

## Report on Campus Garden 2016

After working this summer on a garden for the Hope college community, I learned several things about gardening and logistics that are required to keep it running. I initially waited to write this proposal until the Green Hope club was able to take over the care and maintenance of the garden. It was a major challenge as both of the presidents and founding members of the Green Hope club are abroad for the semester. However, under the leadership of interim presidents, the garden has finally gotten some needed maintenance. I am writing this proposal based on what I learned through my experience, including what works, needs improvement, and suggestions for future gardens.

### What worked:

After a few months of growing, the garden produced a reasonable sized harvest. Radishes, Tomatoes, Squash, Arugula, Sunflowers, Cilantro, Basil, and Cabbages all grew well in the garden. These plants are deemed to have worked well because they all: 1) produced fruit or vegetables, 2) produced a sufficient amount, 3) were relatively low maintenance once planted, 4) were not heavily grazed or damaged by insects, and 5) grew in a relatively short amount of time.

These plants all produced some sort of harvest. They were low maintenance; although they required a good amount of watering during the hot and dry summer, once it started to rain more in the fall, the garden didn't require any additional watering. I found that as long as it rained twice a week, the garden didn't need any extra watering. This is good because it demonstrates that under reasonable weather conditions, the garden will not be a burden to Hope's water bill. The only real maintenance required was weeding the beds which should be done bi-weekly.

Another positive result of the garden was the very small amount of damage by insects and animals. During the construction of the garden I did research on different pests and how to prevent them. Many websites said that the best way to do this was by using pesticides. Although they are effective, the purpose of the garden is to be organic and environmentally friendly. Hence I chose to rotate the crops instead of using these harmful chemicals. The results exceeded my expectations-the garden had very little damage by grazing. For example, I read that cabbage moths are a major problem in Michigan, however the cabbages in the garden are all looking fairly healthy, and their broad leaves have very little damage due to mining or boring by insects. This shows that the simple methods employed, crop rotation in this case, were sufficient in preventing damage to the crops.

The crops also grew pretty quickly. Due to the large amount of time that it took to construct the garden, the plants were put in much later than ideal. However, Almost all of them produced a good yield. The tomatoes fruited repeatedly, to the point where we didn't even know what to do with all of the extras, so I gave them away to friends/members of Green Hope. The radishes all grew very large with very little work. The arugula took off and dominated the entire bed. The cilantro and basil also grew well, and produced large plants. The squashes produced large yellow squash. The cabbages were still growing very well and will likely continue

to do so until they are ready for harvest in November. And the sunflowers produced large bright flowers which added some beauty to the garden as well as attracting plenty of bees for pollination purposes.

In addition to being relatively free from grazing from insects and animals, the garden was also free from vandalism by students. Only a small rabbit fence about 2 ft tall enclosed the garden, yet students respected the space. None of the plant beds had been destroyed and trash hadn't been thrown or left in the space. The small fence remained intact, and students seemed to respect the space.

### **What needs improvement:**

The biggest issue I had with the garden was the amount of time it took to double dig all of the beds. This took around a month longer than I had originally thought it would take. The trenches that were double dug—which is a method in which the dirt is removed, the dirt beneath it is tilled, and sod and compost were mixed with this loosened, tilled dirt—could take days to dig out. They were 4 feet wide and almost 3 feet deep. This was also complicated by the lack of heavy machinery, and the large amounts of garbage that I had to sift through while digging the beds. In retrospect, I wish that I had only dug the trenches to approximately 2 feet or less, because 3 feet was excessive. The root systems of the plants in the garden won't even approach 3 feet, so I think that in any future garden that is built, there is no need to dig the trenches quite this deep. The garden would have benefitted much more if the plants had been planted earlier, so I think that should be a bigger priority in the future.

Additionally, some crops were not as successful as others. Pumpkin vines spread, but didn't produce any substantial pumpkins. Peppers were another crop that didn't really work. They stayed very small and only produced tiny peppers. This could in part be due to the fact that they were planted later in the season, however the other vegetables were planted around the same time and they did much better.

The irrigation of the garden could also use some improvement. The rain barrels were efficient in collecting a lot of water, but the single pallet which held them wasn't tall enough to create enough force to water the plants well. I could hook the hose up to the rain barrels, yet the water that came out didn't have much pressure and so it couldn't fill the drip lines well. I am optimistic that the rain barrels could work very well if they were elevated more properly so there would be greater flow pressure.

And finally, the management of the garden was a major issue. This is due to the fact that the Green Hope club that meant to take it over is fairly new and the leaders aren't on campus this semester. It took weeks to find new interim presidents and for them to have the resources necessary to coordinate an event. However, the event was very successful, with several students showing up. With roughly a dozen students it only took 45 minutes to weed a garden that had not been weeded since my project ended in August. This gives me hope that in the future, if there are as few as 10 students willing to weed the beds twice a month, the garden could very easily be maintained. Another thing the garden needs is access to a lawn mower so that the aisles can be cut down. It really doesn't take a whole lot of work to maintain the garden during the school year, just a few students who are interested and the organized coordination of the Green Hope club.

### **Suggestions for the future:**

Despite several setbacks I still believe that a campus garden would be a valuable addition to our campus. I think that the issues we faced this year could be mediated with greater trouble shooting in the future. Many of the shortfalls we experienced were due to experimentation. Although it wasn't a scientific experiment it was definitely an experiment in what works and what doesn't. And like any experiment there will be tons of issues along the way. However, I believe we are in a much better place to have a garden now, than we were when we started back in May. We finally have a club with members who are interested in the longevity of this garden. I believe that we now have a proper framework for maintaining this garden long term. There are also several faculty members who want to help the garden. Among other faculty, Dr. Lauren Janes from the History Department expressed a lot of interest in a campus garden. Additionally, faculty from the Nursing Department have proposed the garden as a means of therapy for students.

In conclusion, a community garden could be a valuable asset to this campus. With the proper equipment and workforce, the garden could be a great addition to the campus.