

FARMING USING GUNIA

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Teach through expounding of themes.

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Summary/Abstract

Gunia gardening, also known as sack farming using sisal sacks, is an innovative approach to agriculture that addresses food insecurity, especially in urban and resource-limited areas. This resourceful farming technique involves growing crops in sacks filled with soil compost, offering a sustainable solution to food production challenges. Gunia gardening maximises space utilisation, making it ideal for densely populated urban environments where land availability is limited.

One of the key advantages of Gunia gardening is its ability to repurpose materials and reduce waste. By using sacks, which are often discarded after use in packaging or other industries, this method promotes sustainability by turning waste into a valuable resource. Additionally, sisal is a natural fibre that decomposes harmlessly at the end of its lifecycle, minimising ecological concerns.

Furthermore, Gunia gardening can help mitigate the impact of climate change by promoting local food production. By growing food locally, Gunia gardening reduces the carbon footprint associated with transportation and storage of food. Additionally, by utilising reusable materials and reducing waste, Gunia gardening contributes to a more sustainable and environmentally friendly agricultural system.

Research questions

1. How does gunia farming impact the environment?
2. Is gunia more sustainable than normal farming?
3. Does gunia farming perform well in limited spaces?

Hypothesis

1. Gunia farming is a more sustainable way to farm.
2. Gunia farming a space saving way to farm.
3. Gunia farming has a positive effect on the environment.

INTRODUCTION

Food is one of the greatest concerns in the world today. There are many places affected by the scarcity of food.

The problem of food insecurity and scarcity are linked to one of the United Nations sustainable development goals No.2 Zero Hunger.

Due to the food insecurity that is currently going on around the world, our team has come up with the project of Gunia gardening, gunia is a word in the Swahili language which is translated into sisal sacks or sacks.

Gunia gardening is a vertical farming technique that involves growing crops in sacks filled with soil compost. This method maximises space utilisation making it sustainable for urban areas and slums where land availability is limited.

Urban areas are characterised by high population density, limited access to resources, and challenges related to food security. In this environment, innovative agricultural techniques are essential to address the nutritional needs of residents.

Farming in these kinds of places is nearly impossible as the overcrowded areas consist of congested housing and narrow pathways.

The readily available Gunia (sacks) provides us with a sustainable solution to the matter of food insecurity. These plastic sacks contribute to some of the waste issues going on in many places and are thrown away. We think using these Gunias for farming is better than throwing them away and contributing to the waste issues.

Description of the problem

Food insecurity refers to the lack of consistent access to enough nutritious food to lead an active and healthy life.

It encompasses a range of situations, from individuals or households experiencing occasional disruptions in their food supply to severe and chronic hunger. Food insecurity can result from various factors, including poverty, unemployment, low wages, inadequate social safety nets, high food prices, limited access to nutritious foods, and environmental factors such as droughts or natural disasters.

As well as that, it maximises yield and meets food demand, farmers may resort to intensive agricultural practices such as monoculture farming (a type of agricultural practice where only one type of crop is cultivated on a piece of land over a continuous period of time), heavy pesticide and fertiliser use, and excessive irrigation.

These practices can degrade soil quality, pollute waterways, and contribute to soil erosion, loss of soil fertility, and water scarcity.

In order to produce more food, forests are often cleared to make way for agriculture. When there is a lack of food, there may be more pressure to clear forests for agriculture.

Agriculture is a major contributor to deforestation, habitat destruction, water pollution, and greenhouse gas emissions. By promoting sustainable food production practices and increasing access to nutritious, locally grown foods, we can help reduce these negative environmental impacts.

Importance of Gunia Farming

There are many advantages of gunia farming/sisal sack farming, i.e.:

Gunia farming allows for the cultivation of plants in small or limited spaces, making it particularly valuable in urban environments where land is scarce. This method enables individuals, communities, and urban farmers to grow their own food even in areas with minimal outdoor space.

Gunia farming is accessible to a wide range of people, including those with limited resources or access to traditional farmland.

Gunia's are relatively inexpensive and readily available, making this farming method affordable for individuals and communities in both rural and urban settings.

Gunia farming promotes sustainability by utilising reusable materials. Sisal sacks can be repurposed from their original use in packaging or other industries, reducing waste and environmental impact. Additionally, sisal is a natural fibre that decomposes harmlessly at the end of its lifecycle, minimising ecological concerns.

Gunia's have excellent water retention properties, allowing for efficient use of water in farming. The permeable nature of sisal fibres helps to retain moisture in the growing medium, reducing the need for frequent watering.

This water-saving feature is particularly valuable in regions with water scarcity or limited irrigation resources.

Gunia farming is versatile and can accommodate a wide range of crops, including vegetables, herbs, fruits, and ornamental plants. Farmers can adjust the size and number of sacks according to their crop preferences and space constraints, allowing for flexible cultivation.

Gunia farming can serve as a valuable educational tool for teaching sustainable agricultural practices and promoting food security. It provides hands-on learning opportunities for individuals of all ages to engage in gardening activities and learn about plant growth, nutrition, and environmental stewardship.

Additionally, community gardening initiatives can foster social connections and empower participants to take an active role in food production.

Gunia farming contributes to food security by enabling individuals and communities to grow their own fresh produce. By cultivating crops locally, sisal sack farming reduces reliance on imported or commercially produced food, thereby increasing food sovereignty and resilience to external supply chain disruptions.

In general, gunia farming plays a vital role in promoting sustainable agriculture, enhancing food security, and empowering individuals and communities to take control of their food production in diverse environments.

Community Impact

The main aim of this project is to improve the production of food, especially in places where food poverty is high, and decrease climate change. By implementing gunia farming, food can be obtained which will tackle food poverty.

Implementing gunia farming also improves skill development. Community residents are able to gain new skills such as planting, watering and agriculture

Gunia farming also has a positive impact on sustainability. Sack farming allows for sustainable agricultural practices by using less water and space compared to traditional farming methods. It also reduces use of chemical fertilisers and pesticides leading to a healthier environment.

By growing their own food, communities can become more resilient to the impacts of climate change, such as extreme weather events and disruption in food supply.

MATERIALS AND METHODS

Equipment and materials

50kg gunia

Soil

Dry manure

Gravel/small stones

A cylindrical bucket or tin, open on both ends (we use seed tins or vegetable oil tins, but a coffee tin works well too)

Procedure

The following steps are required to implement gunia farming;

Step 1: Mix manure and soil.

Begin by mixing the dry manure and soil in a ratio of 1:1.



Step 2: Fill the gunia with soil and fill the tin with rocks.

By filling the tin with rocks, an irrigation channel is created.



Step 3: surround the tin with more soil.

After surrounding the tin with soil, lift it up slowly so that the rocks remain.



Step 4: fill the tin with more rocks, and surround it again with soil.

This step is repeated until the sack is filled with a tower of rocks surrounded by soil.

Step 5: poke holes into the side of the sack. These holes allow for the transplanting of the seedlings. They must be poked an even distance apart.



Step 6: transplant seedlings into the side of the sack.



After this, maintenance includes direct sunlight and watering. Depending on the weather conditions you may have to water daily, every 1-3 days or even weekly. The amount of water needed for watering depends on the soil. You can test how wet or dry the soil is by inserting your finger 1-2 inches deep. If the soil is dry, more water is needed but if it is moist, less water is need

Results

Our findings are that gunia farming can help the environment in several ways. By implementing gunia farming we are able to utilise limited spaces and reduce the need for intensive agricultural practices such as the excessive use of pesticides and fertiliser as well as monoculture farming



Conclusion

In conclusion, Gunia gardening presents itself as a sustainable and eco-friendly solution to both food insecurity and environmental degradation. By utilising vertical farming techniques within sisal sacks, this innovative approach maximises space efficiency and minimises environmental impact, especially in densely populated urban areas.

The practice of Gunia gardening not only addresses the urgent need for food production but also contributes significantly to mitigating climate change and preserving natural resources. Through the repurposing of discarded materials such as sisal sacks, Gunia gardening reduces waste and promotes a circular economy model, where resources are reused and recycled to their maximum potential.

Furthermore, Gunia gardening minimises the carbon footprint associated with traditional agriculture by promoting local food production and reducing the need for transportation and storage. By utilising reusable materials and adopting sustainable farming practices, Gunia gardening contributes to soil conservation, water efficiency, and biodiversity preservation.

As we strive to build a more sustainable future, Gunia gardening emerges as a practical and scalable solution that aligns with the principles of environmental stewardship and resilience. By empowering communities to grow their own food in an eco-friendly manner, Gunia gardening offers a pathway towards a healthier planet and a more sustainable way of life for generations to come.



vacant yard put to no use

source:hgtv.com

Our vision for a useful use of land by planting using gunia's.

source:realipm.com

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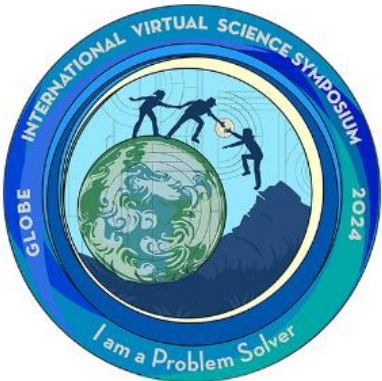
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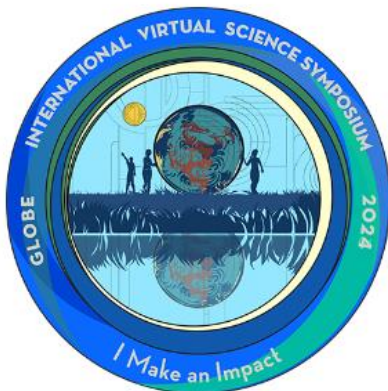
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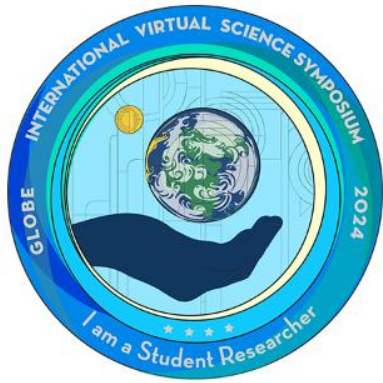
BADGES

In our report on sack farming, we have identified several key challenges. By acknowledging these hurdles, we are actively engaged in problem-solving and seeking potential solutions to improve the efficiency and success of sack farming. One major problem we have identified is the limited space available for sack farming, particularly in urban areas where land is scarce. To address this issue, we propose the use of vertical farming techniques to maximize space and increase crop yields.



As students engaging in sack farming, we have a significant impact on the environment and the world. By utilizing this sustainable farming method, we are reducing our carbon footprint by decreasing the use of machinery and fossil fuels typically associated with traditional farming practices. Additionally, sack farming allows us to grow crops in a more controlled and efficient manner, leading to less water and soil wastage.





As student researchers, my team and I have been conducting extensive research on sack farming. We have been exploring the benefits and challenges of this unique farming method, as well as studying different techniques and innovations that can improve crop yields and sustainability. Our research has involved collecting data, analysing trends, and presenting our findings in a comprehensive report that highlights the importance of sack farming as a viable agricultural option. We hope that our research will contribute to the existing body of knowledge on this topic and provide valuable information for farmers, policymakers, and other stakeholders interested in sustainable agriculture practices.