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GREEN VEGETABLES: HEALTHY FOOD, AS SIMPLE AS 1, 2, 3 WITH HYDROPONICS TECHNIQUE

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Consuming vegetables in daily diet is crucial for humans and animals due to their numerous health benefits. Most vegetables are rich in essential nutrients such as vitamins, minerals, and antioxidants. These nutrients are vital in various body functions, including immune system support, bone health, and energy metabolism. Both humans and animals require a balanced diet to meet their nutritional needs. As we know, vegetables are an excellent source of dietary fiber.

Fiber is essential for maintaining a healthy digestive system, preventing constipation, and supporting weight management. The fiber in vegetables also promotes a healthy gut microbiome. A diverse and balanced gut microbiota is associated with better digestion, nutrient absorption, and overall well-being.

Regular vegetable consumption has been associated with a lower risk of chronic diseases such as diabetes, heart disease, and some cancers.

Meanwhile, antioxidants in vegetables help neutralize harmful free radicals in our bodies. In addition, animals, particularly herbivores, often derive specific health benefits from consuming vegetables. For example, a certain plant compound such as resveratrol has protective effects against diseases in animals.

Resveratrol is a natural polyphenol found in various plants, including the skin of red grapes, peanuts, and berries. Taking vegetables also offers an excellent choice for those who are looking to lose weight due to the low calories in vegetables and high fiber. The fiber content helps promote a feeling of fullness as well as reducing overall calorie intake. Besides, vegetables often have high water content, contributing to overall hydration.

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Staying well-hydrated is essential for various bodily functions, including digestion, nutrient absorption, and temperature regulation. Malaysia is known for its rich and diverse culinary traditions and has a variety of vegetables that are commonly used in Malaysian cuisine. Vegetables, especially those rich in potassium (e.g., leafy greens, and sweet potatoes), can help regulate blood pressure and support heart health.

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Additionally, the fiber and antioxidants in these vegetables contribute to cardiovascular well-being. Leafy green vegetables such as spinach, romaine lettuce, kale and Swiss chard are rich in vitamins A, C, K, and folate.

Besides, it also has high fiber, low calories and is high in iron which supports bone health, digestion, immune function, and vision. Furthermore, cruciferous vegetables (cabbage family) like broccoli, cauliflower, brussels sprouts also contain vitamins C and K and are high in fiber. These types of vegetables are classified as good antioxidants; their compounds have anti-cancer potential properties.

Meanwhile, cabbage and bok choy from the same group comprise an anti-inflammatory compound. Carrots, sweet potatoes, beets, and radishes are categorized as root vegetables. Regular consumption of these types of vegetables can enhance our digestion process, immune function and support skin and eye health due to high levels of beta-carotene, vitamins A and C and B-complex. Onion, garlic, and leek are allium vegetables that are rich in sulfur compounds and high antioxidants with anti-inflammatory and immune-boosting properties that support heart health. Other vegetables that have antioxidant properties are tomatoes, bell peppers, carrot, spinach, artichokes, and mushrooms.

Antioxidants play a crucial role in neutralizing harmful free radicals in the body, which can contribute to various chronic diseases and aging.

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Therefore, including a variety of vegetables from different groups in our diet ensures we receive a broad spectrum of nutrients, promoting overall health and well-being. Based on their good benefit to humans, it is important to know how to plant, grow and pick vegetables as simple as 1 2 3 especially for working people.

Nowadays, there are so many sources and places to buy vegetables at an affordable price. But do we know whether it is free from insecticide or not? Due to this problem, people need to choose environmentally friendly farming such as hydroponic technique. This technique is one of the options to plant vegetables in an easy and simple way. Hydroponics, which literally translates to "water work," comes from the Greek term hydro, which means "water," and ponos, which means "labour" (Sharma et al., 2018). Due to the declining quantity of agricultural lands with soil-based planting media, one

method of producing crops using water media is hydroponics, which is quite popular with most metropolitan populations today. So, since it can be operated on limited area and without utilizing soil media, hydroponics is one of the most efficient techniques to grow crops to obtain optimum results at a relatively low cost.

Special handling, care, and monitoring techniques are necessary for hydroponic farming. The primary variables that must be taken into consideration are water level, water pH, plant nutrition, and air humidity temperature, all of which are still done manually by owners of hydroponic plants. The pH level in hydroponic plants is a result of their ability to absorb nutrients from the water. In hydroponic plants, the pH of the solution should be set between 6.0 and 7.0 to avoid plants getting into growth barriers (dwarf plants) if the pH of the solution is too acidic and to prevent plants from dying from a pH that is too high (Sahara et al., 2021).

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Figure 1: Hydroponic is one of the most efficient techniques to grow crops to obtain optimum results at a relatively low cost (Source: New Straits Time, 2016)

The measurement of nutrient uptake in hydroponic plants needs constant specific attention; if there are more plant roots, nutrient uptake will decrease in plants.

The hydroponic plant's development and production will be affected since the location closest to the liquid inflow will absorb the most nutrients and oxygen. There are two types of hydroponic techniques: horizontal and vertical hydroponic system plans. This technique offers many types of plants in compact areas. People can

place it in their backyard, terrace, and office as long as it is rich in nutrients in the water solution. The important thing is hydroponic technique can enhance the vegetable quality with full flavor, taste, and high nutrition.

In conclusion, healthy food with green vegetables is important in our daily diet because it benefits humans. To make it much more accessible, it is suggested that people learn how to plant, grow, and pick vegetables. Yes, make it easy as 1, 2, 3. So let's make it GREEN.

**Yes, make it easy as 1,
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References

