Benefits of hydroponics to the soil, water and land research paper example

Environment, Plants

Introduction

The original goal of this report is to provide essential reasons about why such business might have necessitated in our area and how people can have varieties of fresh produce without any seasonal barriers. Populations of these cities are growing day by day, and most of the lands are going under housing projects, so the farming lands undergo destruction for housings. Hydroponics is the solution. It can benefit us with so many other factors such as, no need for workers, no need for lands, no needs for large investments and (etc.) (Guffey& Loewy, 310).

Land and water are becoming limited resources, resulting in less farmland and more draft to our nature. Hydroponics is a method of nutrient solution farming where nutrient solutions are used to grow plants in the absence of soil. It is why it can be done in the absence of enough land, and in town apartments. People can practice hydroponic farming in vacant parking lots, rooftops and apartments. This type of farming helps to deal with the limitations provided by bacteria laden foods and expensive distribution. Worth noting is that yields will be maximized hence flexibility in growing into the off-season (Guffey& Loewy, 311).

Dr. W. F. Gericke, who named it hydroponics after two Greek words, water, and work, has done hydroponic farming for many years in the US since it came to public attention in 1937. All this time the farming was not publicly popular since there was no lack of land for cultivations. During World War II, soldiers who were in the Pacific could grow their vegetables hydroponically and be able to feed themselves. Currently in North America, greenhouse

vegetables that grow hydroponically account for 90% of all produce. The system presented by hydroponic gardening is best suited to offer recycling of water and nutrients. The result is a reduction of resources to be used for growth of food (Guffey& Loewy, 312).

Recycled hydroponic systems are very good because they help to reduce water usage by as much as 10%. This is especially useful in areas that are very dependent on irrigation. The system is also free of pesticides, and one can use as little as ¼ of all fertilizer used in a soil garden. However, large amounts of water are required for hydroponic farming. In some places where people do not want to suspend their plants above water, sand can have usage as a means to hold the roots of the plants. Some other neutral mediums are also used for the same purpose (Guffey& Loewy, 313).

Hydroponic farms are very efficient and they can produce about the same amount of produce using up 1/5 of the space. This can prove very efficient in feeding over-populated regions, with people growing food on rooftops or in a basement.

Reduced water consumption

A lot of water is used up for irrigation in the soil. This water is never used up completely for growing plants, but most of it is absorbed in the soil. This is why one has to consider hydroponic solutions because they utilize a fixed amount of water for a specific period without wastage. Although hydroponic farming may require large amounts of water at first, this is far less than the water wasted to the soil during irrigation and especially in the dry season. While in hydroponics one can give a plant the amount of water and nutrients

it exactly needs, in soil it is more difficult. This is because there are other consumers of the nutrients and water like weeds and other unwanted plants. Watering of plants through the inert medium is done using a timer to ensure that only the plants use a needed amount of water. This could go a great way towards saving water and especially in places where it is scarce (Savage, 40).

ELIMINATING PROBLEMS RELATED WITH LAND AND SOIL AND IMPROVING LOCAL AGRICULTURAL PRODUCTION

The advantage with hydroponic farming is that it does not need soil or vast amounts of land. You can use anything as a medium to grow your plants in a hydroponic solution. This could be gravel, sand, vermiculite, Rockwool or coconut fiber. The plants can also be grown suspended in water in not growing medium in case it is not available. As such, one can grow huge amounts of food in small spaces, and they can practice agriculture in rooftop gardens. This form of farming is the most sustainable in urban setting. Suddenly people who live in apartment blocks can grow their own vegetables, and provide the excess to the local restaurants. With the appalling population growth rate being seen today, soon there will not be enough land for everyone, and people will be forced to live in these apartment blocks. Hydroponic farming is the most sustainable way for them to have an endless supply of food wherever they are (Savage, 35).

Perlite, which is a naturally occurring volcanic glass or rock, is also used for hydroponic farming. Its white pearl-like appearance makes it very popular for growing plants inside residences since it adds to the esthetic value of the

home. It can be used as a medium to grow herbs like Kush and lavender that bring fresh air to the house and are used for aromatherapy.

KINDS OF SEASONAL PRODUCTS PROVIDED BY HYDROPONIC SYSTEMS

Using hydroponics, one can grow a very wide selection of crops. Most commonly grown are vegetables like the greens (kale, spinach, and collard greens), tomatoes, and lettuce. Beans, artichokes, broccoli, asparagus, and beets are the various vegetables that one can grow in this kind of system. One can also grow Brussels sprouts, cauliflower and peas. Plants that normally grow beneath the soil like carrots, potatoes, and parsnips, onions and leeks can also be grown. Crops that grow to become vines, for example, cucumbers and watermelon can be grown but they are going to take a lot of space in the garden.

Herbs, peppers, cucumbers, and strawberries are also very commonly grown since they are in high demand in the restaurants. Mixed vegetables and herbs are also in high demand and so people grow them and sell to restaurants. Some of the herbs that can grow well in your hydroponic garden include coriander, chives, dill, oregano, rosemary, sage, mint, fennel, marjoram, cilantro, and chamomile. All these make for good spices when cooking and are used for alternative medicine. Other herbs that can grow in this kind of garden include parsley and thyme. These make excellent garnishes to dishes, and many restaurants keep looking for them (Koerselman, 36).

Flowers also do exceptionally well in hydroponic gardens. You can have an array of them in different colors to make your home more colorful. They can

be grown in terraces and on balconies to make the home look livelier. The flowers can undergo planting as seeds or implanted when the seedlings are big enough. Those that use cuttings like roses can also be grown in a medium like sand or gravel (Koerselman, 36).

TENDENCIES: Current trends towards organic and fresh vegetables

As people look for more healthy foods, organic food is trending. People just do not want to eat chemical laden imported vegetables anymore, and instead want to grow some in their gardens. This food is also trending in local restaurants that make a point to brand organic food in order to attract customers. The advantage is that plants grown in hydroponic solutions grow at three times the rate that plants grown in soil do. This makes it possible to have more produce in the same time span that one would use to grow plants in soil.

The recent influx in demands for alternative medicine also makes herbs very marketable in the society. People also want to have some herbs like lavender and cannabis in their home as it helps in aromatherapy and other forms of alternative medication. Herbs are also used in teas to reduce pain and inflammation for people who have long-term illness (Gogolewski & Komisar, 54).

Figure 1: Increase in consumption of organic fruits and vegetables in a span of ten years

Figure 2 and 3: The chart shows organic food sales in fruits and vegetables category in 2002 compared to 2005

2002

2005

(Dimitri & Oberholtzer, 2-5)

Figure 4: The distribution of fruits and vegetables in the organic produce market in USA

(Dimitri & Oberholtzer, 2-5)

SOURCES OF FUNDING FOR A SMALL BUSINESS VENTURE

Many sources exist for small business ventures and especially for people willing to work hard at it. One only needs some capital to get started especially if it is farming. The produce will keep multiplying, and the returns will always be good. One can get capital from parents or look for government grants and loans to fund the small venture. Some people also come up with groups where they collect their income and help each other in turns to raise capital for their ventures (Gogolewski & Komisar, 56).

Growing crops in a hydroponic system will probably cost more than growing in soil. However, this will be a worthy venture and especially in urban areas since people are always willing to pay more for fresh out of the garden vegetables and herbs. You can start out with a venture that does not require any capital so that you get savings to start your farm. This venture can be in form of baking foods in the house, making money online and doing casual jobs. Once you gather enough money to set up a small green house then you are good to go. People will also use the space they have at home by setting up vertical columns where they can grow tomatoes and herbs.

Figure 5: This is the average cost of setting up a standard greenhouse in the

United States:

(Savage, 213)

One can also write a proposal and present it to interested investors for funding. There are plenty of people out there who need an investment venture but have no idea where to start. Starting a partnership with such people can help one to be able to set up a very successful business venture even without capital. One needs to have established a ready market for their produce beforehand so that they do not run into losses. Farm produce will always have consumers and this is a safety point in knowing that what you produce will always be in demand. Growing vegetables and fruits that are only available in certain seasons can help one to be able to ensure that they always have a market. The advantage of hydroponic farming is that while other people wonder how to get land to cultivate, you can use the space that is available to you for your farming ventures.

Conclusion

The United States organic food industry has grown exponentially. From revenue of US$ 3. 6 billion in 1997, now the industry generates over US$ 21. 1 billion in 2008. All retailers are serving wider varieties of food than was the norm with organic food being branded, as it is desirable to people seeking health diets (Dimitri & Oberholtzer, 2-5).

The increase of demand for organic and fresh produce has also contributed to this growth. Although hydroponic farming has always been around in the country, it is only just gaining momentum now. This highly beneficial business venture has a bright future as more and more people move to urban centers and adopt urban agriculture. Now they can grow vegetables

on a small scale on rooftop gardens or herbs inside the house (Dimitri & Oberholtzer, 2-5).

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