

FLORIDA SERIES – FLORIDA GREENHOUSES

Sandy: Welcome to sunny Florida. We're here at the University of Florida Indian River Research and Education Center Teaching Gardens. The ornamental industry in Florida now is the largest commodity group surpassing citrus and vegetables. With an estimated economic output impact at 9.16 billion dollars, Florida leads the US greenhouse and nursery industry ranking second only to California.

Our nursery industry here encompasses over seven thousand commercial producers with over 200 thousand acres in production, the majority of which is in either field or open-air production. And the nursery industry encompasses over 192 thousand employment jobs associated with these positions. The tropical foliage industry comprises one of the fastest growing segments of American agriculture with an estimated value at 663 million dollars. Florida dominates the US market for foliage production generating over 85 percent of the sales.

We're going to be visiting Kraft Gardens today. This is a 40-acre foliage nursery with 20 acres under protective cover. Kraft is known for their state-of-the-art greenhouses and for producing some of the finest foliage in the United States. Once visiting Kraft, you'll understand why Kraft easily ranks among the top five producers in the United States for interiorscape wholesale foliage production.

FLORIDA SERIES – KRAFT GARDENS

Sandy: Hello. We are here today at Kraft Gardens and I would like to introduce you to Kevin Kraft owner, president and head grower of Kraft Gardens. Kevin is going to share with us a little bit about the history of Kraft Gardens.

Kevin: Hi. Kraft Gardens started back with my father in 1947 and started out as a small lawn service down in Fort Lauderdale, Florida and eventually he worked his way into landscaping and then a wholesale nursery and then last year we moved from down there to up here and opened this facility and closed that facility down there. We have about 850 thousand square foot of houses here and we are growing mostly indoor plants that are shipped all over the United States. Products that we have here are mostly ficus trees, the new varieties from Holland, some beautiful palm trees for the interior, and those types of indoor species for the interiorscape market and the homeowner.

FLORIDA SERIES – COMPUTER USE

PJ: Here at Kraft we have many systems on computer control. Here at the pump station we have an example of a control box with 16 outputs. On these outputs, they control not only the main pump but the fertilizer injectors as well as the irrigation zones. Throughout the shade houses and greenhouses similar boxes also control the heat, the vent, the fans, the shade, the moving shade systems and the side walls. These systems are controlled by a main computer in the office and we also get feedback for control decisions from our weather station on top of this building.

FLORIDA SERIES – CONTAINERIZED MEDIA

Kevin: Kraft Gardens uses three different types of soil mixes typically in our growing processes. We have these special blended and brought in to us here at Kraft Gardens at about 70 yards per load. These mixes contain typically perlite, pine bark and Canadian peat moss with other additives such as starter fertilizers and dolomite. Some of the soils require higher pHs and like the palms would like a lower pH and so each plant product is then suited for the soil mixes that we have.

FLORIDA SERIES – HURRICANES IN FLORIDA

Sandy: Well Kevin as you are well aware in 2004, Florida was hit by four large hurricanes Hurricanes Ivan, and Charlie and Jeanne and Frances. And Hurricanes Jeanne and Frances hit Fort Pierce directly head on and the seven thousand nursery industries in Florida estimated their value of destruction to be at roughly eight-hundred million dollars. And so I'm wondering how did Kraft fare during all these hurricanes and what did you do right or what might you do next time during our 2005 hurricane season?

Kevin: Well, it was definitely a challenging year. We had Frances and Jeanne. The eye of the storm came right over us. We had top winds of 126 miles an hour. Fortunately when we engineered and designed everything here, which I recommend everybody to do, we built everything in mind of a hurricane coming. So we built structures to go up to 160 miles an hour. We have structures that we can pull the material back, and let the wind blow thru. We can lay the plants down. Those type things. We fared really well we think. We lost about ten to fifteen percent of our total inventory, which we felt was very good. We were able to continue to ship that month we had the two major storms go thru. We continued to ship. And in the aftermath of the storm we were able to regroup, get the right employees and kind of shift responsibilities in the reconstruction and management tasks. And so we were able to put the place back together really quickly. And now the nursery is back in full operation again just 3 months later.

Sandy: Great.

FLORIDA SERIES - LABOR ISSUES

Kevin: Kraft Gardens employs about forty-one employees. Of the forty-one employees, 25 work outside. We divide up the nursery into different areas. We try to give workers start to finish responsibilities. We have three different growing areas as well as production and shipping. The supervisors are in charge of each area. They grow the plants from the beginning and they also pull the plants for shipping to the very end. This gives them a feeling of responsibility and being in on things in what they do. Most of our employees are full-time Hispanic workers. We have extensive training programs to teach them. We always try to promote from within our company. We have job descriptions for each job that they do. They are rated on how well they do each month. From there they get incentives and raises and we have employees that have been with us 20 years. We believe a trained, experienced workforce is much better than a workforce that turns over rapidly.

FLORIDA SERIES – LIFE CYCLE

Kevin: Rhaps Excelsa is one of Kraft Gardens specialty products that we produce. It's one of the finest interior palms that you can use in your home or in an interior landscape job. Kraft Gardens grows about two thousand plants a month and we just got in these seeds that came in from overseas. In this little pouch contains 10 thousand seeds. This little pouch here costs us \$800. And from here we take these seeds and put them into our specialized chambers that are controlled temperatures. This chamber back here, each box will contain four thousand seeds and in about three months time they will be sprouting and ready for the next transplanting.

After the rhaps are germinated from the chambers we then take the seedlings from there and plant them individually into our 38-cell cavity trays. From there after 8 months you'll be able to see how fast they grow and you can see they are not very fast growers. What we do from here is what we call selective breeding. We have trained our employees to go through and look at the plants that have the characteristics we're looking for to have strong, healthy plants for the interior. This is a good example of selective breeding. These plants here are all the same age, these beautiful rhaps palms, but as you can see this one here has a lot larger size and the leaves have multiple leaf petioles on them, where this one is very small and has a singular petiole. These are basically two different products even though they came from the same seed batches. This stage here we'll put into a smaller container and this stage here we'll put into a larger container creating another step in the process.

And here's the next stage. From our seedlings it took a year to grow to that stage. To this stage here is

another two years to get to this stage and this is a process we call up-potting. We take one plant and progressively pot it up to the next size. We went from a liner size. We go to a 6-inch to a 10-inch to a 14-inch, a 17-inch till finally they can get up to six, seven feet tall that can take from six to seven years to grow.

FLORIDA SERIES – MARKETING

Sandy: Hello. We're in the conference room here at Kraft Gardens and I'd like to introduce to you Alex Fell. Alex is the sales manager here at Kraft Gardens and we're going to ask him a little bit about the marketing and distribution of some of the foliage plants here. Alex, if you look at the data it seems like in Florida at least most of the plants are distributed within a local area of where they're actually produced and I know with foliage plants that's probably quite different. Can you talk to us a little bit about your distribution?

Alex: Sure. Actually, yeah you're right. Our nursery sells very little to our immediate local area. We actually do a little bit more with counties outside of our own and then our biggest market is definitely out of Florida into the continental US. We do have some international customers, some in Canada, a couple in Holland but mostly it's the continental US and definitely not Florida.

Sandy: And what is your primary market? Who receives your product ultimately?

Alex: Well if there's a business somewhere that is making money off of tropical plants that would be our market but primarily it is interior landscapers. They're pretty much in the market for the higher-end interior plants which are what we produce and that probably comes first. Second would be the garden center, the independent or family-owned garden center which due to mass market killing them on prices chooses quality to try to out their competitors and that's where we come in. We grow a nice quality plant that you can't find in the big box stores.

Sandy: Are the majority of your plants pre-sold?

Alex: No. Actually we don't really contract-grow a lot of plants for anybody. We try to anticipate what the market wants a year ahead of time and during that year see what's selling good and see what isn't and then make adjustments for production the following year.

Sandy: It seems to me that from a sales point-of-view that would be one of the greatest challenges is trying to predict what people are going to want and when because it seems to be such a rapidly changing market or is that just my perception?

Alex: No. In fact that is true, trying to predict what people want and rolling out new products is very challenging. Our plants are sold on their performance indoors, how they handle the interior environment and without proof of that when you're selling a new plant you are basically selling it sight unseen and performance unseen. And you have to just let your customers trust you that yes this is a good product. Please try it out. And that goes along with a reputation too. If your nursery has a reputation for growing a solid product it's easier for them to roll out new products based on the previous stuff they've grown for that customer.

Sandy: Say you're at one of these trade shows and you see another foliage producer that has a new cultivar that you're not familiar with and you might be interested in trying out. Can you walk us through the steps that you might go through before you would actually start producing that or how you would go about trying to generate a market for that?

Alex: Well unfortunately part of getting it started is trialing it at the nursery so there is an initial investment. There is the agreement between us and whatever laboratory or plant source that we're using to get this new product started. And it involves us before we know that we can sell it we have to know that we can grow it so it certainly involves trials here at the nursery. After that we actually...our R & D program

involves reaching out to our customers to get their feedback and we actually have a selected group of garden centers and interior landscapers who we ship new trial plants too and they run the tests for us that we can't really do. They are the professionals that should tell us what light level they had it in and how much water they were giving it and other things like how they liked it when they initially saw it and what other pots sizes it would be good in. That kind of feedback leads us to making it a 'go' or a 'no go' situation for the plant. We'll then decide on if we can grow it for the suggested wholesale price that our customers told us that we should sell it at. And then after that there's a good chance that if our price jives with the price that the customer wants to pay we'll do bigger numbers of it and we'll start to sell it in small areas or maybe even in certain markets and that's how really a plant gets off the ground.

Sandy: So tell us about Kraft's Professional-grade Plants trademark?

Alex: Professional-grade Plants we came up with to give our products a brand name. We wanted brand recognition in the industry and just the Kraft Gardens name certainly was probably enough but something that you could attach to our products to where an interior landscaper could request our stuff by name by either the grower or by our brand name, or a garden center customer could come back and maybe on a repeat visit and say "The last plant I had was a Professional-grade Plant. Give me another one of those." We chose the actual words 'professional-grade' because we put a lot of professionalism into growing our plants whether it be the ingredients we use; the good soil, the Canadian peat that doesn't break down, the hard-side pots, using best management practices even in growing situations, drip irrigation and fertilizing that alleviates water spots on the leaves which an interior landscaper doesn't have to clean before he installs a job, he or she installs a job or a garden center manager can put their plants right on the floor. It's ready for sale and that's just it. Professional-grade hopefully will tell the person buying that plant that if they're not already a professional landscaper that you know if it's good enough for a professional it's good enough to survive in my home so that's why we chose that trademark.

Sandy: We talked about some of the greatest marketing challenges being the marketing of new products but what about some of your distribution challenges? Can you talk to us about that a little bit?

Alex: Yeah. One major one comes to mind and that is trying to reach out and touch all of the very small markets across the country. As soon as you get outside of these big cities it becomes very hard and very actually, very expensive to ship plants into these small towns where there are plenty of garden centers and plenty of professional interior landscapers so our challenge is basically a way to get them our product. A lot of these types of businesses use a local wholesaler or the wholesaler in the biggest market closest to them. And as long as we can be in touch with that wholesaler and through that wholesaler get, or that broker get the plants to the small customer we've overcome the biggest challenge but certainly by far it's trying to get your plants into every corner of the country for sure.

Sandy: Well we've certainly seen lots of great examples of all of Kraft's professional-grade products out here today and we appreciate your time being here with us.

Alex: My pleasure. My pleasure.

FLORIDA SERIES – NUTRITION

PJ: We are here at the pump station where we control our irrigation and fertilization for all of the shade houses and greenhouses. The water supply is the 3-acre lake behind us. The water quality is excellent. It's mostly rainwater that's collected on site. The pump pulls it up and puts it through the filters and then it gets injected with the fertilizer with these Anderson injectors which are controlled by our Argus control system. It then goes into the mixing tank and out through the main line, out to the different shade houses.

Here we have our bank of valve controllers. Our irrigation computer controls each one of these valves individually. They are hydraulically operated out to each individual irrigation valve in all the shade houses.

After the irrigation zone is activated at the control panel the water comes out through these individual

drippers at a rate of one gallon per hour which reduces the waste. Each plant gets what it needs. Every plant in every shade house has one of these drippers, very simply a dripper on a stake.

FLORIDA SERIES – PEST CONTROL

PJ: Here at Kraft Gardens our customers demand Professional-grade Plants. In order to achieve this goal we must be on the constant lookout for pests and diseases. In order to keep those to a minimum we train our supervisory staff all the way from production to the growing staff as well as the shipping staff to be on the constant lookout for any problems that might occur. This plant here, the Ficus Lyrata Standard, is like many plants and it has several problems. Insect problems tend to be thrips, mealy bugs, aphids as well as sometimes spider mites. To control these problems we must spray on a regular basis, sometimes as often as once a week using either a blow sprayer or a hand sprayer. Other crops are on different programs. Fungicides on our palm crops are sprayed as often as once a week and more often if we get rain.

California is a big market for Kraft Gardens however in order to ship plants into their state we must meet some requirements that they have as it pertains to nematodes and insects and diseases. In order to meet the nematode requirements one of the most common ways is to grow the plants from start to finish on a bench at least 18 inches above the soil. Another possible way that we have developed to meet the necessary requirements is a modified surface permit which includes the engineering of the property for proper drainage. We also had to bring in certified nematode-free soil from our pits for fill as well as cover that with plastic and ground cover.

FLORIDA SERIES – STRUCTURE

Sandy: Hi. I'd like to introduce you to PJ Driscoll, Operations Manager at Kraft Gardens. PJ has been here since 1993 and he's here today to discuss with us all the different aspects of foliage plant production.

PJ: Good morning Sandy. We have three structures here at Kraft Gardens. We're standing in the greenhouse. We chose this greenhouse...it's a Westbrook, modified Westbrook. We chose this house because it's double poly plastic for heat retention. The side walls are polycarbonate for light as well as durability. In this greenhouse for ventilation and cooling we have 18 fans along the West wall and along the East wall is a vent that opens. Both the heating and cooling in this house are controlled by computer programming.

Sandy: Well PJ we should tell our viewers that we are in Ft. Pierce, Florida and we're in USDA Hardiness Zone 9B. So that puts us at fairly tropical conditions as they can see all the tropical foliage in the background. Can you tell us a little bit about the heating and cooling systems here in this greenhouse?

PJ: Well the cooling is handled by the 18 fans that are on the west wall of the greenhouse in conjunction with the vent that is computer controlled on the east wall of the greenhouse. And that handles the cooling needs for these plants. As far as the heating, you can see on the north end of the house there are four Modine heaters that are run off of natural gas and the south side has three heaters. We are able to maintain a temperature of 72 degrees in here on the coldest of days partially because the roof in this greenhouse is double poly. The space between the layers acts as insulation to keep the heat in.

Sandy: How many months of the year would you say you even need to use heat in these greenhouses?

PJ: To maintain 72, probably about four to five months and usually only a short time in the morning.

Sandy: PJ this is quite an impressive greenhouse. I'm wondering if you had the opportunity to build a new greenhouse what are some of the adaptations that you might install?

PJ: Yes. Thank you Sandy. A lot of the procedures in here are automated using computer control but there are some plant movement issues that I would like to upgrade. Although we have the rolling benches they all

have to be moved by a person. The plants have to be handled, spaced, planted and moved. Some of the upgrades I would like to see are the automation of the planting, that can be done automatically. The plant movement and the plant selection can all be handled with computers and sensors. The benches can then...the whole process from start to finish, planting to shipping, can involve no one touching the plant.

Sandy: And that would ultimately reduce your labor input?

PJ: Absolutely. Yes. That would greatly reduce it. In Europe, on a recent trip to Europe we saw five-acre greenhouses with five employees. That's one employee per acre. Here we have approximately two to two and a half employees per acre.

FLORIDA SERIES – UNIVERSITY COLLABORATION

Sandy: Kraft Gardens has always been very proactive in working with University scientists and interns. Can you share a little bit about your experiences with our graduate students and our breeding programs and some of our interns that you might have had here?

Kevin: Sure. The interns that we had, the last one that we had was wonderful. She was here for about six months. She graduated from the University of Florida. We put her in our training program. And specifically we put our interns into a regular regimented program and each week they move to different departments and they are given plenty of information to learn and then we test them at the end of the week and then they move on to the following week. We also have managerial classes and teaching them some of the management techniques and things we have to do and there is a lot of reading required in there. But what's good is that they also bring the knowledge, the fresh knowledge that they have from the University and share with us so we can share back. So it's a mutual sharing back and forth that's really helped us a lot too.

Sandy: So your interns learned many different aspects of the whole foliage plant production while they were here.

Kevin: Well we can tailor to their interests. The last one was interested in doing some research and development program and also propagation so they were working in that particular field and also learning all the other aspects of what we're doing here in a complete package program.

Sandy: What are examples of some graduate student projects that are being done out here at Kraft?

Kevin: Well we have an interesting project now that we're working on is some of the run-off issues that we have and through the USDA and working with a graduate student there they are going and sampling the water and checking and seeing what kind of run-off, what can be done to reduce that so we can really affect the overall industry and how we can reduce that kind of run-off.

Sandy: And I know that new cultivar releases are important to the foliage industry. What kind of interaction do you have with the breeding program at the University of Florida?

Kevin: The University of Florida has a nice breeding program up there. Basically, we need interaction between the University as well as industry. So we try and bridge that gap and so we invite them here and they invite us up there. We go and see what they're doing. They want to know what kind of needs our customers would want to have. For instance, we're growing the Bay program series with the University of Florida and what kind of characteristics would you want that they could possibly breed into the plant. So we're saying size is important or not flowering as much or flowering more and then once they get that information they can go back and work more on what would be good for the industry too. So it's definitely a help for both of us.

FLORIDA SERIES – FINAL COMMENTS

Sandy: So tell us Kevin, what is the single greatest challenge to running a successful greenhouse business?

Kevin: Sandy, I think everything we do is very challenging. When I was younger I used to go around to different nurseries looking for that secret one thing that was going to make us more successful. What we found was that you really need to do a lot of these things correctly all the time.

Sandy: And so that would be your secret to success?

Kevin: Yeah. One of the secrets I think is developing good teamwork and working together as a group of people having consensus management . We try to practice that here at Kraft Gardens. It's getting everyone's input from top to bottom, bottom and up and that way we can make better decisions in what we are doing.

Sandy: Today the greenhouse industry is very competitive. What is the one single thing you might say you wish you knew more about?

Kevin: Well, I think that growing is something, growing a product is something that I wish I maybe studied a little more at school and worked a little harder on. The business aspects are like a lot of businesses, that we're manufacturing products. We are producing products. It could be anything besides plants. But the growing aspects, the environments of plants, and the things that we have to do to make these plants perfect for the environment , that's something you really need to be a constant student of. Looking and learning because there is always new stuff coming out.

Sandy: Where do you see Kraft going in the next ten years?

Kevin: I think Kraft is going to be doing a lot more of the same. But maybe some new and innovative products that we always have. And I think we are going to see some changes in importation rules and maybe we are going to have more of a distribution kind of growing. In other words more plants will be coming in and then be redistributed out quicker.

Sandy: In your opinion Kevin are college graduates generally prepared for something like a supervisory grower position here?

Kevin: Oh yes. The ones that we've come in contact with and have hired here have done a really nice job in coming in and working with our training program.

Sandy: What would you say of the greenhouse and nursery production courses that we offer...what are we leaving out?

Kevin: Sandy I think it's difficult to prepare for every different kind of agricultural aspect that is out there. So they have a nice general base knowledge. What we do find though is there is some lacking in some of their management skills. And that comes with time and learning and I think an intern program would definitely help that and more hands on would work much better.

Sandy: What advice would you like to leave our students?

Kevin: I think that students need to find a passion of what it is they want to do. Whether that is working with indoor plants or exterior plants or with tomatoes but really find out what is really a passion for them, what makes it exciting for them and they will do well.

Sandy: That's great advice.