Interview with Myles Harston
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Interviewer: Mark DePue

DePue: Today is September 12, 2008. My name is Mark DePue, I'm the director of oral history at the Abraham Lincoln Presidential Library, and I'm here today—thrilled to be here—with Myles Harston. Myles, how are you today?

Harston: Good. Thanks, I appreciate it.

DePue: We are in Flanagan, Illinois, and we are at your location, which is known as AquaRanch. Myles, want you to tell us very quickly what the background is, and then we'll get into the formal part of the interview.

Harston: AquaRanch is a facility that grows fish, naturally, without the use of chemicals and hormones, and then we also grow produce off the fish water. And we're organic certified on the fish—or excuse me, not on the fish, but on the produce. We feed the fish, the fish feed the plants, the plants clean up the water for the fish.

DePue: And so what we're looking behind you here, over your shoulder, is some of that produce?

Harston: That's some of the produce. They're located in the grow beds, and there's about ten inches of water underneath each one of these floats.

DePue: And we're going to get into that in much more detail later on in the interview. So let's start at the beginning and hear you explain when and where you were born, a little bit about growing up.

Harston: Well, I was born in Denver, Colorado. My parents moved around a bit. They moved to Butte, Montana. I don't remember either one of them. But then we moved to Utah.

DePue: What was the birthday, though?

Harston: We...

DePue: Your birthday.

Harston: My birthday? April 29, ‘52.

DePue: Okay. So you moved around, you said?

Harston: We moved around a little bit. Then we moved to Utah when I was about two, and at that point, my father embarked with some horses, which I enjoyed. I also began to become an aquarium enthusiast as a child. And in the Utah Valley area, those are two things that took up my childhood, were horses and fish.

DePue: What was your father’s profession?

Harston: My father was a medical doctor that specialized in psychiatry. And what he would do is take charge of community mental health centers, and that’s one of the reasons he moved to various locations.

DePue: So he was a psychiatrist who also enjoyed horses.

Harston: Yes.

DePue: Well, that’s a curious mixture, but maybe he didn’t think so.

Harston: Well, it was kind of a release for him. And he actually grew up with horses, loved horses, did farm work with horses, and had never really wanted to get away from them. So.

DePue: Did he grow up on the farm?

Harston: Yes.

DePue: Did he grow up in the Colorado area?

Harston: He grew up in Wyoming—northern Wyoming, on a farm, ranch, in northern Wyoming. They grew sugar beets, and they grew sheep and cattle.

DePue: What was your father’s name?

Harston: Marlow Harston.

DePue: First name again?

Harston: Marlow.

DePue: Okay. And a little bit about your mother?

Harston: My mother was actually born in Canada, and when she was a teenager, she moved with her family to Utah, and then eventually—after high school—she moved to Chicago. And she went to work at the first Montgomery Ward in downtown Chicago. And that's actually where my mother and father met, was that my dad went to medical school at Northwestern University.

DePue: Okay. What was your mother's maiden name?

Harston: Her maiden name was Henson. She was Mabel Henson.

DePue: Mabel Henson. Okay. And sounds like most of your formative years were spent growing up in Utah.

Harston: Well, when I was fifteen, my dad took a job in Kentucky, and so then we picked up and moved to Kentucky. During those years, I actually again enjoyed the horses and worked a lot with the horses, but I also managed an aquarium store while I was there.

DePue: In both locations, then, in Utah and in Kentucky, were you actually living on a small ranch with your parents?

Harston: In Utah, we had property. We weren't living on the property where the horses were; it was another location. But in Kentucky, we had property where we had the horses right there.

DePue: But what you've described so far suggests that, hey, there were some chores that went along with growing up.

Harston: Well, always. Always. We always had chores with the horses, and of course, I enjoyed cleaning aquariums and working with the aquariums.

DePue: What kind of chores did you have with the horses?

Harston: Oh, we had to feed them and water them, and in the West, of course, water's a big thing. It's scarce, and so you've got to make sure there's water. And we had to hay them. And of course, we did a lot of riding in the mountains of the West.

DePue: To exercise them, or because that was just plain old fun?

Harston: It was just fun. We just enjoyed it.

DePue: And went to public schools in Utah?

Harston: Yes. And then I went to Kentucky, and I went to high school in Kentucky.

DePue: Okay. Tell us a little bit about the religious background of the family.

Harston: We are members of the Church of Jesus Christ of Latter-day Saints. We are devout members. We work hard to follow our Christian values. I did go on a mission for our church when I was eighteen—nineteen, I'm sorry.

DePue: And I want to get into that just a little bit later, but spend a little bit more time on your childhood. Brothers and sisters?

Harston: I have one brother who lives here in Illinois, and I have four sisters.

DePue: Anything especially memorable to you and that you cherish about those years growing up in Utah and Kentucky?

Harston: Oh, probably the time I spent with my brother and I riding horses. We spent a lot of times riding horses.

DePue: When you said you rode into the mountains, were you hunting or just enjoying the riding?

Harston: Just riding. Just enjoying the riding. We did hunt, but we never seemed to hunt with our horses. We separated them. And we spent most of the time just riding our horses. And we had a lot of other friends that we got involved in the horses as well, and so it was a lot of fun.

DePue: So it was a good deal. It was popular to go out and spend some time with the family and ride the horses in the country, I would think.

Harston: Sure, absolutely.

DePue: Okay. Any other extracurricular activities?

Harston: That's...

DePue: Tell me more about the aquariums.

Harston: The aquariums? We had aquariums all over the house. My mother and I enjoyed the aquariums together. In fact, that's part of what stimulated what you see behind me. As my mother would feed or water her plants in the house, she would take water from my aquariums, and that's what she would feed the plants with water. And they always seemed to just thrive so well, and it was just always something that stood in the back of my mind for years, is that it just made sense that if aquarium water is high in nutrients, it ought to be good for plants.

DePue: Was that her thought? That's why she was using that water?

Harston: Well, that was probably part of her thought. Another part of her thought was that we already had the chlorine out of the water, and without having chlorine in water, it's just better for plants as well.

DePue: Okay. And you like the fish side of it, but you also like the working with the plants in with the aquariums?

Harston: Well, yeah. I didn't really get that involved with the plants at an early age. My mother did, but that was something that stayed at the back of my mind really until after—I didn't get that started until after we started the aquaculture on a commercial scale.

DePue: In high school then—this was maybe a year or so in Utah, but mostly in Kentucky—what were your thoughts about what you wanted to do with your life afterwards?

Harston: Oh, I guess I wanted to be a horse trainer at that point and have aquariums as my hobby. So that was really my thought.

DePue: And you graduated in what year from high school?

Harston: Graduated in '70 from a little school at the time called Lone Oak High School.

DePue: And where from there?

Harston: I actually went to community college for a year, and then from there, I went on a mission for our church, and I went to the Philippines for two years.

DePue: Two year?

Harston: Right.

DePue: I thought most missions were one-year missions.

Harston: Most of them are two years. Yeah.

DePue: Okay. Well, I'd like to have you tell me a little bit about that experience. First of all, why the Philippines?

Harston: Well, the way our church works is they determine where they need us. And so when I first got my assignment to go to the Philippines, I wasn't even sure where it was. So it was kind of fun to start doing research on the Philippines. And after seeing some of the things that went on in the Philippines and the aftermath of World War II that still hung on even in the seventies, it kind of made me a history buff. It was quite fascinating to talk with some of the people who had been

involved in World War II and some of the things that had happened there in the Philippines.

DePue: Did you get some language training before you went over?

Harston: No, I didn't. I did pick up quite a bit of Tagalog and was nearly fluent by the time I left, although I'd have to say I'm pretty rusty now. It's been a while.

DePue: So the areas of the Philippines that you were working in were where?

Harston: I had an opportunity to travel throughout most of the Philippines. I spent time in Manila, Santa Cruz, Laguna. I was down as far as Cebu. I was on Leyte, where MacArthur made his famous return. Then I was able to go on to Bacolod and—well, I was around different places in the Visayas. Then I spent a little more time up in northern Philippines, on Luzon, as far north as Laoag and in the mountains of Baguio.

DePue: Well that gives us a flavor, I guess, of what missionaries do. You're obviously not working in just one location. But explain your mission, if you will—what it is exactly that you're supposed to be doing.

Harston: Well, we proselyte. We try to teach people the importance of Jesus Christ and the Scriptures. And that's primarily what we do. We also work with health missionaries, trying to make sure that we have people learn about hygiene and so forth. So those were parts of some of the things that we did.

DePue: Well our understanding as Americans is it's pretty much door-to-door kind of an exercise.

Harston: It is. It's door-to-door. The Filipinos, I found to be a very hospitable people, just a very wonderful people. In fact, I only had one door slammed in my face, and that was by an American. (laughter) So that was interesting. So most of the Filipinos, they may not want to talk to you, but they'll be hospitable.

DePue: Were they generally receptive, or did they hear you out in what you were trying to explain?

Harston: Oh, many of them did. Sure, yeah.

DePue: And how successful do you think you were?

Harston: Well, you know, success can be, I guess, weighed a lot of different ways. I feel like I had a successful mission. How do you weigh it? Well, we made a lot of friends, we brought a lot of people at least to a knowledge of the importance of Jesus Christ and the importance of living a standard of life that would be following the teachings of Christ.

DePue: Were the most of the people you were working with and proselytizing to Christians?

Harston: Many of them were. Many of them were already Christian, but probably the biggest majority of them really didn't live their religion very closely or didn't follow their religion very closely.

DePue: And I know there's certain portions of the Philippines that's also Muslim.

Harston: Yes, that's southern Philippines, down in Mindanao area.

DePue: And did you do any mission work in those neighborhoods?

Harston: I did not get down to the Mindanao, although there were several friends that did.

DePue: Okay, so there were people that were working with Muslim communities?

Harston: Right.

DePue: Okay. What struck you most about your time there?

Harston: I would say the friendliness of the people. I would say how happy they were, in many respects, without necessarily having huge amounts of money. Money isn't necessarily the key to happiness. I was struck by the fact that they were very respectful of their elders—and sometimes that doesn't happen here in America, and that was certainly something we can learn from.

DePue: Are there any especially memorable experiences you had during those two years?

Harston: Oh, that goes on. Just probably the friends that I developed. And some of the areas, the province areas, in Cebu, some of the landscapes were just incredibly beautiful.

DePue: Would you say that experience—those two years—changed you?

Harston: I would say it helped me in many ways to firm up my own beliefs even more.

DePue: Okay. And you said that was 1971-72?

Harston: It actually started in January of '72 and went through the end of December of '74, so it was almost an entire—two full years. Just missed it by a couple weeks. I

DePue: Okay, what happens after that?

Harston: Well, I came home and got involved in the horse industry, and...

DePue: Home to Kentucky?

Harston: Actually, I was... That's a good question. When I was on my mission in the Philippines, my parents moved to Illinois. And my dad took other responsibilities in Illinois, so I actually came home to not my home; I came home to the state of Illinois. And we had expanded the horse business while I was gone, and we got quite involved in that.

DePue: Was your father still doing psychiatry as well?

Harston: Yes. Oh, yes.

DePue: Where exactly was the farm?

Harston: Well, the original one in Illinois was in Champaign. Actually on South Prospect in Champaign.

DePue: Wow.

Harston: That's now all subdivision.

DePue: But very close to the University of Illinois.

Harston: Yeah, it was very close.

DePue: Is that where you went to school?

Harston: No, I went to Parkland for a while. And then I was in Champaign for just a couple years, and then I went out to BYU in Provo, Utah.

DePue: Your major?

Harston: I majored in animal science, and as a matter of fact, probably the animal science has helped to some degree with the fish, but not really very much. And so the animal science—I really had more concern for horses at that time. So I came from BYU—I met my wife out there. She was actually from Boston. And we came back, and we got highly involved in the horses from that point.

DePue: What's your wife's name?

Harston: My wife's name is Nancy.

DePue: And her maiden name?

Harston: Forrest.

DePue: Nancy Forrest.

Harston: Mm-hmm.

DePue: Obviously horses was something you loved.

Harston: Still do.

DePue: Were the prospects good?

Harston: Still do, yeah. The prospects at that time were very good. We were into Arabian horses, and Arabian horses at that time were increasing in value. Even the *Wall Street Journal* thought they were one of the best investments you could invest in in the late seventies and the early eighties. And so we became quite involved in it.

DePue: What made Arabian horses such a good investment?

Harston: Probably there was some mystique to it. Limited supply earlier on, and there was a lot of people with big money that got involved. It became a trend, I guess.

DePue: But when we had talked earlier, you mentioned that something happened in terms of American tax law that changed the industry.

Harston: Well, it did. And the tax law changed so that some of the tax advantages weren't there for breeding horses, and so most of the people who were heavily involved in breeding horses, unless they had huge resources, ended up having to sell their businesses.

DePue: Can you talk a little more specifically about how the tax law changed and the impact?

Harston: Well, it had to do with depreciation. There was just less depreciation. They wanted to have investors have more personal involvement with horses rather than just have it be an off-site-type investment.

DePue: Okay, I understand depreciation of equipment and facilities; I'm trying to wrap my brain around depreciation of a horse.

Harston: Well, breeding animals can be depreciated as well. They have a useful life, just like a machine would have a useful life. And actually, the way the laws were written at that time, if you bought a horse that was, say, a teenager—twelve, or a thirteen- or fourteen-year-old horse, you could depreciate an entire cost in a very, very short period of time. And the way some of them were doing it is they would finance the horse over maybe ten years, but they would depreciate over three years, so they were actually making money from the government over the first

couple of years. And so those were some of the things that were taken from the horse industry—and probably rightfully so.

DePue: So when you came back out of college, you had an animal science degree, you came back to help your father, breeding and raising these horses?

Harston: Right. We were breeding and raising and training Arabian horses.

DePue: What scale? How many horses were you...?

Harston: We were up to over a hundred horses. We had stallions who were nationally recognized. We eventually moved to a place in McLean County—northern McLean County—and had our farm there. And when the—I call it the crash, because really, it happened within just a matter of months after the tax laws were actually talked about. In fact, what's interesting is the tax laws themselves hadn't even changed yet, but Congress said, This is what we're going to do. And people weren't going to buy horses—Arabian horses—for investment any longer. In fact, what happened is many of these horses that had been sold in early '84, by the end of '84 weren't worth 10 percent of what they had originally been paid for.

DePue: Okay, I'm curious now. How much was a good stallion sold for before the crash, and then how much afterwards?

Harston: Well, probably... Some of the really good stallions were often selling well into the six figures. Some of them were even over a million dollars.

DePue: Holy cow.

Harston: And after the crash, people were stuck with horses they couldn't get fifty thousand for sometimes, and where they had spent well over two or three hundred thousand for them originally. Some of the differentials were even greater than that. One horse in the early part of '84 had sold for over a million dollars at an auction in Kentucky, and he couldn't even get one hundred thousand for him after...

DePue: And this was driven primarily because it was a good investment more than it was the status and the glamour?

Harston: The original thing was it was a good investment as far as taxes were concerned. There was a lot of appreciation with Arabian horses at that time. And partly, I would say, was a false market because of the enthusiasm and the faddishness of the whole industry at the time.

DePue: But the crash happens. What year was that?

Harston: That was '84.

DePue: And what happens to the Harston family then?

Harston: Well, we stuck around for a while, but we eventually... You know, trying to see what was going to happen with the horse industry, I took a job with a company called Agri-Covers in ‘85. And Agri-Covers was a company that made plastic covers for grain bins. And...

DePue: Where was the company located?

Harston: That was located in Gridley, just south of Flanagan by ten miles. And so we started working with grain covers. We had the ability to work with plastics. And as we saw the grain... The government, at that time, was also—government can really change things. But the government had been subsidizing grain storage, and then that changed, so we were in a position where we were... While we had made probably thirty or forty grain bunkers and placed them throughout the United States, all the way from the state of Washington. There were a number of them put in Washington, a number of them put in Colorado, several here in Illinois. We put some in Puerto Rico, in Haiti, and some other places like that. But as that industry changed because of the fact that the grain storage was not being subsidized, we started looking for other areas to take our plastics technology. And with my fish background... I actually met an undergraduate student named Mike Frinsko at Illinois State.

DePue: How do you spell his last name?

Harston: F-r-i-n-s-k-o. And Mike Frinsko was actually the one who started the Illinois State fish breeding program, and he started it as an undergrad. Started it just in one of the back hog buildings, using brick—cinderblock brick—as the original tanks.

DePue: I wanted to go back and ask some questions about the Agri-Covers business. I got a lot of questions about that. First, I’m trying to visualize this. You talked about grain bunkers. I know what a grain silo is; I see these huge piles of grain sitting along the side of the road sometimes now. Exactly what were these covers; what’s a grain bunker?

Harston: Sure. A grain bunker... What we did—and you will see these from time to time around yet—our technology is we used concrete sides, and we’d go up about four feet. And then we’d fill that area full of grain until we had a cone-type shape. Corn gets a certain slope as it’s piled in there, and then after we pile as much in there as we can, then we would use a heavy-duty PVC-type cover, and then we would put over the top of that, and then we would seal it off. And our original technology, we used CO_2 to fill in that grain to kill the pests and to preserve the grain. Now we did find that in the humid areas like in Illinois, we needed to have air blowing on it—and we found out the hard way a few times. We needed to have air blowing or sucking on that at all times. In the West, we were able to do

that successfully, in the more arid areas, but in the humid areas, we had to keep the air going.

DePue: How long could you store grain that way?

Harston: Well, in the West, we were able to store grain for several years. Never had a problem. And in the more humid areas, as long as we had the air blowing, we were fine, and we could store it for several years. Most the time, for most grain companies, it was something they would take and put all their overflow grain in. They would put into that; they would take out of that first as they were moving into their other markets.

DePue: Well, you mentioned pests. I would think that's an incredible challenge, trying to keep mice and rats and other kinds of animals and insects out of it.

Harston: We would put an asphalt floor down first, and then we would cover the area where the concrete walls were with the plastic, and then put the grain on top of that, and then as long as it was swept up on the outside, it was clean, and it was very neat.

DePue: Why was the government subsidizing this?

Harston: I don't know. (laughter) There was a lot of grain at the time, apparently, and so the grain... I don't know all the reasons why the government...

DePue: Well, I'm sorry to put you on the spot like that. Do you know why they stopped subsidizing it?

Harston: (laughter) I can't answer that, either.

DePue: Okay, okay. But they stopped subsidizing it?

Harston: They did stop subsidizing the grain, right. And so we were trying to work actually more through looking at our out-of-the-country sales of our grain bunkers, and that's why we ended up going to places like Haiti. And we were looking at some of the other places, like some of the former Soviet Union countries that were very interested in some of our technology.

DePue: But after the subsidies stopped, it sounds like the Agri-Covers business wasn't near as lucrative anymore.

Harston: No, it wasn't, and that's why we really started working on the aquaculture.

DePue : Now, you've expressed almost all of this as "we." Was it you and others? Was it your family?

Harston: Well, I did not own Agri-Covers at first. It was owned by a man from Australia, by the name of Wandell Root. And he started Agri-Covers, and then we—I say "we"—I mean, he and I worked together on it. So yeah, we started working to promote the aquaculture because it looked to be that that was a good potential market.

DePue: And this is where your friend at Illinois State came into the picture.

Harston: Right, right.

DePue: Well, talk a little bit more about what he was working on.

Harston: He was working on tilapia, and that was my first introduction to tilapia as a fish. He was just working on the ability to grow fish indoors. In our northern climates, we have to do it indoors. And tilapia had a lot of advantages: it grows fast, it tastes good, it endures sometimes tough water conditions, and they spawn on a regular basis so they're easy to keep your supply going into your aquaculture setup regularly. We actually harvest here every two weeks. We harvest our eggs—collect eggs—every two weeks, and so we can harvest on that same schedule.

DePue: Well, you're wearing a shirt with "AquaRanch" on there, and I assume that's a tilapia right underneath the logo.

Harston: It is, yeah.

DePue: Native of where?

Harston: It's originally native to Africa and Israel. It's sometimes called the Jesus fish; it's sometimes called St. Peter's fish. It is a tropical fish, and so it does not do well when it freezes. So it's...

DePue: Strictly a freshwater fish?

Harston: Yes. It can thrive in brackish water, but it is not a saltwater fish.

DePue: And what size are they when you harvest them?

Harston: We try to average about a pound and a half. We sometimes will go higher than that. The batch we have in there to be harvested now averages almost 1.9 pounds. It's ready to go.

DePue: But why is it that Dr. Frinsko—I think I'm pronouncing his name right, or hope I am.

Harston: Mike Frinsko.

DePue: Why was he so intrigued by this process, and in tilapia especially?

Harston: Well, he saw the same thing early that many of us saw, and in fact, really, the tilapia was a tremendous fish for indoor aquaculture. And now it's been proven here some twenty-some-odd years later that tilapia is undoubtedly the ideal fish for indoor aquaculture.

DePue: What was your relationship with Mike?

Harston: Mike, we were friends, and he was a... we got a lot of advice from him, to start off with. I mean, he was a good resource. And he was a very giving person.

DePue: When you say you got of advice from him when you started, what was it that... You were in Agri-Covers. What happened then? Did you move to this new industry yourself?

Harston: Well, we had to start figuring out how to make systems—aquaculture systems. I had no idea how to make a large-scale one. I mean, I could deal with aquariums, but to make it an indoor aqua system... So we started getting some ideas from him, and we also checked around with other universities. And it was interesting, when we first started checking around, we could ask the same question to six universities and probably get six totally different answers. It was so off the wall how much information there wasn't out there in the middle eighties. And that's changed a lot in that time; there's a lot more available information now. So we actually started doing a lot of research on filtration. And the nice thing about it is because we had the ability to make things with plastics, if we had an idea, we could make it, we could put it into use, and we could find out if it worked or if it didn't work within weeks. And so some of our technology, we actually had quite an accelerated rate of finding out if things worked or not.

DePue: The entrepreneurial spirit.

Harston: Yeah. And sometimes it's forced by, We gotta get something sold! (laughter)

DePue: Yeah. And I guess that's what I keep coming back to here. You've got this business, this partnership in Agri-Covers. It's not doing great because of the change in subsidy, tax law, things like that. Then what inspired you to go this other direction?

Harston: You mean with the...

DePue: Aquaponics.

Harston: With the aquaponics. Well, I started doing some research... Let me go back and just... Agri-Covers was eventually purchased by Gary Ringger from Gridley. He bought the building we were in, and I continued to function under Ringer Foods,

the aquaculture division, and continued to sell liners, continued to sell equipment, continued to work on research and development. And in '92, I started actually working on aquaponics. And it originally started when a friend had brought a philodendron out and was going to throw it away. And I looked at it, and it wasn't quite dead. And I thought, I wonder, and I just kept thinking, I wonder.

So I grabbed that out of the garbage—it was on a hanging basket—and I took it to our fish room. And I hung it up in the fish room, and I started just putting fish water in it and letting it drip down back to the fish. And within probably six weeks, that philodendron just about took the fish house over. It just came back. And people would come back and take tours of the fish and see how we were growing it, and they'd see that philodendron, and they thought it was the most wonderful philodendron, so they wanted to take pickings off it because they thought it was something special. (laughter) And it wasn't that it was special genetically, it was the nutrients were just there. And so we started working on a number of different designs to see what we could do and how we could grow plants more efficiently.

DePue: And that's where the relationship with Mike and talking to the other people who were in that side of it?

Harston: Well, at that point, Mike had gotten a job in North Carolina, and he's actually an extension adviser out there. At that point, we just worked with different people from—we worked with SIU—Dan Selock at SIU. We worked with Illinois State. There was Pat Foley at Illinois State and Denny Engel at Illinois State, and worked with them and exchanged ideas. And we made equipment for Illinois State as well as exchanged ideas, and sometimes I got my fish from them. So that's kind of where that went.

DePue: Explain the difference between hydroponics and aquaponics.

Harston: That's a really good question. Hydroponics is good technology, but it uses a sterile water solution and chemicals to feed the plants. In aquaponics, we cannot have a sterile solution. In aquaponics, we're using the fish water. And realize, with fish, you've got to have a colony of beneficial bacteria that support the fish in breaking down the ammonia to nitrites and then to nitrates. And there's a colony of bacteria that's there. That's very similar, and in many cases, the exact same bacteria that functions in the soil, only it's a lot faster in the water. And so when we got to have that...

Oh, incidentally, it breaks the ammonia to nitrite to nitrate. Nitrate is one of the most available form of nitrogen to plants. And when we have farmers literally putting on nitrogen, ammonia, and hydrous ammonia at huge rates—literally tons and tons and tons per farm—we deal with parts per million. We have our water here that's about two hundred parts per million. So if you have nitrogen in a very available form, like it is in the aquaculture water, you don't need much of it. And that's really the whole basis of this is that the nutrients are very available. We do

have high microbial content, so the design has to be different than hydroponics. It can't be the same design because with a bacteria colony, it clogs up the little tiny fine plumbing of a hydroponics unit. And so it does have to be a little bit different design.

DePue: And then tell me a little bit the differences between what you have with aquaponics and these huge fish ponds that they have in the south predominantly.

Harston: Well, the huge fish ponds—that's a good thing to clear up. That's really good. Because the huge fish ponds—most of them are called levee ponds, because they build the sides up, and they're anywhere from four to six, sometimes seven or eight feet deep—and the fish will live in their own excrement during their entire life. And they try to get some bioaction going the same as we do, but their excrement—that pond has to literally digest all of it. They have no way to efficiently get that excrement out. And what we do is we take and run the water from the fish to a filtration. It goes through a degasser, and then it passes through the roots of the plants, and the roots of the plants acts as a filter system for the fish water. And so that literally cleans up the water for the fish. So we don't have very much water that goes out into the environment. Very, very little. In the wintertime, we might have 1 percent per week.

On an indoor recirculating system, anywhere that could be in the Midwest, it might lose as much as 20 to 25 percent of their water every day. And that water—then the environment has to deal with that. And it's just basically like a sewer system, and that just dumped right into the environment. In some of the western areas, where they're doing trout and some of the other fish like that, they'll have water—they'll locate right on a stream. They'll bring the water off—they'll divert the water from the stream to their raceways, and they'll go from the raceways right back to the stream, and so it's just basically like a—I guess if you had it in a cattle lot, it would be like a feed lot being located on a stream. And so all that manure is then put right into the stream, and then that stream then has to deal with that. What we're doing is cleaning up the water and reusing it. And that's the big difference in aquaponics, is that we're aquaculture, we're hydroponics, but we're not putting a load on the environment. We are conserving the water, and this is a technology—because of the water conservation—this is a technology that can go in desert areas and use very minimal amounts of water in comparison to some other agriculture. We use probably about 2 percent of the water that other agriculture areas used.

DePue: Well, what you've described is a very symbiotic relationship between the plants and the animals in this respect. I guess the next question is, Do you have the plants to allow you to grow the fish, or do you have the fish to allow you to grow the plants?

Harston: Yes. (laughter) We can't really have the fish growing at the rate we have growing without the plants. They are literally part of our filtration system. But yet we're

able to grow good, healthy plants—and be organic-certified in the process—and the plants we grow, such as lettuce, basil, are two big ones we grow. We also grow tomatoes and peppers in here. What we're finding is that a hydroponic tomato, for most people, has kind of a little bit of a bland flavor versus a garden tomato. Most everybody will pick a garden tomato over a hydroponic tomato in terms of flavor. What we find is when we grow, with the high microbes in the water, inside, we have a garden taste to our tomatoes—a very sweet, nice taste. We found that out even from taking to farmers markets, the farmers market people will come back to us specifically for our tomatoes over the hydroponic tomatoes.

DePue: Let's talk about the market for both of the products you have then. What are the challenges with the tilapia? Who are your competitors, and where is the market?

Harston: Actually, our biggest competitors are really China, Asia—some of those areas offshore. They deal with low price, and they don't really... There's a lot of... In fact, I've got an article here that talks about some of the problems. In fact, I'd like to read it, just if...

DePue: Sure.

Harston: ...if I may.

DePue: Is that *New York Times* article?

Harston: *New York Times* article. And what's interesting is some of the conditions that they grow their fish under. This is Dr. Ming Hung Wong from professor of biology at the Hong Kong Baptist University. He says, "There are heavy metals, mercury, flame retardants, in fish samples we've tested." That's right in the flesh of the fish. He said, "We've got to stop the pollutants entering the food system." So they know it's there, and that's probably 90 percent of what's being eaten in the United States, in terms of tilapia, come from Asia. And he also indicates that more than half of the rivers in China are too polluted to serve as a source for drinking water. And he also admits that water is the biggest problem for China. Another article talks about the fact that the toxins right in the fish have sickened people in twenty-eight states. And I probably see some article about polluted fish entering the marketplace—probably at least twice a month, there's some kind of an article that hits somewhere in the United States.

DePue: But there's obviously some kind of a profit involved here with the Chinese.

Harston: Low price.

DePue: Is it because the scale of the operation?

Harston: Low price. They can bring it in. They have huge farms. The polluted conditions are very prevalent, and the tilapia seem to be able to survive in that. And they can sell their fillets for cheaper than what I can sell a whole fish for. Now, how's the labor going on that? Well, it certainly wouldn't be a fair wage. The polluted conditions—unfortunately, when we talk about the polluted conditions, too many of our public are looking at price, not quality. And so we really have to put quality up as our competitive edge, because we can't compete on price. So I mean, you can literally see the difference in the texture, in the color, and when you taste the fish, you can tell a big difference in the taste and flavor.

DePue: So from your perspective, the quality isn't just that the fish has contaminants in it that's coming from overseas, but that there's a better taste and a texture and a color as well?

Harston: Oh, absolutely. When you fry up our tilapia in the kitchen, it doesn't even smell like there's being fish cooked. You know, some of the other tilapia that come in from some of the other countries, when you fry it up, it smells fishy.

DePue: What is your market, then?

Harston: Our market is more the people who are concerned about the quality of food, who are willing to pay more for a high-quality food.

DePue: Organic foods?

Harston: Organic-type, natural food–type buyers.

DePue: And is your target area primarily the Chicago suburbs and Chicago itself?

Harston: That is one of our big targets, yes. And we're starting to educate more people downstate, and there's a lot more people that are starting. We're into some of the natural-type food stores in Peoria and in Bloomington. A farmers market in Bloomington—it's been kind of fun as we've introduced it there, because I can take forty or fifty pounds of fillets in little half-pound packages and in three hours, they're sold—three to four hours, they're gone. And people will come back with their little freezer cases, and they want more fish the next week.

DePue: So the market's there.

Harston: The market is there. It's an important market. But just from the standpoint of just literally quality. And unfortunately, there's too many people that will go to a big box store and look for cheap. And cheap is not necessarily good for you.

DePue: How many other places around the state, or in the country even, are practicing aquaponics like you've described it?

Harston: There's probably hundreds of small operations. When I say "small"... We would be probably the largest in the United States, as far as a commercial system. When I say "small," most of the ones that are out there would be like a 500-gallon tank, where we have twelve 1,200-gallon tanks and we're looking to add more.

DePue: But from what you've described, Myles, there's an incredible opportunity, potential for growth here.

Harston: Yeah, there is. There is a tremendous opportunity for growth. It does have to come through education. It has to come through the fact that we need to make sure that people know that it is a healthier thing. It's just like beef—beef coming from a feed lot, the omega sixes are very high; the omega threes are very low. But if you have grass-fed beef, the omega threes are very high—omega threes are the good ones—the omega sixes are very low. And so when you have beef that are injected with hormones, and they're injected with all kinds of growth stimulants, they have antibiotics in the feed, they have that kind of thing, it's not as healthy for you.

And that's the same with us. We don't do the hormonal manipulation. And there's a process that other breeders do—other people that are spawning the fish—where they do a hormonal sex reversal of the fish, and they feed methyl testosterone to the fish, and they change the females to male, and it helps them grow faster. There's growth hormones often injected, and then there's antibiotics put in the feed—there's a number of different things done, and that's then in our food supply. And what does that do? The problem is, many of these things being done really have never been tested on the long term, and things like cancer is never going to turn up on a short term. And so short-term tests for some of these things to really promote fast growth, a short-term test is not adequate.

DePue: I'm picking up on some of the missionary zeal, almost like you're back in the days of the Philippines, talking about this. (laughter) And you've sold me. So let's go back and talk about building this business, the business side of what you have here in this venture. When did you actually get to this location?

Harston: I actually made a deal with Gary Ringer in 2003 and bought the business—the division—from Gary and then started looking for the place.

DePue: The division—what do you mean by "the division"?

Harston: Well, we had the aquaculture division of Ringer Foods. And we were in Gridley. And so I started looking high and low for the right piece of property, for the right building, to build our equipment, to have our greenhouse. And it was something that I had just envisioned—a dream that I wanted to pursue. I was also training horses full time. But it is something that I wanted to pursue, and so I started to look for property. I found this property, made a deal, and in 2004, we started construction. The Morton building over here just was an empty shell, so we

sprayed insulation, we started doing the building, and that's where we do our spawning, in that building.

DePue: What was the Morton facility before?

Harston: It was just a storage building. They just had equipment stored in it.

DePue: And Morton was doing what with the building?

Harston: Oh, I'm sorry, Morton is the brand name. It was just a...

DePue: Oh, okay, a Morton building.

Harston: The Morton building. Yep, yep. And so it had been used as a seed corn company previous to that, but it was a good place for us to be able to do our equipment—build our liners, build our filtration systems.

DePue: You've got this brand-new idea, you go to bankers, I assume—you had to get financing someplace. Talk a little bit about that.

Harston: Well, that's certainly important. The president of Flanagan Bank was open to new ideas, and he's been very helpful all the way through. And yeah, we had to certainly have his cooperation. Certainly. We did have some of our loans through some of the Illinois programs, which has been important as well. Anyway, we started building the greenhouse here in 2004, and we finished it toward the end. We did all the construction ourselves.

DePue: You mean you were out here actually...?

Harston: We were actually digging holes, and my son-in-law and daughter—Rob Prickett and Katilyn, my daughter—was in charge of the construction, and they did a good job.

DePue: What's the prognosis in the future for you, you think?

Harston: Well, we are hoping to double the production here on this location. We're also looking at the possibility of some expansion. We have some folks interested in New Mexico—doing some expansion into New Mexico—as well as a larger expansion somewhere close. And we have not located a site for that, but we do want it to be somewhere close to the Flanagan area.

DePue: Okay. I guess I skipped over a discussion about the marketing of the produce that's behind us here.

Harston: Well, it's organic certified. We market at farmers markets and also again in Chicago. And the winter markets were good to us last year in Chicago. And we

also market it to Schnuck's in Bloomington and Normal. We market to, again, some of the natural food stores in some of the Bloomington and Peoria areas. And there are several stores in Chicago that also handle both the fish and the produce.

DePue: I would think the oriental markets in Chicago—which are substantial—would love the kind of produce you have here, both the fish and the plants.

Harston: Well, the oriental market wants the live fish. And we originally sold our fish to the oriental markets as a live fish, and then we went through the HACCP certification so that we're HACCP certified, and so we're now processing the fish ourselves, and so we can actually get more for a fish if we process them. It's actually a better deal for us.

DePue: Did you say HAFSA?

Harston: HACCP—that's the Hazard Analysis and hazard control by the federal government.

DePue: Okay. Which side of this business is the profit?

Harston: Well, I think they're both there. It comes from both sides. So which side? There's probably a little more in the plants.

DePue: Now, obviously an entrepreneur like yourself is always optimistic, but what do you foresee in terms of the future for your business, for aquaponics, and for the changing palate of the American public, perhaps?

Harston: Well, I foresee more people really looking at quality of their food. And you talked about the Asians earlier. It's interesting; the Asians will spend 30 to 40 percent of their annual income on food, where the rest of the Americans will only spend 10, 15 percent. I foresee people being willing to spend more money on their food for a better quality of food—food that hasn't been sprayed with pesticides, that hasn't been sprayed with herbicides, you know, that's more environmentally friendly. So that's what I really perceive, and I think that's going to drive the market.

DePue: Well, we're going to spend this afternoon walking around your facility and seeing every single step, aspect, of your business, from still working with the plastics and things like that through the whole fish side of the operation and into the greenhouse as well, and I'm really looking forward to that.

Harston: Great.

DePue: Do you have any final comments before we do that?

Harston: No, I just hope we enjoy it this afternoon. It'll be fun to show you kind of how we do things. We'll go all the way from planting seeds—we'll be taking the seeds of

the plants in the pots all the way to the eggs of the fish and to the hatching jar, so we hope we'll allow you to see all of that.

DePue: Let me ask you this one question then. From your college days in animal science, it seems like you've come quite a ways from there. Could you ever have imagined this is where you would be twenty or thirty years later?

Harston: (laughter) No, not at all. It's, yeah, quite a long ways from... You know, with animal science—it is interesting, and as I work with people to do aquaculture, I find that people who have somewhat of a animal husbandry background, I find it easier for them to do aquaponics, because of realizing that the fish have to be fed every day just like an animal has to be fed every day, and it's not something you can walk away [from] and be gone for two weeks and leave. You're married to the business; you're married to the fish. It is something that's high demand in terms of time.

DePue: It's almost like being a dairy farmer, then?

Harston: Exactly. Yep.

DePue: But it does seem to me that every step of your life, every experience you've had, you've managed to take advantage of and apply it to this business.

Harston: Well, yeah, I've tried to do that. Absolutely. Yep.

DePue: Okay, Myles, we'll look forward to this afternoon. Thank you very much.

Harston: Thank you.