Sustainable Food Production Education Internship

Royce Li

Riverside City College Urban Farm

Table of Contents

Acknowledgments

This project was made possible by the Riverside City College Urban Farm and Santa Ana Watershed Project Authority (SAWPA). Special thanks to the Urban Farm advisors Tonya Huff and Preston Galusky for their guidance, determination, and support throughout the internship. I would also like to thank my fellow interns Kathryn, Anastasia, and Keisha for their encouragement, kindness, and friendship. The Community Water Internship is supported through SAWPA's Disadvantaged Communities Involvement (DCI) Program and Proposition 1 funding from the California Department of Water Resources (DWR).

Executive Summary

Upon entering the Riverside City College from the east side of campus, one can notice a beautiful gem marbled by much greenery that has existed since 2012. This is the Riverside City College (RCC) Urban Fam, and its mission is to provide space, guidance, and support for making healthy, sustainable food available to our community through practice and education. Efforts to promote sustainability and community lie at the heart of the RCC Urban Farm's mission, and it was the location in which my internship took place. With the help of all Urban Farm members, I was able to execute and learn about multiple sustainability-based projects. These projects aimed to promote environmental and educational opportunities for the Riverside and surrounding area communities. One of the components of the internship was the management of volunteer and community food distribution days. In addition, two experiments were conducted throughout my internship to gather information about efficient water irrigation systems and home planters. Within the irrigation experiment, fellow interns and I collected and compared data on crop production between plants receiving drip irrigation and mist irrigation treatments. Due to challenging situations experienced at the Urban Farm, the second experiment included data collection and comparisons of crops grown in self-watered planters and those grown in hand-watered planters. Using our observations from the experiments and creativity, the last component of my internship included creating educational materials for our community in the form of brochures and social media.

The internship occurred over a span of a warm season and a cool season, which provided me with more insight on the different crops one might grow during specific days and times of a year. The results from the internship can serve as a resource for small Riverside county farmers

and gardeners who are engaged in growing sustainably and efficiently. The RCC Urban Farm is found within the Santa Ana Watershed, and it is to our community's best interest to conserve our water while growing their own food.

Project Objectives

The scope of work performed throughout the internship involved several components. As the internship progressed, obstacles were presented to the interns and me, which constituted adjustments in our objectives. We worked on meeting all of the objectives throughout the course of the internship, and they can be organized into the following aspects:

Volunteer and Food Distribution

One of the objectives as a Sustainable Food Production Education Intern at the Riverside City College (RCC) Urban Farm was to assist in managing volunteer days. The RCC Urban Farm relies on the help of student and community volunteers to grow and distribute produce to our community. The interns were to offer a safe and welcoming space where we can all interact and sustainably nurture the Urban Farm. In addition, the RCC Urban Farm exists to serve students who are low-income and may face food insecurity. According to a 2018 survey conducted by Temple University, "nearly half of the 2,118 RCC students who participated in the survey reported experiencing food insecurity" (Hernandez, 2020). To aid in reducing food insecurity in the Riverside community, the interns were asked to gather and distribute the sustainably grown produce at the Riverside City College campus.

Irrigation Experiment

As resources become limited in our world, it has been a goal by the RCC Urban Farm to support sustainable efforts on campus and reduce our energy consumption. As stated by the City of Riverside Public Utilities (2013), an average household uses 326,000 gallons of water every year. At the RCC Urban Farm, we wanted to tackle water conservation in one's garden by experimenting with irrigation systems. It was the interns' duty to execute an on-site irrigation experiment designed by our mentors that compared the efficacy of two different irrigation treatments. Since the internship was a year in length, the irrigation experiment was to be carried out for both a warm and a cold season, which involved different crops. Data from this experiment would help distinguish best watering practices unique to the Riverside county climate.

Self-watering Planter Experiment

Three-quarters way into the internship there was a change in management in the RCC Urban Farm. The interns were presented with challenges in usable space to carry out the internship. According to the US Census Bureau estimates (2019), the owner-occupied housing unit rate in Riverside county is 65.8%. The remaining 34.2% are renter-occupied units, which are mostly apartments. With much brainstorming, the interns and managers desired to develop an experiment that addressed the limited gardening space most people living in apartments would face. In this experiment, water efficiency and food production of using self-watering planters to raise crops would be compared to traditional planters.

Educational Materials

The last objective of the internship was to reflect on our internship experiences and gather data to develop and distribute educational materials to our community. We sought to educate other students, faculty members, administrators, and community members about smart food choices, water conservation, and food production. During the Covid-19 pandemic, the interns were tasked to develop educational brochures and flyers that would be distributed to our community. Posts on social media would also be monitored by interns as well.

Project Approach

Volunteer and Food Distribution

For most of the duration of the internship, volunteer hours at the garden were set on Tuesdays from 4 pm - 6 pm, Fridays from 7 am - 9 am, and Sundays from 8 am - 10 am. These hours were set based on interns' and advisors' availability. Volunteer duties included planting seeds or seedlings, weeding, watering, harvesting, turning compost, pest management, and maintaining garden structures. The interns were present during each garden workday to help direct volunteers toward appropriate tasks and perform those tasks alongside the volunteers. Tuesday volunteer days were designated to harvesting produce for distribution the next day on Wednesdays. Interns assisted in passing out the free produce for the community and students at the Math and Science building breezeway at Riverside City College.

Irrigation Experiment

In April 2019, we began setting up our irrigation experiment for warm-season crops occurring over summer and fall. This experiment tested the efficacy and crop production of drip irrigation compared to misting irrigation. I hypothesized that the mist irrigation system would produce more harvest than the drip because the misting system covered more areas where the plants' roots can access water. The experiment involved 4 plots (plots A, B, D, and E) adjacent to a gazebo in the RCC Urban Farm. Each plot was divided in half to receive both drip and mist irrigation systems, and the interns installed the systems according to our advisor's design (see Figure 1). The drip irrigation system consisted of drip lines with 9" emitter spacing. The mist irrigation received additional micro-sprayer installments to the holes of the drip lines. Each plot received eight rows of precisely constructed irrigation systems—four rows of drip irrigation and four rows of mist irrigation (see Figure 2). Additionally, water meters were installed to monitor the water usage of the two treatments, and water pressure was adjusted for all plots to receive consistent water flow (see Figure 3).

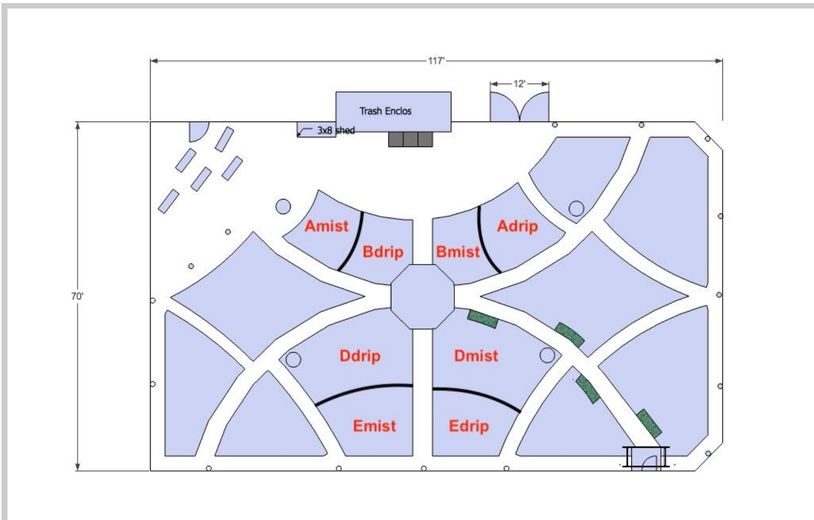


Figure 1. The layout of the irrigation experiment at the RCC Urban Farm

Figure 2. Installed drip and irrigation systems in Plot A drip and Plot B mist

Figure 3. Installed water meters

After installing and testing the irrigation systems and water meters, we began planting the plots with summer seedlings and seeds into their designated rows. The plants were spread out according to their space requirements and to the access of water directly from the emitter holes or micro-spray. The bigger plants usually had a maximum of six plants per row due to space and water requirements. Plot A received radish, zucchini, serrano pepper, and tomato. Plot B received cucumber, eggplant, chard, and tomato. Plot D received yellow squash, chard, jalapeño, and zucchini. Plot E received okra, chard, pattypan squash, and Fresno chili. As a result, each plot would have two sets of the same amounts and types of crops with two different irrigation treatments. The amount of water released by the irrigation system was controlled directly by the interns. Each day, we were designated to run water for 15 minutes in the drip irrigation systems in Plots A and B and 10 minutes in Plots D and E. As the days increased in temperature over the summer, we increased the watering time by five minutes for each system. Using the installed water meters, we were able to record the amount of water usage in gallons over time in the drip treatment. These values were then used to release the same amount of water in the mist irrigation systems to keep the water amount received by the crops as a constant variable.

Figure 4. Summer seedlings planted plot E drip and D mist

Figure 5. Summer crops in Plot B receiving mist treatment

When the crops began growing, the interns began measuring the height and the width of the crops. Each week was designated to a specific row of crops in each plot, and we rotated rows accordingly. This approach began to become inconsistent as plants began to die from excess heat and interns became extremely busy with volunteer duties. As a result, this approach was later improved and revisited, as we planned for winter/spring crops.

The bulk of our data analysis in the irrigation experiment came from measuring the production of edible fruits or leaves by the crops. When a crop was ready to harvest, we also harvested that same type of crop on its corresponding irrigation system. For example, if tomatoes in Plot A drip system were harvested, we harvested from A mist system as well to keep the variances as equal as possible. We recorded the weight and number of fruits/leaves produced by the specific plants for eventual use in data analysis using statistical t-tests. The harvest was then distributed to the RCC community.

In November 2019, we transitioned to our winter crops and used the same methods described above, excluding the installing of the irrigation systems as they were already in place. Based on our mistakes and obstacles experienced with data recording in the summer crops, we were better able to gauge and develop an improved system of managing the experimental plots. For the cool season, Plot A received cauliflower, broccoli, radish, and cabbage. Plot B received broccoli, romanesco, and broccolini. Plot D received kale, dill, and cauliflower. Plot E received spring mix, kale, cilantro, and broccoli.

Figure 6. Winter crops in D mist and E drip

Self-watering Planter Experiment

In December 2019, a change in management occurred at the RCC Urban Farm, which presented the interns with a challenge of access to space. As a result, we developed another experiment that was able to be carried out at home, keeping in mind that it should be beneficial and pertinent to our community in Riverside. Having researched online about self-watering planters and not seeing much data recorded on them, the interns decided to conduct an at-home experiment testing the water-usage, growth, and production of crops in self-watering planters compared to hand-watered planters. A self-watering planter is able to essentially “water itself” by receiving water from a reservoir beneath the soil using a wicking device. The other interns and I wanted to determine if self-watering planters indeed use less water than traditional planters, as advertised by garden enthusiasts. Through much brainstorming, we decided to grow two sets of three different crops— one set receiving self-watered treatment and the other hand-watered treatment. As a team effort, each intern constructed a total of six planters. The self-watering planters were constructed based on instructions found in this online blog post: https://www.littlevictorian.com/how-to-make-a-self-watering-planter/.

For the soil, we used the MiracleGro brand potting soil mix. Once the planters were set, each intern placed their planters onto the east side of our apartments or home (see figure 8).

The crops that we initially started from seed were cucumber, peas, and basil. The seeds were planted in the pots in a circular manner and according to space requirements for each crop to grow (see figure 9). As we continued to monitor sprouting and growth, it was evident that basil was not growing, and we decided to replace the basil seeds with chard seeds. Each day, we monitored water usage of the planter indicated by a water meter. One day of each week was dedicated to measuring the height and width of each individual crop. Produce was harvested as the crop ripened. All the data were recorded for data analysis using t-test tests.

Figure 7. Instructions on how to make a self-watering planter

Figure 8. Sets of planters on the east side of my apartment

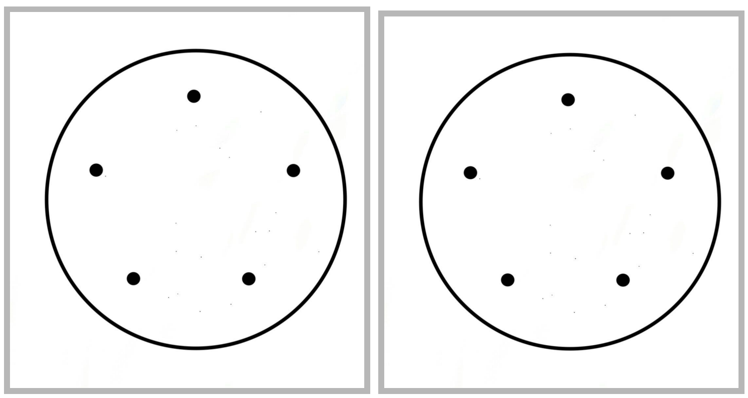


Figure 9. Seed placement for peas and cucumber (left) and chard (right)

Educational Materials

Towards the end of the internship, educational materials about gardening and self-watering pots were produced and distributed to our community. Since the Covid-19 pandemic occurred during this time, it was not possible to conduct any workshops, so we resorted to formulating brochures and flyers using the online platform Canva. I collaborated with fellow interns to work on photoshopping and writing content onto the brochures and flyers. Spanish versions of the flyers were also made because we live in a community where Latinos make up almost half (49.7%) of Riverside county's population (U.S. Census Bureau, 2019). Printing was ordered through FedEx and sent to Riverside City College's for distribution in their bi-weekly free grab-and-go bags grocery bags.

Project Outcomes

This section will analyze data from the two experiments conducted throughout the internship, as this was the bulk of the work performed. Qualitative outcomes will be explained as well. The outcomes of the project can be analyzed in the following sections:

Productivity comparison of RCC Urban Farm Irrigation Systems

The entire RCC Urban Farm produces an average of 390 lbs. of food per month. Between July and October 2019, the plots involved in the irrigation experiment at RCC Urban Farm produced a total of 341 lbs. of food. The drip irrigation systems provided for the production of an average of 50.81 lbs. of food per month and the mist irrigation systems produced an average of 34.56 lbs. of food per month. Statistical t-tests were conducted to compare the total production of drip irrigation against mist irrigation. It was determined that the crops receiving drip irrigation treatment produced significantly more than the ones receiving mist treatment ($p = 0.03$). T-tests were also conducted for the individual plots and crops, and specific differences in production were determined.

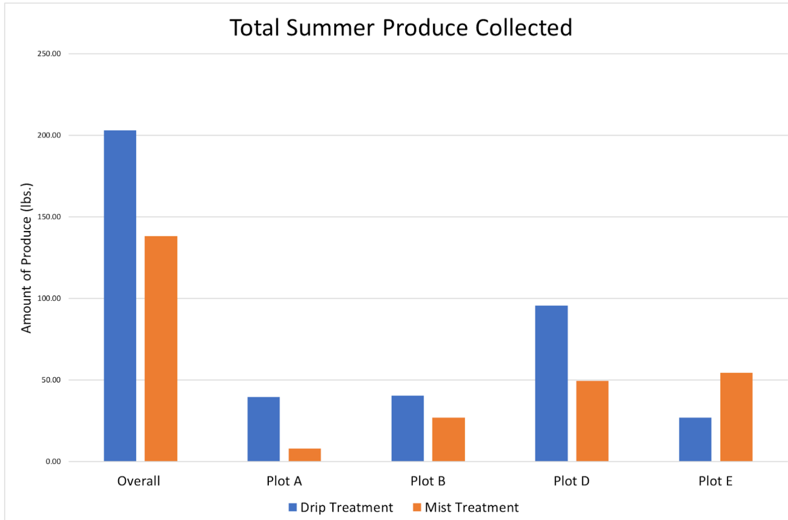


Figure 10. Total summer produce collected from irrigation experiment

In plot A, 38.66 lbs. of food were produced by crops receiving drip irrigation treatment, and 6.67 lbs. was produced by crops receiving mist irrigation treatment within the four summer months. Overall, it was determined that crops receiving drip treatment produced significantly more than those receiving mist treatment ($p = 0.04$). The crops in plot A included radish, zucchini, serrano pepper, and tomato. When the production by crop was individually analyzed, it was found that differences in production were only significant for serrano peppers and tomatoes. It was recorded that the tomato plants receiving the drip system produced 30.25 lbs. of fruit, while the misted tomato plants produced 6.4 lbs. As a result, the dripped tomato plants produced significantly more tomatoes than misted tomatoes by 23.85 lbs ($p = 0.01$). As for serrano peppers, the plants receiving the drip treatment produced a total of 5.12 lbs. of peppers. Meanwhile, the serrano pepper plants receiving mist treatment produced significantly fewer peppers at 0.20 lbs. ($p = 0.00$).

In plots B, D, and E, t-tests demonstrated that there was no significant difference in overall crop production ($p > 0.05$). However, when the crops were individually analyzed, we noted that multiple crops significantly produced more fruit when receiving drip treatment than mist. In plot B, cucumbers and eggplants receiving drip treatment produced 2.03 and 3.78 lbs. of fruit respectively. Their counterparts produced 0.34 lbs. and 1.84 lbs. of fruit respectively, which are 27 lbs. and 31 lbs. significantly less than drip irrigation treatment ($p = 0.03$). As for plot D, zucchini was the only crop that displayed a significantly more production of fruit using drip irrigation (23.28 lbs.) than mist (3.25 lbs.) by 20.03 lbs. ($p = 0.00$). In contrast to the previous plot described earlier, plot E contained chard plants receiving mist treatment that significantly produced more than the plants receiving drip treatment ($p = 0.00$). The misted chard produced a total of 10.62 lbs. of leaves while its counterpart produced 3.5 lbs.—a difference of 6.87 lbs. Although this summer crop displays evidence that plants receiving mist treatment can produce more than drip, the opposite holds more evidence to support the suggestion that plants receiving drip treatment produce more than those receiving mist treatment. See Appendix A for complete data tables.

The irrigation experiment continued for another trial with cool-season crops, and data on crop production were recorded between January and March 2020. During that time frame, the plots with drip irrigation systems accounted for an overall average of 14.4 lbs. of produce per month, and the plots with mist irrigation accounted for an average of 13.1 lbs. of produce per month. The experiment ended abruptly due to the novel Covid-19 pandemic, resulting in collecting insufficient data. As a result, the outcomes from the winter experiment may have differed from the summer experiment. During the cool-season, data gathered from crop production demonstrated no significant difference between overall harvest from drip and mist ($p = 0.40$). Taking in mind that this experiment ended shortly, it demonstrated that each crop (cauliflower, broccoli, radish, cabbage, lettuce, romanesco, and broccolini, kale, dill, cauliflower, and spring mix) produced almost equally the same amount of fruit or leaves regardless of the treatment of their irrigation systems. All statistical t-tests for individual cool-season crop productions suggested a statistically insignificant difference ($p > 0.05$). However, the interns did notice a faster germination rate of lettuce, kale, and radish seeds when receiving the mist irrigation treatment.

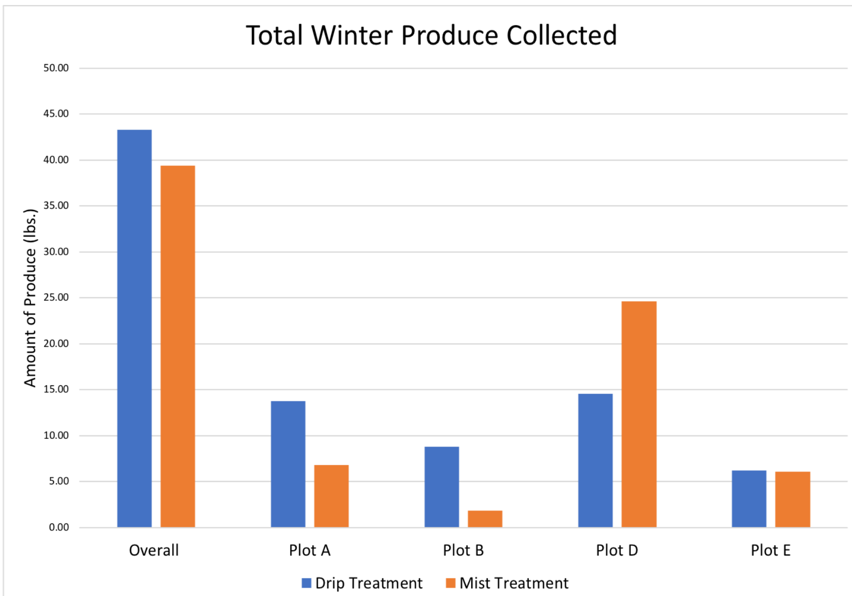


Figure 11. Total winter produce collected from irrigation experiment

Water Usage, Crop Growth, and Productivity Comparison of Home Planters

As mentioned earlier, changes in management occurred at the RCC Urban Farm, and we proceeded with conducting a separate experiment at home comparing self-watered planters against hand-watered planters. Because the novel Covid-19 pandemic occurred shortly after, we took advantage of dedicating our remaining internship time focusing on this experiment at home. The data components consisted of water usage, crop growth, and crop productivity. Water usage was an important component of these planters, as it has been claimed that self-watering planters use less water than traditional hand-watering planters. When compiling all the interns' planter data, the twelve self-watered planters used an overall average of 337 liters of water per day, while the twelve hand-watered planters used an average of 440 liters per day. Although the statistical t-test ruled that there is no significant difference in the water amounts ($p = 0.24$), the hand-watered planters did utilize almost 1.5 times the amount of water of the self-watered planters (see figure 12).

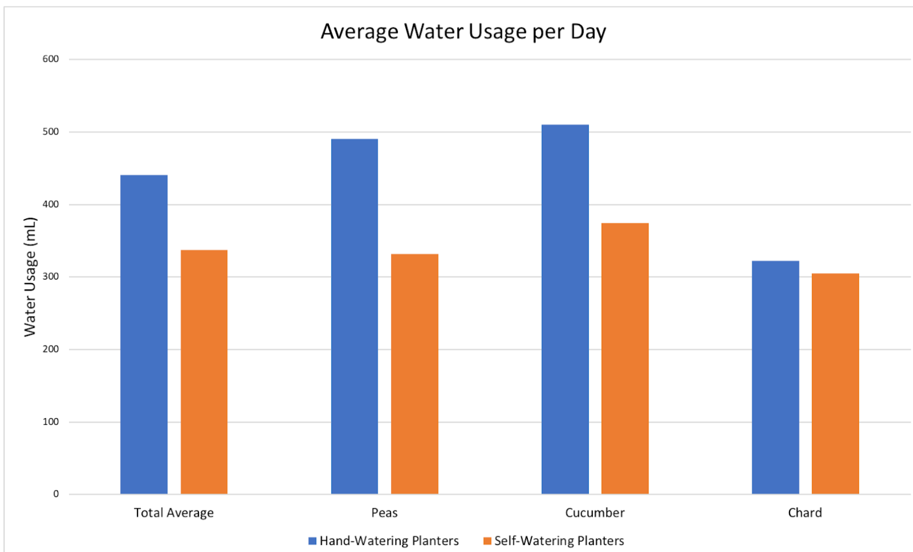


Figure 12. Average planter water usage per day

Between March and June 2020, each week of the planter experiment consisted of examining the growth of the crops using the height or length of the individual crops. With the interns' data pooled together, the growth of each crop of peas, cucumbers, and chard were analyzed according to its treatment of self-water or hand-water (see figure 13). Pea plants receiving self-watering treatment grew at an average of 12.85 cm. per week while the plants receiving hand-watered treatment grew at an average of 12.24 cm. per week. Although the self-watered peas mathematically grew at a faster rate, it was not a significant difference (p =

0.76). Self-watered chard plants grew at an average of 2.65 cm. per week, and hand-watered chard grew at 1.25 cm. per week. Again, although the self-watered treatment contributed to a faster growth rate, it was not a significant difference for chard (p = 0.28). However, for cucumber plants, the self-watering treatment allowed the plants to grow 2.29 cm. per week, and the hand-watering treatment accounted for 7.47 cm. per week. This data set displays a significantly faster growth rate for hand-watered treatment than self-watered (p = 0.02).

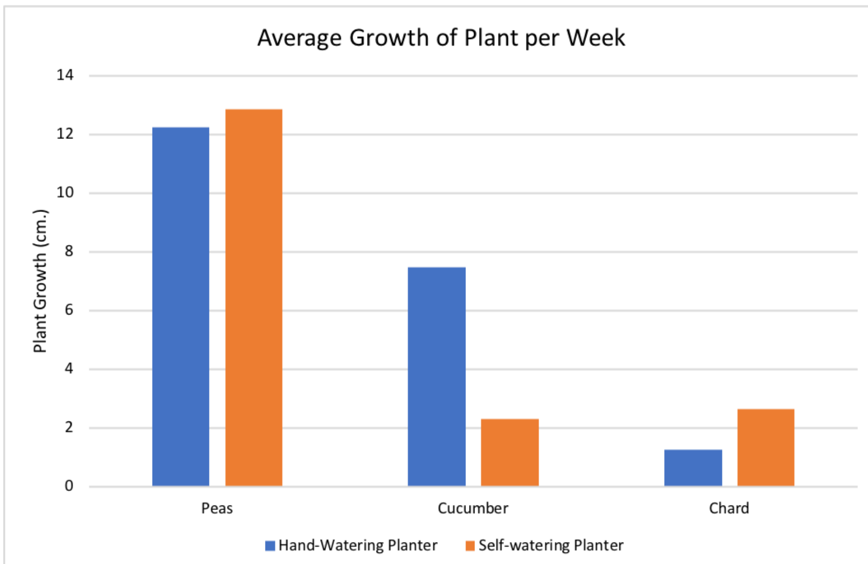


Figure 13. Average growth of plant per week in planters

As the crops matured over the course of the internship, edible fruit or leaf production was also recorded as we harvested in May and June. Together, all self-watered planters produced a total of 2.89 lbs. for two months and hand-watered planters produced 3.35 lbs. T-tests reveal that no significant difference in the amount of food production was noted (p = 0.19). When the production of peas was individually analyzed, self-watered pea plants produced a total of 0.44 lbs. of fruit while hand-watered peas produced a total of 0.34 lbs. Self-watered cucumber plants accounted for 2.36 lbs. of fruit, and hand-watered cucumbers produced 3.00 lbs. of fruit. Also, the only amount of chard recorded was 0.09 lbs. of chard leaves from the self-watering planters. T-tests conducted for individual crops showed no significant difference for all crop production comparisons ($p > 0.05$).

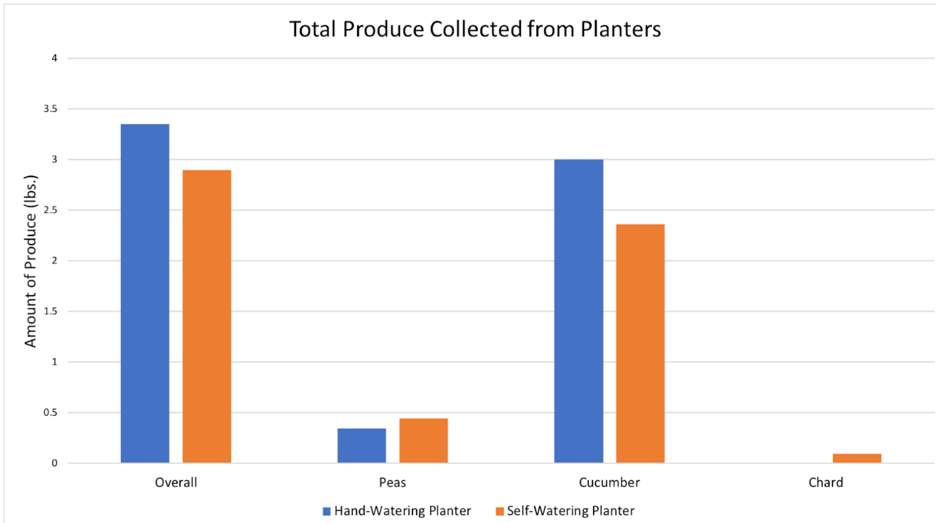


Figure 14. Total produce collected from planters

Educational Materials

The outcome of the production and distribution of the educational materials was successful. Two brochures were made with the titles "How to Make a Self-Watering Pot" and "Benefits of Gardening" both in English and Spanish. See Appendix B to view brochures and flyers. Two-hundred of each flyer was printed and they were folded and placed in grab-and-go grocery bags distributed by Riverside City College Student Activities Services. A video of how to make a self-watering planter was also made by intern Anastasia Duane, and it was posted on several social media pages, Youtube, and the RCC website at the following links:

https://www.youtube.com/watch?v=7-1S097-7P4&t=7s

https://www.rcc.edu/asrcc/Pages/Food-Grant.aspx

Conclusion

After analyzing the data from the irrigation experiment, it was concluded that there was a statistically significant difference in crop production between drip and mist irrigation systems for summer crop production, including tomatoes, serrano peppers, cucumbers, zucchinis, and eggplants. Based on the p-value of 0.04, the plants receiving drip irrigation treatment overall produced more harvestable fruits or leaves than the plants receiving mist irrigation treatment though both treatments received the same amount of water. These findings did not support my hypothesis that the mist irrigation systems would provide plants with efficient water exposure, leading to more crop production. The crops receiving drip treatment may have increased productivity because of the water that pools directly onto the plant's roots. Results from this experiment would be valuable to gardeners or farmers in Riverside who are interested in which irrigation system best yields the most produce.

Although the t-tests conducted for the home-planter experiment displayed mostly no statistically significant difference in water usage, plant growth, and productivity, viewing specific numbers within the data can reveal additional conclusions. Water usage was 1.5 times less in self-watering planters than hand-watering planters. This finding supports my hypothesis that self-watering planters require less water usage than hand-watering planters due to the access of a water reservoir. Self-watering planters also contributed to an overall faster growth rate for peas, cucumbers, and chard. However, crop production for peas and cucumbers in hand-watering planters yielded more than self-watering planters. In order to conduct more rigorous and reliable data analysis on this experiment, it would be beneficial to increase sample size and length of experiment. Nonetheless, depending on the goals of a small-scale gardener or farmer, they can mix-and-match to utilize self-watering planters or hand-watering planters to fit their production or sustainable ideals.

The RCC Urban Farm Sustainable Food Production Education project provided me with an invaluable experience. When I started out in the internship, I had very little gardening experience. The RCC Urban Farm community welcomed me and helped me learn the beautiful craft of fostering life in plants that fed our student community. The Urban Farm further instilled in me the drive to promote sustainability in a world that is currently experiencing climate change. My role as an intern has been such a rewarding experience, as I am able to see a direct impact made from my contribution to the greater cause of sustainability and food production for our community. Because of the internship, I have honed my skills to become a leader, agriculturist, researcher, and community member. I hope to further involve myself in sustainability research in the future and share my findings and experience from the Sustainable Food Production Education internship.

Appendix A: Summer Experiment Results

	Number of samples collected throughout experiment	Average weight of all samples collected (oz)	P-value	Statistically Significant? (Y/N)
A Mist Radish	3	0.00	0.1717	N
A Drip Radish	3	1.23		
B Mist Cucumbers	6	5.50	0.0366	Y
B Drip Cucumbers	6	32.50		
D Mist Watermelon	6	73.83	0.1947	N
D Drip Watermelon	4	103.88		
E Mist Okra	77	1.18	0.7420	N
E Drip Okra	61	1.25		
A Mist Zucchini	3	0.33	0.0714	N
A Drip Zucchini	3	15.50		
B Mist Swiss Chard	73	137.75	0.1165	N
B Drip Swiss Chard	84	225.70		
D Mist Bell Pepper	31	1.95	0.2715	N
D Drip Bell Pepper	31	2.48		
E Mist Swiss Chard	84	2.02	0.0007	Y
E Drip Swiss Chard	84	0.71		
A Mist Serrano Peppers	29	0.11	0.0000	Y
A Drip Serrano Peppers	29	2.83		
B Mist Eggplant	20	32.00	0.0015	Y
B Drip Eggplant	20	84.50		
D Mist Zucchini	19	2.74	0.0002	Y
D Drip Zucchini	19	19.61		
E Mist Patty Pan Squash	10	18.87	0.1775	N
E Drip Patty Pan Squash	15	12.70		
A Mist Tomato	29	4.66	0.0136	Y
A Drip Tomato	22	16.69		
B Mist Tomato	35	82.56	0.1814	N
B Drip Tomato	54	298.60		
D Mist Jalapeno	42	1.95	0.1924	N
D Drip Jalapeno	50	1.37		
E Mist Fresno Chili	50	1.21	0.2125	N
E Drip Fresno Chili	15	1.68		

Appendix B: Educational Brochures

Looking for a low maintenance planter? Trying to reduce plant water usage? Going on vacation and abandoning plants? Try a self-watering planter!

ABOUT THE RCC URBAN FARM

The mission of the RCC Urban Farm is to provide space, guidance, and support for making healthy, sustainable food available to our community through practice and education. Using a sustainability approach and methods, current interns are working on an experiment to compare the efficacy and produce yield between a self-watering planter and a hand watered planter. So far, with the data recorded, we suggest that self-watering planters may require less water than hand-watering planters due to an accessible water reservoir. Details of this experiment will be published at the end of July.

HOW TO MAKE A SELF-WATERING PLANTER

RCC URBAN FARM

MATERIALS

-A planter with no holes on the bottom
-Plastic planter saucer
-An empty 1 or 2 liter bottle
-About 2ft of PVC
-A drill
-A hand saw
-Potting soil & plants/seeds
-Marker

STEP 1

Drill many holes (about 5/8 in) in the bottom half of the water bottle. This is the wicking device. Next, trace the bottle in the middle of the saucer and cut around the outline. The bottle will sit in this hole.

STEP 2

Press the saucer into the bucket as far as it can go. You may need to cut down the saucer to fit. Place the bottle into the hole so it sits flush with the saucer. Mark the bottle just above the top of the saucer. Then remove and cut the bottle along that line with a hand saw.

STEP 3

Remove the saucer. To make the PVC pipe into a water tube, place the PVC pipe anywhere between the bottle hole & the edge of the saucer. Trace the outline of the PVC pipe and cut a hole for it to fit through.

STEP 4

Now place the PVC pipe in the planter. Cut the pipe so only 2-3 in of pipe sticks out above the soil line. Once you have the pipe at your desired height, put the saucer, bottle, and PVC pipe back in the pot. You should have a reservoir for water at the bottom.

STEP 5

Add a drain hole by drilling into the side of the planter just under where the saucer rests. This prevents overfilling of water. To finish, fill the pot with soil. Rest the PVC watering tube so that it sits at an angle to make adding water easier. Fill with water by pouring it into the PVC tube until you begin to see water flowing out of the drain hole. Add seeds of seedling of your choice. You're done!

English Version

¿Buscas una maceta de poco mantenimiento? ¿Intentas reducir el uso del agua? ¿Vas de vacaciones y dejarás abandonadas tus plantas? ¿Por qué no usas una maceta autorriego?

INFORMACIÓN SOBRE LA GRANJA URBANA

El objetivo de la Granja Urbana de RCC es de proveer el espacio, la guía y el apoyo para hacer comidas saludables y sostenibles para nuestra comunidad. Actualmente, los pasantes están llevando a cabo un experimento usando métodos sostenibles para comparar la eficacia y cantidad de cosecha entre una maceta típicas y una maceta autorriego. En este momento, con los datos documentados, nosotros sugerimos que las macetas autorriegos puedan requerir menos agua que la maceta típicas porque un depósito de agua existe. Detalles del experimento serán publicados al final de julio.

CÓMO INSTALAR UNA MACETA AUTORRIEGO

LA GRANJA URBANA DE RCC

MATERIALES

-Una cubeta sin hoyos en el fondo
-Un platillo de plástico
-Una botella de 1 o 2 litros
-2 pies de tubo PVC
-Un taladro
-Un serrucho pequeño
-Tierra
-Plantas o semillas
-Un marcador
-Una tijera

PASO 1

Taladra muchos hoyos (como de un tamaño de 5/8 pulgadas) en el fondo de la botella. Esto sería el sistema de absorción. Después, traza la forma de la botella en el centro del platillo de plástico. Con las tijeras, corta sobre la raya que hiciste.

PASO 2

Mete el platillo en la cubeta y presiona hasta que no pueda más. Es posible que necesites cortar el platillo para que quepa. Pon la botella dentro del hueco. Marca una línea en la botella justo arriba de la superficie del platillo. Luego, saca la botella y córtala por la línea con el serrucho.

PASO 3

Saca el platillo. Para que quepa el tubo PVC en el platillo, coloca el tubo entre el hoyo para la botella y el borde del platillo. Traza el borde del tubo con el marcador y corta sobre la raya.

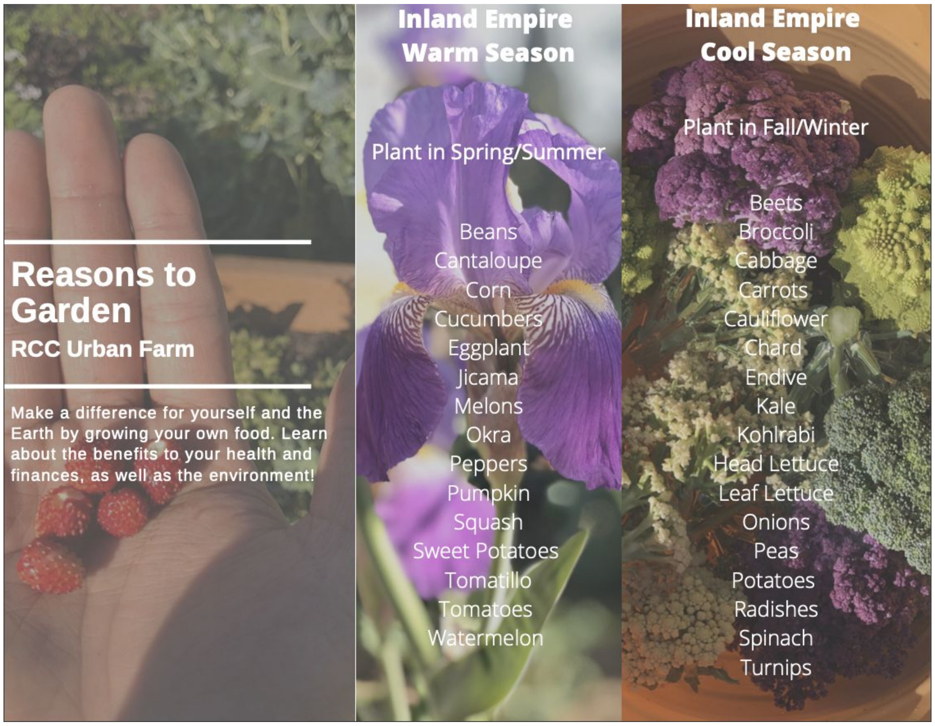
PASO 4

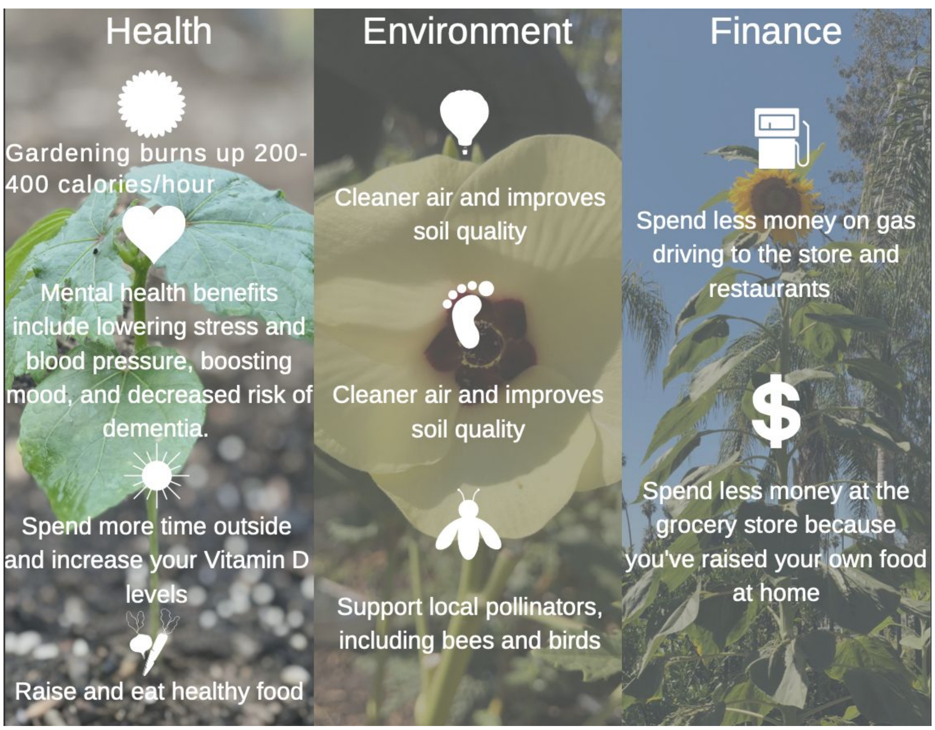
Ahora, coloca el tubo PVC en la cubeta. Corta el tubo para que sólo 2-3 pulgadas del tubo sobresalgan sobre la maceta. Después, organiza el platillo, la botella y el tubo como se muestra arriba. Deberías tener un depósito para el agua en el fondo de la maceta.

PASO 5

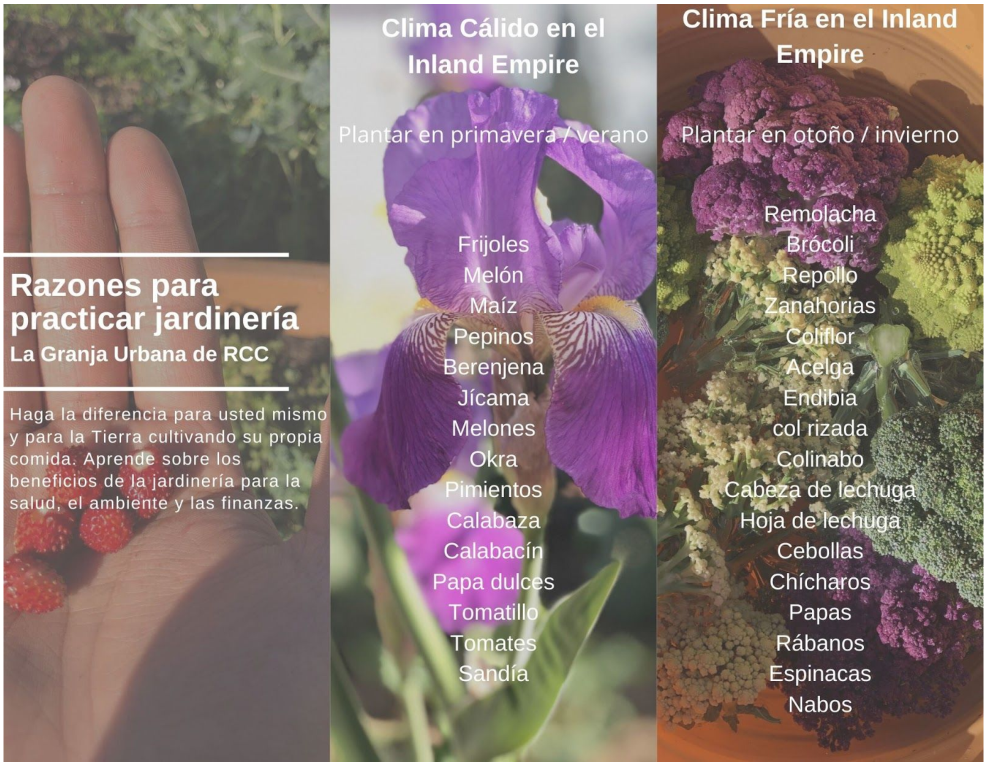
Taladra un hoyo en el lado de la cubeta justo abajo del platillo. Este desagüe evita que el depósito se llene demasiado. Finalmente, llena la cubeta de tierra. Arregla el tubo en un ángulo para que sea más fácil cuando le eches agua. Llena el depósito de agua por el tubo hasta que empieces a ver salir el agua por el desagüe. Agrega semillas o plantas a tu gusto. ¡Ya estás listo!

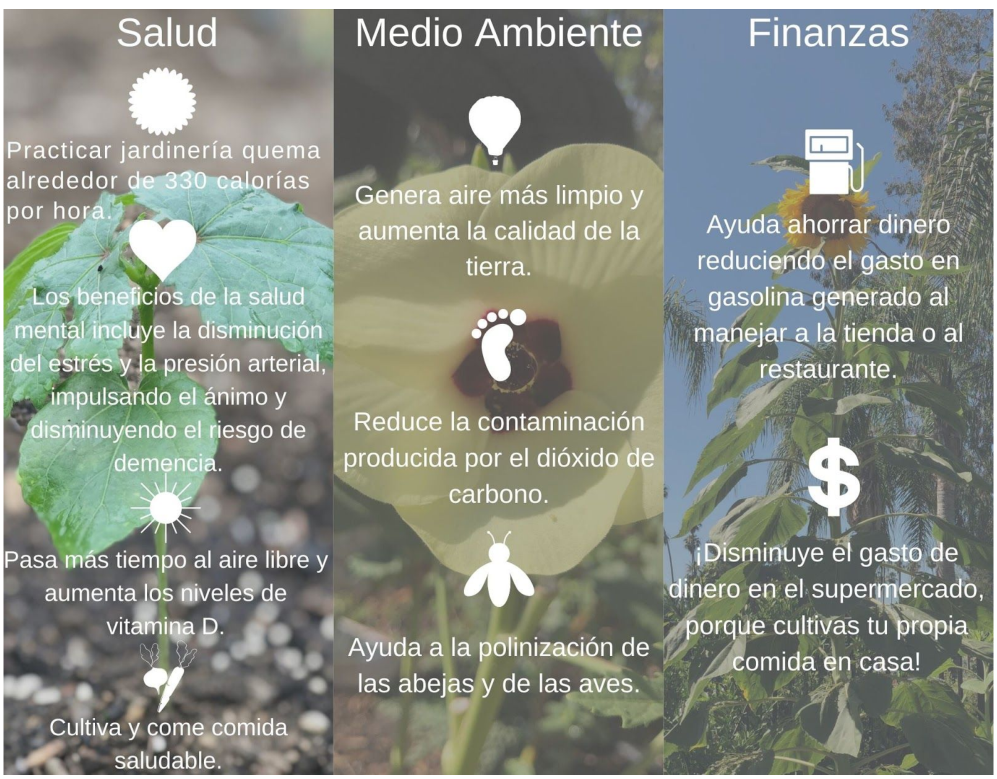
Spanish Version





English Version





Spanish Version

References

Hernandez, D. (2020, March 10). *RCC Awarded a $2.1 Million Grant to Aid Homeless and Housing Insecure Students.* Riverside Community College District. https://www.rccd.edu/news/Pages/RCC-Awarded-a-2-1-Million-Grant-to-Aid-Homeless-and-Housing-Insecure-Students.aspx

Riverside Public Utilities. (2013). *Water Conservation Tips.* https://riversideca.gov/utilities/water-save.asp#:~:text=On%20average%2C%20here's%20how%20much,Driveway%20cleaning%20(150%20gallons)

United States Census Bureau. (2019). *QuickFacts Riverside County, California*. https://www.census.gov/quickfacts/riversidecountycalifornia