

Objectives

To produce healthy and organic vegetables while making farming more accessible and easier for everyone. Reduce the amount spent by households and restaurants to get organic/non-organic vegetables by encouraging farming. To produce fyto with sustainable materials and with a net zero carbon footprint.

Problem Statement

By the year 2050, 70% percent more food will be needed to feed the population.

Currently, during the COVID-19 outbreak, the food supply chain has been unstable. People spend about RM 250 buying vegetables on average per month. This is due to the high import rate in Malaysia and the unstable food supply chain. Despite that, do you know where your vegetables are coming from and are you sure it's safe to consume them? So how can we source vegetables sustainably, ensure it is safe and reduce the cost? Gardening at home of course! But that comes with some challenges. Gardening takes too much time, money and space. So how can we make gardening more convenient and cost-effective?

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How does it relate to the theme?

Fyto creates a self-sustaining community by allowing users to grow crops independently in virtually any indoor space. Furthermore, Fyto is hassle-free. So, you don't have to get your hands dirty or constantly monitor it. Next, Fyto creates a stress relieving environment as growing plants indoors can help improve your well-being in multiple ways, leading to more productive days. Lastly, Fyto grows organic crops so users will have access to organic food. If we take a look at the bigger picture, Fyto also comes in line with these two UN SDGs. It indirectly contributes to zero hunger as users grow their own crops that increases the production of vegetables as the population grows. Next, it creates a sustainable city as growing your own food reduces the environmental impact of agriculture and creates greener cities because with one fyto kit you can reduce GHG emissions caused by food imports.

Originality

However, we do acknowledge that we have competitors in the market.

What makes us unique? Well, Fyto is customizable allowing for infinite expansion, the farmer's hub and community on the app adds value to the product that allows everyone to interact and share their experience as well as gain rewards. AI Tracking allows for full automation. Data collected can be used for plant identification and users can monitor their plants in real-time and not miss out on their gardening experience. Our product has a novelty aspect that attracts consumers to buy our product. This is due to the common thread that ranges from consumers that are wanting a new hobby to people who are running non-profit organizations to feed the poor and malnourished. Other than that, overpopulation in society will also be a driving factor to buy our product to cope with the increasing demands of societies. The ability to grow your own food would be immensely useful especially during an event of a pandemic like the one that is currently being experienced by society. The problem at hand is that urban residents need space to make farming more convenient and energy saving because organic vegetables sold are too expensive. In conjunction with that, an estimate of 10 billion people on Earth by 2050 and 70% more food will be needed to feed the population. The scalability and usability allow us to ease urban residents to create their own urban farms and produce their own vegetables.

Description

Introducing to you Fyto, Your Next-Gen gardening experience that allows you to pop in your seeds, sit back, relax and watch your organic crops grow.

We have created the project called "Fyto" based on the Greek word for plant. We have done research in order to create a smart farming ecosystem for urban households as well as impoverished communities to ease the sourcing of healthy, organic and sustainable food as well as creating a large community of farmers and fellow enthusiasts.

Fyto is an urban indoor farming kit that is fully automated and comes with a mobile app. Here are the interesting features. Firstly, its Adaptive lighting helps boost the growth of the vegetables. With the help of AI, our lighting feature adapts to the condition of the plants based on its growth and changes accordingly. No space at home? Don't worry, It is Modular which allows users to

tailor fit it to their needs. As there is no such thing as one size fits all. Users will be able to add on more features in the future. With AI monitoring, all u have to do is wait for it to grow! There is a specially formulated medium that maximizes nutrients absorption which is organic.

The kit is a hydroponics system that has a 3D printed body that uses recycled plastic, sensors and led lights to boost and maximize the growth of the plant. To produce organic vegetables, we specially formulated a medium that maximizes the nutrients absorbed by the plants without using chemicals. By using low commodity materials that are being self-sourced, we can maximize our profits while reducing cost to produce and sell allowing us to cast a wider net.

The app on the other hand is a freemium where there is no cost to use but users can buy subscriptions to unlock premium features, remove ads and supply monthly shipments of specially curated plant pods based on the monthly theme to users. The app allows the users to monitor the kit or use it independently to learn more about planting, explore, share information and trade produce with friends, family and neighbors.

Fyto App is integrated with The Fyto kit. By taking advantage of IoT we're able to allow the user to monitor the device remotely via the app. The onboard monitoring system will notify the user once the vegetables mature. But the app has other features too. First is the Wiki-Plant, your one-stop planting library! Next is the Vege-Dex, where you can record your planting journey. Finally, we have Farmer's Hub, a community platform where you can connect, share, explore, and learn new things about the farming world.

Benefits

Compared to other solutions on the market, our product is reasonably priced. Not only does it increase food security but also produces healthy food. It's also hassle-free and encourages farming to urban residents.

Drawings

Top view:



Side view:



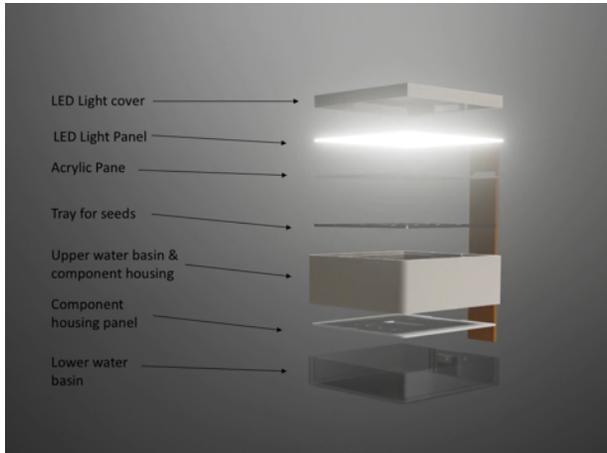
Diagonal view:



Front view:



Blowup view:



References

1. https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf
2. <https://www.globalgoals.org/11-sustainable-cities-and-communities>
3. <https://www.un.org/sustainabledevelopment/hunger/>