8)

Graduate Students (9)

Adults (10)

Cumulatively, approximately how many students have you taught using aquaponics as a teaching tool?

How many of your students have continued with aquaponics after leaving your class?

Please enter the number of individuals in the fields below:

College/University : _____ (1)
 Home Use/Hobby : _____ (7)
 Aquaponic Technicians : _____ (5)
 Business Owners/Farmers : _____ (4)
 Other (please specify) : _____ (6)
 Total : _____

Please rate the **availability of teaching materials** related to:

	Poor (1)	Below Average (2)	Average (3)	Above Average (4)	Excellent (5)
System Design (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Construction (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Maintenance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish Health/Disease (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pest/Disease/Nutrient Deficiencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Record Keeping (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Food Products (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate the quality of materials currently available to teach:

	Poor (1)	Below Average (2)	Average (3)	Above Average (4)	Excellent (5)
System Design (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Construction (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Maintenance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish Health/Disease (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pest/Disease/Nutrient Deficiencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Record Keeping (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing Food Products (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following best represents your teaching responsibilities?
(check all that apply)

(1)

Agriculture Education (Agriculture, Horticulture, Aquaculture, Livestock, etc.)

Science (Biology, Chemistry, Physics, Physical Science, etc.) (2)

Vocational (Welding, Construction, Shop, etc.) (3)

Technology (Engineering, Computers Science, etc.) (4)

Math (Algebra, Geometry, Statistics, etc.) (5)

Other (please explain) (6)

How useful is aquaponics to teach these subjects?

	Not Useful (1)	Somewhat Useful (2)	Moderately Useful (3)	Very Useful (4)	Extremely Useful (5)
Agriculture (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biology (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemistry (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
English (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ecology (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Safety (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Math (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physics (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social Studies (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How useful is aquaponics for teaching these skills?

	Not useful (1)	Somewhat Useful (2)	Moderately Useful (3)	Very Useful (4)	Extremely Useful (5)
Collaborative Learning (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creative Problem Solving (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation Skills (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Responsibility (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please respond to the following statements by selecting the most appropriate option below:

	Strongly disagree (20)	Somewhat disagree (21)	Neither agree nor disagree (22)	Somewhat agree (23)	Strongly agree (24)
My <u>students</u> are academically engaged when I teach using aquaponics (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My <u>fellow teachers</u> are interested in aquaponics as a teaching tool (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My <u>administrator</u> is supportive of aquaponics in the classroom (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have all the <u>financial resources</u> I need to support the use of aquaponics in the classroom (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Educator Questions
