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Vic & Margaret Ball Internship Report

For three months over the summer of 2017, I got a taste of what it was like to be a section grower in Grand Rapids, Michigan at Neal Mast Greenhouses. It was a bit unsettling at first, being nearly a thousand miles away from home in a foreign place. At the same time I realized all the opportunities that there were to explore and have experiences that otherwise would have been out of reach. I was fortunate to have a roommate that I got along well with, as well as coworkers and bosses that were incredibly friendly and welcoming. Admittedly, while the first week was very mentally rewarding, it was physically challenging, and the first thing I did after my first day of work was go to the store and buy some epsom salt! It wasn't uncommon to walk six to nine miles over the course of the day, and to do a fair amount of lifting of heavy objects. As the days and then weeks go by, though, the body adapts, and I could feel myself becoming stronger, the work becoming easier, and a growing sense of fulfillment. I really got into shape and came to be very pleased with the stamina that I gained on top of all the knowledge I also accumulated.



Over the course of the internship, twelve weeks, I honestly learned more than I would have thought possible. I started out by shadowing growers, helping out, and asking a lot of questions. I was able to get several different perspectives and explanations on how to do things. It was especially informative to be rotated, too, because the sections that each grower were responsible for had differences and were managed in different ways and with varying approaches. To get into some of the specifics of things that I learned, one of the big things, naturally, was irrigation and water management practices. This included how to properly water by hand with the hose, use the computer system to set sprinklers to run in the different zones, manage/fix drip tape, and flood floors manually. Additionally I became familiar with the several different species of plants that the company grows, particularly annuals, and their preferences,



growth habits, and the varying degrees of tolerance to certain kinds of stress. For example, I learned which plants (such as gazania, coleus, vinca, petunias, portulaca, etc.) could be grown dry and tolerate wilt and how to cautiously use such methods to slow down the growth of a crop in lieu of applying chemicals.

I also learned a bit about which chemicals you can and can't apply to certain crops. I learned methods that can be employed to delay or encourage bud set, particularly in the case of mums. We applied a florelle spray at certain intervals to 'reset' buds and we also used panda poly, essentially a large sheet of

plastic, to cover mums so that they could experience longer nights, so to speak, in order to stimulate the formation of buds at the proper time. I took biweekly measurements of mums in order to monitor the rate of growth and accordingly assess its trajectory in meeting the specifications that our customers set forth. It was important, too, especially in the case of mums, to be aware of the growth habits of the particular varieties in assessing the likelihood of the crop filling out or needing chemical to alter growth.

I also set up sticky traps, or bug cards, and learned how to scout for certain pests in the greenhouse, as well as how to recognize signs of disease. I regularly read bug cards and identified and counted the number of particular kinds of insects in order to gauge the severity of infestation. I became familiar with which insects posed the greatest threats and how to identify and attribute damage. At one point I was even able to participate in the company's biological program by applying beneficial bugs over a particular zone using a special machine given to us by Koppert. Something else that I thought was intriguing was, after learning that mites are hard to eradicate through spraying once they show up and also that they are particularly attracted to bean plants, I was tasked with planting about a dozen and spreading them out over several zones to be indicators of the presence of mites should they start to become an issue.



It was interesting to learn and be a part of such methods.

Additionally, while there were several strategies in place to limit the necessity of spraying, I did also become comfortably knowledgeable about the plethora of chemical agents that are used in the greenhouse, both pesticides and plant growth regulators. I learned how they worked, their varying levels of effectiveness, and the requirements associated with their application. I learned how to calculate the amount I needed to apply over a given area of plants and how to use a dosatron injector to apply them. Also, or foremost, rather, I learned about REIs and the safety practices one should employ when applying those chemicals to protect oneself and others in the surrounding area. After a visit to the medical center and desirable results back concerning my ability to wear a respirator mask, I even got some time with the 'big sprayer,' a giant rolling, self-mixing tank equipped with heavy duty spray guns.

Once I'd spent enough time being a helping hand and absorbing necessary information, I was eventually tasked with looking after a section on my own. This is the time that I really came to realize what it was truly like to be a grower. I'd gotten used to being in the company of the other growers as I learned in-and-outs of the job, but when you have your own section, you actually spend a lot of time on your own. I learned that planning ahead is very necessary to make the most of your time. Since the facility was about nine acres, it's a huge time sink if you don't have the materials that you need once you're at the end of it, and also it's important at times to coordinate with the other growers when you're using a lot of water so that everything runs efficiently. Also, critical thinking is a constant. Every week is different. New problems and concerns are constantly arising, and as a grower, you have to oftentimes work things out and come up with solutions on your own. I learned that you have to ask the question 'why' a lot, take it upon yourself to understand the plumbing/where your water is going, and regularly troubleshoot issues. Every Monday, the senior grower would do a walk through with each section grower and discuss the potential need for PGRs or pesticides. I learned to be prepared to have an idea of what potentially needed to be done before the walk so as to have feedback and to become more accustomed to being aware of what was going on with my crop.

I was able to experience other facets of the company as well. Myself and the other two interns were invited along to the Darwin Perennials Day event hosted by Ball in Chicago. We met with plant breeders, representatives from several major companies in the industry, saw new and up-and-coming varieties, and took a tour of Ball's seed lab. I was also permitted two days in the Research &

Development, or Innovation, sector of the company. I participated in the direct sticking and labeling of experimental varieties of mums. I took photographs of trials for documentation purposes, and saw methods used to determine the ability of different varieties of mums to ‘self-clean’, or release dead flowers autonomously in a timely manner. I saw how data was kept in an excel program and information organized into online presentations that could be utilized by the different sectors of the company. I also spent a day just helping out at another facility when there was an issue with leaf browning in a large group of pentas; in order for the plants to be shippable, every affected leaf had to be plucked! I found that the cause of some plant afflictions sometimes just remain a bit of a mystery, although iron deficiency was suspected in that case. I was able to go along with the senior growers on a walk with two different horticultural consultants and hear about informative approaches to growing certain crops or achieving certain results. I was exposed to a huge amount of very valuable information, and I felt privileged to be in the position that I was in.

To sum things up, I had an exceptionally good internship. The Vic & Margaret Ball internship allowed me to explore a career path in depth that I had ultimately imagined pursuing following my college graduation. While the idea excited and still yet excites me, it is my own belief that there really is no way for most people to know if something is really for them until being put in the thick of things by being given precisely this kind of opportunity. I can say genuinely that I found my own experience helpful and enlightening, and I would definitely encourage other students to take part in this program for that reason. I am sincerely grateful to the American Floral Endowment for investing in my future by providing me with this opportunity and also am grateful to Neal Mast for extending their invitation to me and giving me a markedly instructive and worthwhile experience. It would not have been possible if they had not been so generous as to provide housing, and I sincerely appreciate their effort in making it such an easy transition. It has been an enriching experience that I will not soon forget.

Special thanks to the growing team at The Farm! Joe, Daryl, Zach, Nick, Rose, and Manuel. I couldn't have asked for better teachers or a nicer group of people to spend 3 months with.

