"Farm Together Now: A portrait of people, places and ideas for a new food movement" was a book published by Chronicle Books in late 2010 featuring interviews and photo essays about 20 farms across the United States. The book was a collaboration between Amy Franceschini & Daniel Tucker, with a foreword by Mark Bittman, Photography by Anne Hamersky & Illustrations by Corinne Matesich, Design by Brian Scott. see farmtogethernow.org

Chapter 9

AquaRanch

Flanagan, Illinois

Organizing body: 1 boss, 2 full-time staff, and 1–3 part-time staff

Scale: twelve 1,200-gallon tanks and a 52" by 240" greenhouse

Type: for profit

Currently producing: tilapia, lettuce, Genovese basil, cinnamon basil, red basil, lemon basil, chard, spearmint, tomatoes, and jalapeño, cayenne, Anaheim, and bell peppers

In operation: since 1985

Iconic plant/animal: tilapia

Website: www.aquaranch.com

Myles Harston is an inventor. After spending years working in commercial plastics used in the agricultural industry, in the mid-1980s he began to experiment with aquaculture (fish farming). He discovered the work of Dr. James Rakocy, at the University of the Virgin Islands, who was focusing on developing new approaches to recirculating water systems that would combine raising fish with hydroponics (growing plants without soil, using only water and nutrients). The result is aquaponics. The fish excrete waste into the water, which is converted by bacteria into

nitrates. The plants grow as they consume the nitrates from the water.

These systems can grow many varieties of plants, but trellised tomatoes and leafy vegetables work best on Harston's system. There is an economic advantage to having the fish and plant combination: The sale of either can subsidize losses for the other. In Harston's case, it is his herb crops, and his wife's famous basil vinaigrette salad dressing—made with basil grown in the fish-water aquaponics systems—which sell the best.

How did you get into fish?

Myles Harston, founder: As a kid I always had aquariums around the house. My mother used to take the fish water and water her plants. That fish water was good for plants and that led me to aquaponics.

Were you involved in other kinds of agriculture before aquaculture?

I was involved in making plastics for the agriculture industry, making grain storage. And I still do that, make equipment for the aquaculture industry. Plastics and fish go well together. The right kind of plastics are not hazardous to fish or people, and they don't deteriorate. So I make these tanks and filtration systems from scratch. I get the metals and weld them myself. The stuff I make is generally better than the high-tech stuff because it uses no energy to run. But it does the job.

When I first started working in the aquaculture industry in ’85, I went around to a lot of different universities and started asking questions. It was amazing that I could ask the same question about indoor recirculating systems of six different [professors], and I could get six totally different answers. That left me with a lot of frustration. There were a lot of people with Ph.Ds but without any real-world experience.

Do you think not having a blueprint left you room for experimentation?

Yes, it became an advantage. The clarifier I first developed worked really well. I described what I had done to some professors—and they said there was no way it would work, since it didn’t use electricity. I finally had a guy come out and look at it. He still said it was impossible. He silently watched while and I turned the valves on and off. Then he said, “Well it obviously works, though I can’t explain how it works.” Since then, everyone that has used our system says it’s the most efficient system—especially for the price.

How does the recirculating system work?

The water sits in tanks. Then it moves to the clarifier, which separates out the particulates. The water moves from that unit to the ends of the grow beds. Then the water goes through the grow beds. There are about ten inches of water in the grow beds. There are floats on top of the grow beds, and plants are planted in holes in these floats. The plant roots are able to reach down into the water and get all the nutrients they need. The plants create a high amount of surface area, which is needed for beneficial bacteria. That helps to break down the ammonia so it’s not toxic to the fish. The roots take up nitrogen from the water and turn it into less toxic nitrates. Then

water goes around to a tank, is pumped into a biofilter, and then by gravity it is sent back into the fish tanks. The fish are grown in round tanks so that current can be maintained to stimulate the fish to swim against the current. This swimming activity creates a firm texture to the fish resembling that of fish in the wild.

How do you deal with waste?

In terms of the water, most of the fish waste stream is utilized by plants. In the summertime we are able to use it outside in compost. We don't have that capacity during the winter yet. Eventually we would like to have a greenhouse that could be just for the heavier water. We have a small sewer system in our community, and [our waste] actually helps that system because we have the chlorine removed. We also have a high microbial life, which stimulates the city sewers, which is a good thing. We prefer not to send it that direction but sometimes we have to.

We only lose about 1 percent of our total water per month, which is not very much. Especially when you consider that most recirculating aqua systems loose 20–25 percent of their water every day.

What's the scale of the operation?

About 30 percent of our business is fish, the other 70 percent is divided between produce and value-added products. We have the ability to produce about five hundred pounds of fish every two weeks.

In policy and activist circles, people talk a lot about "food miles" to measure the distance that your food travels. How does this relate to your work?

Western Illinois University says that the average distance that food travels to reach the consumer's plate in our state is 1,500 miles. That's because we get a lot of food from California and from Mexico. And that means whatever we do right here saves a lot of energy. It means we will have better quality. And a lot of food that is imported is poorly inspected or checked, so that's a concern as well.

Aquaponics makes great sense in an urban area, because you can pretty much set it up anywhere. I would be interested in being a part of a committee to try to interject what is practical and what's not, what's feasible and what's not. But I'm not a politician. I'm a country bumpkin and I would like to keep it that way.

My farm is only a greenhouse. We only have a little bit of acreage around it. What I do could be duplicated in the city, as long as we have an abandoned building and an empty parking lot. It can be done very efficiently.

I think that we can eventually supply a huge portion of the food needs for a community in a city like Chicago. Chicago is one of the largest inland consumers of fish in the nation. Yet most of the fish we consume around here comes outside not only our state borders but our borders, period. That, to me, can be resolved right here.

Where do you want to see things in five years?

I would very much like to see communities be able to produce their own food locally. I would like to see people look more at the quality than the cheap price. People often go to the big-box stores to get food. When you buy cheap food with a lot of additives in it, you are simply not as healthy as when you buy food that is natural. There would be fewer people going to the emergency room, less reliance on pharmaceutical companies for drugs. People live longer these days but their quality of life has deteriorated.