



Key Facts for Prospective Aquaponics Producers

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Aquaponics combines indoor culture of fish with the production of plants, most often vegetables or herbs. It is currently enjoying widespread popularity on a hobby-scale and as an educational tool to introduce students to agriculture. A significant number of people are attempting it on a larger scale as an agricultural enterprise. Economic information on the profitability of such systems is very limited.

Hobby or Business?

It is the opinion of the author that considerable caution should be exercised before making a significant investment in aquaponics production systems. Here are some reasons for caution:

- It is often incorrectly assumed that aquaponics systems are easy to operate. The concept that the plants use fish wastes, purifying the water before it returns to the fish, sounds ecological and easy. The reality is that it requires close daily attention and physical labor and is not without problems.
- Aquaponics system operators may not be able to take a vacation. The systems require close expert management and most customers will require a continuous supply of the vegetables and herbs being produced.
- “Prospective growers should plan for a steep learning curve as they learn to manage the complexities of several crop systems that are linked to each other and affect one another. Among the reported sources of loss in the first year of operation were high fish mortality, nutrient deficiencies during startup, selection of cultivars not well suited to aquaponics conditions, root rot and flooding of the facility due to problems controlling water levels.”

Marketing

It is wise to begin by planning how fish and plants will be sold or utilized.

- Grow only what you can eat, use or sell.
- History indicates it is unwise to rely on others to create your market. Broken promises will leave you stuck with nowhere to sell your perishable products.

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A large flood and drain grow bed. Credit: Allen Pattillo

Who will your buyers be? These customers will be your market. Will they be...

- Individual consumers who come to your farm?
- Individual consumers at farmers' markets?
- Restaurants?
- Produce wholesalers?

Define, explore and develop markets for both plant products and fish products.

- **Define:** Who do you think might be a good buyer?
- **Explore:** Learn all you can about their needs and what they pay for similar products. Observe and talk with such people.
- **Develop:** Communicate with your first customers to learn how to improve and how to reach similar buyers.

Consider the aquaponics grower who develops a market serving expensive restaurants. Freshness is important to chefs— they may require daily deliveries. Quality will be important – chefs will notice and complain about any variations in flavor or appearance. Service is essential – if the chef runs low due to unexpected demand, are you willing and able to make an extra delivery that day? If the chef is paying a very high price for the product, these things and more will likely be expected.

¹ All quoted material is from Southern Regional Aquaculture Center Publication No. 5006, Economics of Aquaponics, written by Dr. Carol Engle, Aquaculture Economist at the University of Arkansas at Pine Bluff.

Quality, price and service are three major things to consider as markets are developed. As a small- to moderate-size producer, you will not be able to compete by having low prices. Instead, work with the buyers to learn what they need or want in terms of quality and service. Do all of the above before expanding to a business-scale. Marketing is essential.

Will Aquaponics Be Profitable for Me?

“No clear conclusions can yet be reached as to the overall economic feasibility of aquaponics in the U.S.”

“The few studies developed to date show good potential for aquaponically produced vegetables to be profitable, with the fish portion possibly breaking even or incurring a net loss. Additional costs and risks associated with these complex systems must be analyzed carefully before investing in aquaponics.”

“Studies showed that greater profitability of aquaponics systems tend to be those located in areas such as the Virgin Islands and Hawaii, where fresh produce is very expensive. For an aquaponics farm to be profitable, it is imperative that a market willing to pay a premium price be found.”



Deepwater culture using a floating raft system. Credit: Allan Pattillo

How Much Work is Needed?

Intensive agriculture requires much effort. Marketing and production require considerable exertion. If you are looking for something easy, aquaponics may not be for you.

“Aquaponics systems are complex because of their multiple components and requirements. Disease prevention, water level control, and preventing rodents and other problems require inspection and care of the system throughout the day, seven days a week. Harvesting and packing vegetables are also quite labor intensive.”

Is Aquaponics Good for the Environment?

It is often asserted that aquaponics uses less land and water than other forms of agriculture, so is more environmentally friendly. While true in some respects, this overlooks the origin of the ingredients of fish feed. Fish feeds are made largely from corn, soybeans and other agricultural products grown in open fields. Fish feed also includes fish meal from menhaden and other wild-caught marine fishes.

Are Aquaponics Products Healthier than other Agricultural Products?

If you believe so, you should be able to explain why, in order to make your products more appealing to buyers.

“(Consumers sometimes have)...concerns about bacterial counts in the water, whether there was adequate testing and monitoring of bacterial counts, and whether bacteria from the fish production unit would get into vegetables. Aquaponics growers must be aware of these concerns and ensure the vegetables and fish supplied are free from harmful substances.”

Relevant Fact Sheets

NREM 9207, Recirculating Aquaculture Systems – Questions to Ask Before You Invest

SRAC 454, Recirculating Aquaculture Tank Production Systems : Aquaponics - Integrating Fish and Plant Culture

SRAC 5006, Economics of Aquaponics

SRAC 5007, Principles of Small-Scale Aquaponics

NCRAC TBS 0123, An Overview of Aquaponic Systems: Hydroponic Components

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