

## OHIO SERIES - OHIO INTRODUCTION

**Peg:** Welcome to Ohio. I'm Dr. Peg McMahon in the Department of Horticulture and Crop Science at the The Ohio State University and I'm here to talk to you today about the floriculture industry in Ohio and a little bit of agriculture in general. Agriculture is a leading industry in Ohio. Although we have three large cities, agriculture still plays the major role in our economy and floriculture plays an important part of that role. We have approximately 600 growers in this state and we have approximately 600 acres under cover. If you do the math, that's about an acre per grower, although we have some smaller and some larger.

In Ohio we have four distinct seasons. We are in the fall season as you can tell right now and these seasons present a difficult challenge for our growers because most of them like to produce year round but they have to have facilities that can heat in the winter and deal with sub-zero temperatures and at the same time deal with temperatures in the summer that can get well over 100 degrees so this presents challenges in building greenhouses and then also in maintaining the temperatures and the climate in those greenhouses.

The greenhouses we'll be visiting today are Possum Run Greenhouses, located about an hour north of Columbus in the coldest valley in Ohio so they are particularly challenged with seasonal temperatures. They are not near anything. The only thing they are really near is one of the few ski slopes in Ohio. They do a retail/wholesale business so they have to have created a niche that draws people from far away and they do. They draw people from as far away as Cincinnati which is about probably a two, to two and half hour drive for their customers but as you will see they have found a way to handle both the climate and the distance from a large customer base very successfully.

## OHIO SERIES - POSSUM RUN GREENHOUSES INTRO

**Peg:** It's my pleasure this morning to introduce Justin Marotta, owner of Possum Run Greenhouses here in Bellville, Ohio. He's not right in Bellville. He's in the outer reaches of the city, in the coldest valley in Ohio.

**Justin:** Thanks Peg. Peg, the interesting thing is we're now providing the weather stations in both Cleveland and Columbus the weatherman for I think two or three of the televised commentators, weather on Possum Run. But we're really located between two ski resorts and part of it is that they located the ski resorts here because of the climate that's here so the climatologists knew exactly what they were doing and Justin and Lynn didn't know what they were doing. We were extremely naïve when we placed the greenhouse here, not knowing all those factors of weather but weather's been pretty good for us. I mean it's definitely cold. We've had 26 degrees already and it's still only the midpoint of October. But it sets up the greenhouse for insects and stuff like that so you can really define your IPM program that way.

**Peg:** And it's also very important that when you are locating a greenhouse that you check into the climatology in the region if you have that opportunity to do so.

**Justin:** And also the other thing is everyone talks about location, location. And again being naïve and coming here and not knowing that 50 percent of our business was going to be retail and the other 50 percent was essentially being wholesale, location would have been better served somewhere else. But we wouldn't have had the lay of the land based on the topography and also the infrastructure. The old barn we were able to use that and use that as a focal point so that in itself provides a lot but location still is a very good thing. Niche marketing is a little bit overblown I think as far as some of that goes even though we've probably succeeded somewhat based on niche marketing.

**Peg:** Can you tell us a little bit about the products you grow and how they're sold please?

**Justin:** In the last 25 years probably we've been a vegetative producer. We produce asexually or mechanically produce cuttings essentially and we focus on fuschias, that is our forte. We have over 240 some varieties and now we're working with another hundred and some different varieties. We're looking at those to add to our mix. But we do vegetative cuttings and that's 50 percent of our business and with

that we also have the seedlings of Spring Orion Spikes and we do vinca and verbenas and the like. We also work with seasonal potted crops. Right now in the greenhouses we have poinsettias and those are getting ready for this upcoming season and then we'll move right into spring with Easter and Mother's Day and the like with bedding etcetera and hanging baskets. So we have a nice blend. We're about 50/50 on our gross sales. We do about two million dollars, no, about two million cuttings is what I really want to say, as far as vegetative materials goes and our gross is fair. We do a pretty good job with that and we have an excellent staff which helps compliment all of that.

**Peg:** Could tell us how you got started in this business and a little of your background and the company's background?

**Justin:** Sure Peg. Essentially I grew up in this industry. My grandfather started his business back in the early 20s in Mentor, Ohio which is northeast of here. So I grew up in a family business watching my parents, my aunt and uncle, my grandparents all work closely together with staff and product and they were both a retail and wholesale florist so they were providing product to the Cleveland market and also providing product for their own retail flower shop. So seeing all those things growing up and being able to deliver flowers to families and welcome mothers on Mother's Day and say "Happy Mother's Day" and say "Happy Easter" and those kinds of things and delivering corsages really taught a young person a lot subconsciously you didn't realize that or knowingly that you didn't realize that but subconsciously it taught you a great deal about working with people and customers. So it became an endearing aspect of what we were doing but my parents sent me to school. I was the first of eight grandchildren to go on to college and they didn't want me to go back into that business because of the hard labor involved and the time that's involved of working with the public and the holidays. It was really very consuming. So I worked as a personnel director upon graduation from college. I have a degree in finance and management. I do not have a horticulture degree and so there's always seemingly a common thread to a lot of us that relates to family businesses and you grow up that way but personnel directing was again another important part of my life because it was with a great company called F & R Lazarus out of Columbus which historically has a great national name and family name so it lead a lot to my background too. So naively everybody has that altruistic value of being an entrepreneur or being an independent businessperson and so we saw this old dilapidated greenhouse out here on Possum Run Road. I shouldn't say 'we' I did and I was kind of taken by it so it felt like it was the thing to do. So at that time, like I said, I was 24 years old and very naïve, been out in the working aspect for about two and half years, married a young lady who was a home economist who I told that I was going to be a finance, investment-type person with the SEC and so she fell for all of that and we got married and here we ended up buying this place shortly after we bought our first home. And actually when my parents saw this my father was kind of excited because he saw hope and with hard work there would be something that would evolve from that but my mother cried knowing that what I was doing to my wife was not what a man should be doing to his wife or a woman or anything like that because I kind of isolated her here. And by isolating her here she has blossomed too. She has essentially taken the retail. She manages the retail and now our first son is in the business with us. And so all of that is just kind of moving along after 30 years. We've been here 30 years so it's a significant amount of our lives that has been taken and it's been consumed by the business but the business has been good. It's healthy, just breathing in here and observing and seeing and feeling and there is a lot of excitement. It's been a good move. And the relationship too has been exciting working the University staff has just been the real plus that I really have endeared to because it's allowed me to grow as well as hopefully the relationship between the University and stakeholders. I think that's an important aspect of all of our lives. You know it's been an evolution of time from the time I was a kid to the current time it's just been a progressive move in education. You know I call this my post-graduate work essentially.

#### OHIO SERIES - STARTING OUT

**Lynn:** In the early years my mother in-law was definitely not in favor of us getting into the business. She had worked many, many long hard hours in the floral business, and she actually cried when my husband brought them down to see what venture we were getting into. And I think she was really putting herself in my shoes. And she did, she literally cried, I think hoping that we wouldn't put ourselves into a situation to work so hard. Her whole thing was that we went to college so we wouldn't have to work so hard. But I

guess we were young, we were naive and I was excited about it. Of course I didn't know whether I would continue with teaching or not at that point I was and had no plans not to teach. I absolutely loved my degree and my career. But I thought it was exciting and it was what Justin wanted to do, so I went right along with it. Initially, I just started out helping out in the business in the evenings because I was a teacher for five years before our first son was born, and so I would help out in the springtime and weekends. And then after I took leave I had that decision to make, whether to go back and get re-certified in vocational home economics or stay and work the business. And because the direction home economics was going at the time I decided I would use my education and expand the retail part of our business. And so then in 1989 we went to year 'round retail.

### OHIO SERIES - RETAIL BUSINESS

**Lynn:** We have two distinct areas as far as the retail part goes and I would say they are about 50/50. Certain times of the year they are heavier in one direction or the other. We have our plant sales with the garden center, the poinsettias at Christmas time, the fall mums, and all the ingredients that go with those things, the hard goods, the preventative things. And then we have the giftware and the collectables. And those sell year 'round. Right now we are going thru a heavier giftware time obviously. And in the wintertime it's a heavier giftware time. Certainly during Christmas and the spring plants definitely by far outsell the giftware and the collectables.

Initially, our retail business was just customers going into the greenhouses, picking out what they needed and getting rung up and leaving. Then we...what we did was, gradually we added a sales area. So we put one area on, on the lower level that was attached to our barn, that we knew eventually we would use. And so we setup, again just using it in the springtime. At Christmas they still had to the warm greenhouses and buy their poinsettias. And then gradually we found that worked well so we added on. We quickly outgrew that initial part of our sales area so we added a second part. Kind of excavated further into the hillside, and pretty much doubled our sales area. Once that evolved we thought "well, we really should have heat for year 'round" so once we had heat year 'round. We thought "well, we should be using the facility year 'round" so we decided to go also expand into Christmas that way. And so it started out gradually with no intention of doing too much at all. And here we are. Full boat. The whole thing. So we did two stages of sales rooms. And once that was completed then we finally went into the old barn, that's one hundred years old, we expanded into that and that opened up a whole new kettle of worms.

### OHIO SERIES - STRUCTURE

**Peg:** Ok we are here in Justin's newest greenhouse range, and he is going to explain what we will see in here and then also how his greenhouse construction has evolved over the years.

**Justin:** Thanks Peg. What we are standing in, we are standing in about a quarter of an acre, about a little over ten thousand square feet. This house is our fuchsia house. We designed and built this for because it's heated both in the floor as well as above. So we have actually two zones of heat in here. It's a photo period controlled house, so it's phototropic because we can control the fuchsias and the fuchsias are a long day plant. So in other words we want to allow them to sleep earlier so that we can keep the flower buds off and maintain vegetation. So it gives us the ability to black cloth this entire greenhouse earlier in the day, even in the course of summer because what we've done, not only do we have natural ventilation in this house but we also have pad and fan cooling so it's all staged. In fact there is essentially 14 stages of cooling in this house when we count all the six fans that can go on independently and then we have horizontal air flow in here too. Everything in our greenhouses are all hot water heated. So we can actually have about close to 21 miles of heat pipe in all the greenhouses, not just this one, but we actually heat close to a hundred thousand square feet. So in doing that, it's all in hot water, it's all in steel pipe as well as tubing in the floor here imbedded in the concrete.

The nice thing about this greenhouse is is that it's all computer controlled so automatically it will adjust to the day length, the period of day which it is, and so it will adjust by one minute two minutes, whatever is

necessary, to make sure we have the 12 hours of daylight or 12 hours of darkness, whatever is needed. So this house is a very versatile house and we use it primarily for our fuchsias. It does a super job. And right now we have a little bit of all the different varieties in here, but we also have other greenhouse ranges that have fuchsias in them too. So the focus was to build this house strictly for the fuchsias but we use it year 'round. As far as the structures, we started off with traditional greenhouses, wood cypress frame, you know or redwood framed in glass and some covered in poly, so it was like the Cornell style greenhouses that we saw years ago, as well as like the Lord and Burnham type style houses.

We since have torn all those down and we have built this whole new complex right here which is up, out of the valley we were in because in the first seven years I think we flooded five times in our first seven years, so that's why we moved up on the hillside essentially. The greenhouses are terraced. We actually have two elevations which makes it kind of difficult to work with but we have an elevator that works very well as far as plant material goes, so we can move it onto Dutch carts and do it that way so we have adjusted to what we need to. Right now, currently we are about fifty percent poly and the other fifty percent glass. So that we have both bases covered pretty well. If we were to do it all over again I would definitely go all glass there's no question.

**Peg:** Why's that?

**Justin:** The reason is because I'm getting older and putting plastic up is difficult. The other reason is because of light intensities. And with the technology of shade curtains today, I mean in here we have a shade curtain of 47 percent and then we have black cloth for a veneer so we have a lot of efficiencies that we can build into the system with the computer. So on a cloudy day everything is wide open. Even on a day when it's marginally bright, you know it still can stay wide open. But then when it gets really hot we can draw full shade and pull the cooling fans on. The efficiencies of this house are really great because of the shade and energy curtains. But the efficiencies in the poly range, you know based 35 years ago or 32 years ago on the concept are still holding very good and true today too.

#### OHIO SERIES – PEST CONTROL

**Peg:** Justin in the greenhouse pests are always a problem but I see that your materials are very pest free. How do you manage to do that?

**Justin:** Peg it takes everybody's effort to help manage it from our associate staff all the way through to our growers. Anybody that's in and about the plant, the most important thing is the plant itself at that given time no matter what their project or what their work schedule is. So the pest management is ongoing all the time. It's 52 weeks a year. It's 52 times and it's daily, and 24/7 essentially whenever we're in or around the plants. We have a very nice program that was written by one of my Dutch interns that I had several years ago. And he put it in a nice format to where it's 3-dimensional as well as graphic so we can see the different areas that are more of a concern. It points it out specifically in the greenhouses.

We're sitting in amongst some of the lantana and Selicia daisies. The lantana being the greatest attractor of insect problems in the greenhouse be it white fly or thrips or anything like that. And so it's imperative that we keep them clean because when we're shipping cuttings all over the United States we don't want to ship meat along with it. In other words we're into the vegetative side of things we're not into the meat side of elements so you know we go about this. We put it down in IPM. We know what our spray cycles are and what they should be. We can analyze it based on 3 years or 4 years of data knowing that we're coming up to week 40 or whatever we're at 41 at this period and we know that in years past that we had these concerns and so we'll be looking for those concerns and as we see them develop then we'll start spraying for them prior to.

**Peg:** So you're a very pro-active management program.

**Justin:** Yeah. It's better to be pro-active then reactive and right now there are some issues that we have to be reactive to unfortunately and it's not a good posture to be in.

**Peg:** A couple of minutes ago we were talking about, you noticed that the humidity levels were up in the greenhouse partly because we turned the fans off for videoing. What is the concern with high humidity in the greenhouse?

**Justin:** We like to maintain a humidity of 50 to 70 percent, within that window. The greatest concern is mildew at this time. Within the last few years more poinsettia cuttings come from off shore. So all of our unrooted cuttings come in from off shore, in Costa Rica and Guatemala and Mexico and those regions. Ever since then, and I'm not a scientist I can't put my finger on it, but ever since then we've had more poinsettias susceptible to mildew than any other time in my 30 years. So when the plants were here in controlled environments within the United States there wasn't a problem and we're working with still some of the same cultivars but now they are all removed and off shore. The environments there are humid and rainforests and all those type of things regardless of the elevations and where they're at. So now our biggest problem and concern is looking for mildew.

And right now the big concern is because of energy costs. Our energy costs, and this could go into some of the other things about what's down the road, that our energy costs are forcing us to unfortunately go to a higher threshold on mildew than we would like to because at nighttime we'll ventilate and then we'll close it up pretty much and that's not good. For all these years, 25 years, that we've been doing vegetative cuttings and the 30 years we've been growing we've allowed free ventilation and re-heated that cooler, dryer air. Now it may not be an option and that's a real concern for us.

**Peg:** Justin scattered around the greenhouse at regular intervals we see yellow and blue sticky cards. Would you explain their place in your pest management program please?

**Justin:** Sure Peg. The yellow and blue cards, they're all strategically placed. They are all graphed out. We know exactly where every card is within the greenhouse, all the square footage. We use yellow and blue because based on the entomology reports and all the entomologists they're always telling us that certain insects are attracted more to yellow versus that of blue and vice versa so we go with both styles or both colors, both yellow and blue, and the blue is for thrips primarily and the yellow picks up white fly, fungus net, shore flies, aphids if they're winged and the like, just about anything else. And both of them being sticky they pick up a lot of things regardless so if they're brushed by people or anything like that. But we know through scientific studies and through reports from universities and yours particularly and others that the blue is more indicative for that of the thrips and then the yellow is pretty broad perspective I guess in that regard.

**Peg:** How often do you check the cards?

**Justin:** The cards are checked daily but every week they are then identified and changed out. And we go through a multiplier. We don't count every insect on there.

**Peg:** Right.

**Justin:** We take a quadrant and multiply it out and come up with a base average.

#### OHIO SERIES – ENVIRONMENTAL ISSUES

**Peg:** Justin, we are outside your greenhouse on the hillside looking down on the facility, and I know that you as a grower, you are very environmentally conscious and do your very best to keep the environment from feeling the impact from your greenhouse. How do you go about that?

**Justin:** Again Peg I hate to overuse the word challenge, but it's always a challenge because we are in a rural community. We're infected by a stream that borders our thousand foot frontage of our property and It's a stream that feeds recreational lakes in the state of Ohio. You know Pleasant Hill Lake. So we are very cautious and conscious of that particular waterway. Currently what we do we have, for the last ten to

fifteen years, we have had environmental chemists come in and they test our water up stream and down stream to make sure we are not putting ten parts per million of nitrate in it or anything like that, which is the federal guidelines. We are always within .00025. That's all basically they ever find. We have a greenbelt we put around the greenhouse structure and because of the terrace element and the flow of land going toward the creek bed what happens is with the greenbelt it absorbs anything and everything that actually would get out of the greenhouse confines. So even in a leachate, thru osmosis whatever goes thru the ground water when it comes out at the weakest spot it's usually feeding the grass and it's really been wonderful and great to work with.

**Peg:** Which would explain your green grass.

**Justin:** That's exactly right. And it's a pretty fall day.

**Peg:** And plus, from what you said you are very conscious about not over spraying and only using the pesticides that you need only when you need them so you are not including in that way either.

**Justin:** Well it's important. The problem is there are so many regulations and it's hard to keep up. And I don't keep up as well as probably one should. We make sure our MSDA material is all put together and all those kinds of things and I still find if we go to another chemical that we don't maybe insert it into the booklet the way we should. You know the Department of Agriculture for the state of Ohio has been in here and overviewed our records. We have records of all of our pesticide use for the last several years on whatever basis be it daily or weekly or anything like that, where we spray and who we spray and everything else and the REIs that are associated with the chemical etc. So it's important we do those kinds of things. It's not fun. I'm not saying ...it's one of the elements unfortunately that removes some of the fun of being in business, And yet you have to be a good steward because the most important things are food, fiber and the quality of life and our industry is part of the quality of life and if we don't protect it then the food and fiber could be a potential problems too. And the minor use chemicals are the other elements with IR-4. It's really a concern that we all have that things be removed and the more of the arsenal that's removed the more difficult it becomes. And then again I go back to that fun element and if the fun is removed from it, then I'm going to have to look for another job and I may become a videographer.

#### OHIO SERIES – COMPUTER USE

**Peg:** Justin, to manage the temperatures, the humidity, all the things that are so important in growing a crop do you rely on computers in your system?

**Justin:** It's very safe to say Peg that we rely heavily on computers at this point and not just like the one gentleman that spoke about the office but our complete environmental system is operated by computer.

**Peg:** And how long have you had these computers?

**Justin:** The computers have been in place since 1984. This particular system which is a QCOM system, this was the first system brought east of the Mississippi in 1984. Right now Ohio has a significant amount of QCOMs, or this particular environmental system, which is the largest enclave of environmental use right now in the United States. But this has been in use since '84. This is the most recent panel. It's the most orchestrated panel as far as being coded and defined and etc. Where as before the system was disjointed, not in a sense, but there was a box here and one there in each and every greenhouse.

**Peg:** So you consolidated?

**Justin:** This is centralized for this new greenhouse area. So this controls all aspects of that greenhouse that we talked about which was photoperiod, and cooling and lighting as far as additional HID lights, horizontal air flow, the two motors that open and close the ventilation system. Right now I closed the shade system and I did that just for effect more or less. But if we go back and put it all on automatic the

computer will actually bring the shade system back to where it should be on this cloudy day that we have out today. So everything is oriented to the algorithms that are built into the system but there is also an outdoor weather station both for wind direction, speed, rain, light sensor, humidity, all those things that are there that the computer relates to. So it works extremely well.

### OHIO SERIES - LABOR ISSUES

**Peg:** Justin, in an operation like yours you and your wife Lynn don't do it by yourselves. You have to have a staff of capable employees. What is your employee base and how do you find them and how do you keep them?

**Justin:** That's good question Peg. It is very true. When we first started out we had one staff person and she worked for me and retired after 18 years. Then we hired two more and they stayed with me for 27 and 29 years. We right now currently have a total of 26 individuals that work for us. At one time we'd go up to as high as fifty when spring comes. And at one time we were running 45 on a full-time basis. But now we fine tuned our staff because we have a good quality of individuals that work with us. I mean Chris has been here 7, 8 years. Pat is beginning her second year. And Mike Homer who has been in the industry for a number of years, probably 30 years, has been here in his third year but he's our head grower at this point in time. We have a good broad spectrum of people and we have good quality. And without good quality people, and we call them associates. It's easy to call them employees, but they are really part of our family. They are as close to our family as any. And that's the fun of it. We have good relationships. They do a good job and they know what they are doing. So when they see things that are awry ...so like we talked about nutrition. If there is depletion in a leaf or something like that or chlorotic look then we are looking for either insects or nutritional values that are there. So the staff has a good eye and they are not afraid to say anything. We have 26 really good people. And 8 or 9 of those individuals work within our retail and the other 18 or so work with our production. And then they flip flop when our production staff needs additional help and the retail is slow retail people come up and give us a hand sticking cuttings. And in the springtime then our staff goes down and helps service customers with our plant material. So without them, you are right, we couldn't do this. We wouldn't be able to grow from an 18-thousand square foot area to a hundred-thousand square foot area. So it's very important to have good people.

### OHIO SERIES – LIFE CYCLE

**Justin:** Ok what we're going to show you right now is essentially the life cycle of our vegetative cuttings and we're going to use the fuschias since it's the one we use the most often here.

Basically, what we do is we come in here and we would remove a tip, which we would call asexual propagation, or mechanically remove a tip but we would do it with a knife. And by doing that we would be going for about an inch, inch and a half cutting. And we would take this vegetative tip cutting and stick it directly into our rooting medium. In doing that, and after a life cycle of anywhere from 4 to 8 weeks, we would go ahead and develop a rooted cutting like this in a flat. And there are 105 units in a flat.

This flat here would then be utilized by another grower to go ahead and put into either a pot to finish for Mother's Day or the spring or they would put a series of these plugs into a basket anywhere from 4 to 5 plugs into a 10-inch container to develop a nice finished basket for Mother's Day.

So the life cycle goes from an unrooted cutting to a rooted cutting, pinched, into a final container and/or that of a 10-inch hanging basket for Mother's Day.

### OHIO SERIES - NUTRITION

**Peg:** Justin in a greenhouse such as yours where you have everything from unrooted cuttings to a finished product to stock plants that you hold for a long time nutrition, managing nutrition is a critical part of your operation. How do you manage the nutrition of your crops?

**Justin:** Well Peg first of all it's extremely difficult because our crops are long term. We carry stock where we cull the stock and we develop new material every February so we carry it all way through till May and then pot it up to finish and bring it into a mother stock. But during that period we are using Milorganite in our soil which allows for salts to build up a lot earlier if we don't watch it.

**Peg:** Milorganite is a fertilizer component?

**Justin:** It's an organic fertilizer type thing and we use a bark mix, a pine bark mix, with peat like in it. So with that we found we get good drainage and good action, you know bacteria, good bacteria in that. So we are constantly watching our pH and ECs. So we are always doing leachate testing, you know the 'Pour Through' method. And so we are trying to measure and observe what our cuttings do etcetera. The other thing is our staff really watches. I mean we can tell from the time the plant roots etcetera whether we're balanced or not too. So if we're not catching it routinely on a weekly basis or a monthly or whatever then our staff really has a good eye for it. So that's the thing. We use a fertilizer injector. We're using Dose-atrons right now and we probably always will. And so we use different components and depending upon the time of year we'll use an ammonium types in the summer time, of 20-20-20, and very little of it, just to kind of boost the organic matter in the soil. And then we switch to a peat-like mix, 20-10-20. We've gone to a high acidic type sometimes to lower the pH if we have to with a 20-7-20 and at times we use a 15-0-15 or a 15-5-15 or something like that so we really observe that.

**Peg:** You basically use a commercially available fertilizer?

**Justin:** Right. We use a water-soluble pre-bagged pound mix and we work it to where each bag relates to 100 PPM or 150 PPM whatever we're doing so we don't have to change our injectors often. But we do check the injectors. We do test the equipment to make sure that when we're testing for EC and pH that we're getting an adequate reading.

OK. Peg the way we apply our irrigation both fertilizer and clear water is through drip irrigation and also hose watering but this is the Israeli Drip System that we use and we've had it in place for about 15 years and it's been a very effective system so we get good control. We do it manually. Our growers come in and they turn the whole bench on at a time or two or three benches and it equates very well providing man or woman puts the probe back into the pot correctly and so it's all on an umbilical cord so essentially all these pots are tied by an umbilical cord which features the water or fertilizer that's necessary.

#### OHIO SERIES - FINAL COMMENTS

**Peg:** Justin, we've talked about several different challenges that you face as a greenhouse grower and owner. What do you believe is the single biggest challenge facing our industry these days?

**Justin:** For success?

**Peg:** For success. Yes.

**Justin:** For success. The greatest challenge right now is just where the industry is going. Right now there's seemingly a lot of over production and we see the box stores are having a real impact on everybody's marketplace. So everybody says don't grow a commodity crop. Well all of our crops are essentially commodity crops. Poinsettia which is significant has been turned into something like a gallon of milk, a liter of this or whatever so we're running into this gambit where our industry was at a nice level pace for all these years and now everybody wants to turn it around and make it market driven, marketing driven or brand name and I'm not so sure I agree with all of that. You know it used to be that flora culture was part of the arts and the sciences of growing and I really would hate to see the art element be removed. So my



biggest concern is the challenge of business in the future you know with over-production and retailing outlets the types that are evolving today and what it will do for the small family business. I mean I think it's going to impact them somewhat to maybe include us, whether I want the next generation to follow me or not will be one of caution and something that we will look at in the next few years.

**Peg:** What would it be that you'd like to learn now that would help you most with your business?

**Justin:** I always find engineering fascinating, the environmental conditions fascinating. How can we improve that? And it's even more important today. What fuels are going to be available? What resources are going to be available for our future? Because it's dramatically impacting our businesses and our bottom line today. The other aspect and there is another side of it, is the plant path/physiology side of it and the insect side of it. But the most important thing that's right now hindering us is this environmental issue of fuel and heating and energy. Energy is the big thing. So somehow I would love to know what's coming down the road. And it's got to get here quick. I mean if it doesn't get here soon than a lot of us will become obsolete, non-existent.

**Peg:** Justin we've met some of your associates, and you have told us how proud you are of them and how well they work. When you are hiring a new employee what would be the one thing you would like that employee to know so they could hit the ground running and start to serve you well from day one?

**Justin:** Well Peg it's always interesting. Like I said I was personnel director for 2 1/2 years and now I've hired everybody here for the past 30 years. So everybody has this inkling that everybody loves plants. So by loving plants they think that's the common interest. Right? That's it but they don't realize how much hard work and toil and concern go into raising a good crop. So if they are coming in here...and we have all lost that agronomic background. We no longer come from family farms so the work ethic is a little bit different. If we still had that agricultural background, that work ethic, all of our tasks would be a lot easier. But because of that now we have to instill some of those things in people. You know, as far as habits and as far as quality and contentiousness and concern for what they are doing. So that would be the biggest thing I think at this point.

**Peg:** As a professor and a teacher at an institute of higher education, I'm always curious to know what our clientele, the future employers of our students, feel about how we are educating our young people. How do you see the college graduates the day they come out in this area? How do you see them fitting into the work force? And are we...are there some things we should be teaching them that we are not right at the moment?

**Justin:** Well unfortunately to date we really have not had, in 30 years we really never employed a college graduate. One and he was very good and he was from the University of West Virginia in floriculture and horticulture. And he was very good at what he knew. I think in general today what I find is intern programs and I think that the life skills that one acquires by being involved in a work environment and not just one time but in multiple times to acquire their degree is really beneficial. Scheduling of plant material as far as the growing schedules and proper...making sure all the product supplies are all in line in order to get that crop thru and the finish element, the use of computers, those kinds of things. They need to be involved, hands on types of crops. So whether you do that in your compartments there at the university at Ohio State or whether they are sent out on a quarterly basis or a semester basis to be employed elsewhere. I think the employment elsewhere is important not only within the state of Ohio but outside the state, outside of country to where culturally they pick up different things to learn how to grow with because a lot of our heritage comes from Europe and a lot of it has stemmed and evolved and developed from our land grant institutions. And our land grant institutions are fantastic.

**Peg:** Justin, if you had words of wisdom for me to take back to my classroom and tell my students what would those words be?

**Justin:** Every student has a lofty goal of being their own boss and I commend them for that but being an entrepreneur is much more than being a risk taker in a business sense. It's much broader, and the difficulty is, is they don't understand that yet. They don't understand what it is to hire people, what it is to pay

people, what it is to do the energy sides of things, etc. The smaller you are, the smaller your problems. The bigger you are the larger the problems. So you know I'm somewhat jaded or clouded in that aspect because we have gotten too large to the point to where sometimes it may not be fun and if they are intent on doing that, becoming a sole proprietor, then I welcome that and they should welcome that but do diligence, study the element well. Where they place their business based on location, based on all sorts of things. Know exactly what they are getting into. Study before they jump into it.

**Peg:** Thank you.