

# Urban Gardens: Sowing sustainable thinking

## INTRODUCTION

Urban gardens are those cultivated in a collective or domestic space within urban areas. It is an activity that encompasses urban agriculture, whose main objectives are to facilitate the distribution of food in cities, reduce the consumption of pesticides and contribute to the environment. In addition, they serve as a form of occupational therapy, adding a pleasant moment among families during this pandemic period, and can also contribute to their economy and the maintenance and / or improvement of health along with disease prevention.

The intent of the project is to show some experiences in the construction of sustainable home gardens and how they influence life in a positive way. It is also expected that this project will be expanded to poor schools and communities in Salvador-BA, in order to strengthen the relationship between the school and the community. This will enable the possibility of collective reflection and the development of organic home garden cultivation, whose production can be destined for the consumption of all.

## OBJECTIVES

The objectives of this project are: to implement the pilot project for a domestic and sustainable vegetable garden for some crops; encourage the practice of sustainable horticulture in homes during this pandemic period; strengthen the family relationships through the cultivation of plants, while also improving food quality; produce decorative objects; encourage citizenship and responsibility for the environment through the reuse of disposable materials.

## METHODS

The methodology used to support this research project was the bibliographic review, followed by the practical experience of home planting by the team members. Recycled materials were used, such as pet bottles, cans, plastic vases, milk cartons, yogurt cups, etc.

In addition to the soil, vegetable husks and other organic foods were used for fertilization. The use of some natural elements such as sunlight and rainwater was also of paramount importance.

Irrigation frequency:

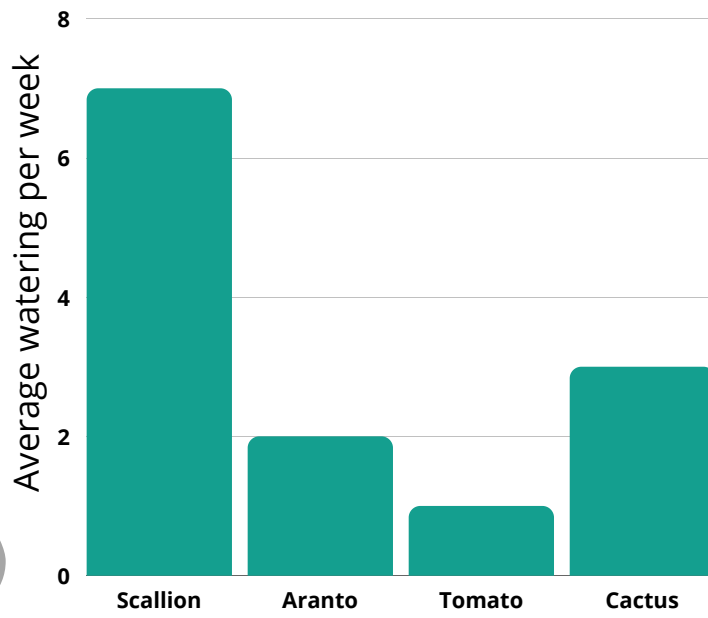
- Scallion watering - Every day
- Cactus watering - Every 2 days
- Aranto watering - Every 4 days
- Tomato Watering (nutrient solution refill) - Every 7 days

Graph 1: Average irrigation experience (Avg = 3.25)



Source: Created by the author

Graph 2: Frequency of Irrigation (daily)



Source: Created by the author

## RESULTS

Among the plant cultures developed by the team, the following stand out: Cacti, aranto, scallions, tomatoes, St. George's sword and Indian mint.

Next, the experiments with planting scallions, aranto, cacti and tomatoes will be detailed.

### Scallion

The roots of the scallion seedlings were planted in a pot with good quality soil, and the pot was located in a place where the sun did not directly hit the plant. Following that, it was watered every day in the correct proportion to ensure it grew healthily.

Thus, the harvest was made through a cut at the base of the scallion to avoid drying the stems and to provide a healthier sprouting. As a result, a bundle of scallions was obtained every time it reached an appropriate size.



Figure 1: Scallions, May 25, 2020. Created by the author.

### Aranto

The aranto was cultivated by two researchers.

First experience:

A priori, the organic soil was prepared, watered and fertilized with egg shells, fruits and vegetable scraps. Then the 4 cm seedling was relocated to a container with water. After this process of adapting the plant to the container, meaning, the growth of its roots, it was allocated to the container which was previously prepared.

In this way, every 4 days its watering was done with a water sprinkler. After two attempts, it was the method that best fit the development of the plant. In addition, sun exposure was carried out every 5 days at times that were not conducive to damaging its leaves - at 17:00. Finally, its growth and development were notorious after the entire care process.



Figure 2: Aranto, 12 March 2021. Created by the author.

Second experience:



Figure 3: Aranto, March 12, 2020. Created by the author.

In a container, a small leaf of aranto was planted along with a 2 cm seedling of cactus. After being exposed to the sun for three months, there was a rapid development of both plants. In addition, it was noticed that with the accumulation of water from the cacti, the aranto grew strong and green leaves while the thickness of the cactus, when compared with pots that had only cacti, was greater.

### Cactus

This was planted from four seedlings with 3 cm each, placed in pots with organic fertilizer, and further fertilized with eggshells, potatoes and bananas. There were four pots: two were placed in a location with availability of sunlight and another in a location with low light. In addition, every three days each unit was watered with 50 mL of water. Thus, with care, the development was noticeable, even with the difference in size, as the cacti exposed to the sun were 6 cm larger compared to the location with less light and with a greater number of buds.



Figure 4: Cacti, March 11, 2021. On the left, without light. On the right, exposed to the sun. Created by the author.

### Tomato

This plant was nurtured via hydroponics, through root submersion in liquid nutrients. First, the seed was cultivated in a phenolic foam cube half-submerged in water and left in the dark for 5 days, until the first leaves were out. Then, with the first root developed, it was transferred to a yogurt cup that had its bottom cut out. The phenolic foam with the sprout was inserted into the hole, leaving the root hanging, half submerged in the liquid nutrient (a mix of micronutrients and N-P-K, Nitrogen-Phosphorus-Potassium).

The vase was then placed in a location with low lighting, to prevent the sun from heating the water and injuring the plant. After one and a half months, the first buds sprouted, requiring frequent shaking of its flowers for pollination. Once the plant reached the two-month mark, the flower petals had fallen off and small tomatoes were growing in their place. Only one batch of tomatoes was harvested from this plant. Unfortunately, the plant developed a fungus in its root system and died after it reached its fourth month.



Figure 5: Tomato, August 5, 2020. Created by the author.

## CONCLUSION

Environmental problems have grown sharply in recent times. With this in mind, the initiative to create the project aimed to generate a broad view of the benefits of a community garden.

The experience of planting during the pandemic was of great importance to "bring families closer", in addition to allowing the consumption of good quality products. It is worth mentioning that it was essential to this project to understand and verify the plant's operating system.

In short, this research recognizes the importance of environmental awareness. Additional studies will be carried out for a better development of planting methods. In this way, the work presented shows precise results on how to consciously plant inside houses / apartments, emphasizing that it is not necessary for plantations to be carried out only in large spaces.

The next step of this project is to develop planting in schools and communities in Salvador-BA. For this, the researchers are planting other crops and producing seedlings to be donated.

## REFERENCES

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