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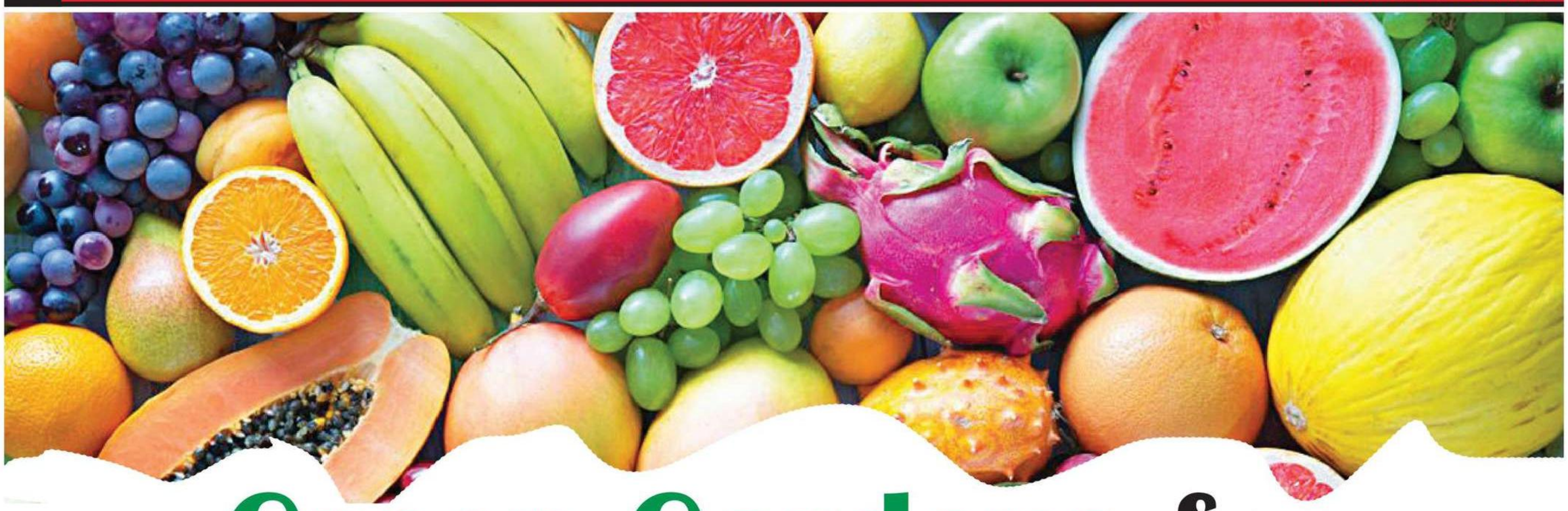

Green Gardens for Food Sustainability

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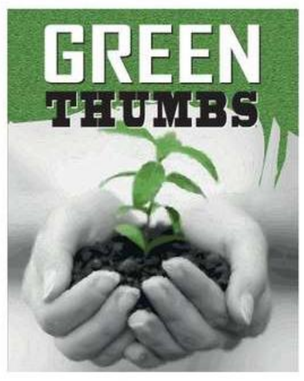
In the post-Covid recovery stage, alongside the issues of uncertain climatic conditions, fruit and vegetable supplies are being challenged globally. A growing world population automatically increases the demand for tropical fruits and vegetables.

Asian countries are among the largest producers of tropical and subtropical fruits in the world. The top five tropical and subtropical fruits in terms of production volume are watermelon, orange, grape, banana and tangerine/mandarin. China is the largest producer of watermelon, Brazil of oranges, Italy excels in grapes and India holds the market for bananas. Most of the fruits are consumed as food in fresh and processed form. Processed fruits and vegetables have advanced in many ways extending their shelf life. EU countries are the main destination for tropical and subtropical fruits, consuming nearly 50 percent of the total world export, while also supplying temperate and subtropical fruits to the global fruits market. The importance of fruit and vegetable production for the economic development of a country can be seen in its contribution to the Gross Domestic Product (GDP) and employment through agriculture.

Fruit crops allow efficient utilisation of resources such as land, water, labour and agricultural inputs, resulting in higher income per unit of available resource while maintaining and developing the natural resource base. The contribution of fruits and vegetables towards the diversification of the economy in countries such as Sri Lanka is enormous. The development of fruit crops could provide the basis for the establishment of agro-industries. Based on their lifespan, tropical fruit crops can be categorised as long-term perennials (e.g., mango, guava, date palm) and short-term perennials (e.g., papaya, banana, and pineapple).



Having the right tools, knowing how to use them and management decisions relating to the selection of horticultural tools and equipment, choice of practice, market availability, and the availability of storage facilities among others are essential factors that can affect horticultural operations and production profits in several ways. The hoe, mattock, axe, garden rake and spade have been used in Sri Lankan plantations for centuries. Fruit and vegetable farmers in Sri Lanka, mainly those on the small and medium scale must update themselves in the use of modern trends, so that they work intelligently.

A plant nursery is a location where plants are cared for during their early stages of growth to provide optimum conditions for germination and subsequent growth until seedlings are ready for budding and grafting and strong enough to be planted out in their permanent field. Young plants, especially, tropical fruit saplings are produced from seed. Tropical fruit saplings differ in their needs for soil type, light, temperature and moisture requirements. They also require protection from the severe heat of the sun, heavy rain, drought and a variety of pests and diseases, especially in tropical conditions.

The establishment of an orchard is a long-term investment, and deserves critical planning. The primary consideration before setting up an orchard is to analyse the available resources in the context of those, which are essential for successful fruit production. Careful planning results in optimum production, high returns, and long tree life. Site selection is one of the most important decisions a grower will make over the life of an orchard.

Any method of the layout of orchards should aim at providing a maximum number of trees per hectare, adequate space for proper development of the trees and ensuring convenience in orchard cultural practices. If the fertility status of the orchard soil is low, fruits should be supplied with proper nutrition. Various fertilizer application methods are followed in fruits' nutrition, depending mainly on the type and form (solid or liquid) of fertilizer, local conditions, and the availability of resources.

Irrigation water application is recommended for growing crops where or when rainfall is non-uniform or absent (spatially or temporally). Generally, the methods of irrigation can be classified into two: surface and pressurised (power-driven) systems. The surface irrigation systems can further be classified into flooding (wild and controlled), basin, border and furrow irrigation systems. The pressurised system can also be classified into sprinkler and drip systems. Prudent use of rainwater must increase in Sri Lanka at present, like in the era of our wise forefathers.

Cultivators do face challenges. Various pests such as diseases, insects, nematodes and vertebrates (e.g., birds, rodents and wild animals) attack and cause serious damage to both the plant and the useable parts (fruits). Weeds also compete for nutrients, water, light, carbon dioxide and space leading to lower yields and quality of fruit crops. Maturity can be described as the attainment of a particular size and stage after which the ripening takes place.

Two types of maturity are distinguished: physiological maturity and commercial (horticultural) maturity. Physiological maturity refers to the stage in the development of the fruit, when maximum growth and maturation have occurred, i.e., the fruit is fully ripened. Commercial maturity refers to the stage of development when a fruit possesses the necessary characteristics for use by consumers. Small and medium scale growers must discern this and harvest wisely. We often see kilos of unsold fruits and vegetables on TV news, stemming from harvesting in a hurry.Harvesting of fruits and vegetables at optimum maturity will produce the best quality fruits in terms of size, colour, flavour and shelf life than those not harvested at appropriate maturity. Harvesting when the fruit is cool (early morning) and cooling the fruit as soon as possible promotes quality and shelf life.

Major tree management practices for subtropical and temperate fruit crops include irrigation, fertilisation, mulching, propping and pruning, dormancy management, pollination and pollination management, fruit thinning, and pest and disease management. Most of the fruits are highly perishable, with less storage life and need quick disposal after harvest. The lack of a secure and quick transportation system was one of the major constraints in the expansion of fruits and veggies, said fruit and vegetable growers during my visits across the island.

There is hope for some segments of cultivators who sell their products directly to Colombo-based companies, which is a good thing. Quick transport facilities by road and rail must be accessible enabling growers to transport fruits, to long-distance markets in good condition in a short time. The Sri Lanka Railways which operates trains covering most of the island can introduce freight wagons, with cold storage to transport fruits and vegetables to Colombo. This is done in foreign countries. Cold storage facilities help to regulate market supply and stabilise the market rates. Similarly, to extend shelf life, pre-cooling after harvest is necessary. Road transport has advanced from previous decades yet the condition of some lorries is below the level required for the decent food movement.

The development of agro-based industries to generate employment is a must to keep the Sri Lankan economy sound. Market surveys in Europe and other markets have revealed that there is a good scope for grapes, mango, banana, pomegranate, citrus, and cashew. Grapes grown in the Northern Province must reach Colombo in a fresh condition. I have previously written about the Rosarian Catholic priests in Jaffna who cultivate Nelli and produce fresh Nelli crush. This is an example for others. There are two main groups of vegetables grown in Sri Lanka based on agro-ecological adaptability. The upcountry (hilly areas) vegetables constitute crops such as cabbage, carrot, beetroot, cauliflower, knolkhol, bean, tomato, and capsicum which are grown on a commercial scale. These upcountry vegetables are rare in certain seasons, causing a price increase.

The other group constitutes the low-country (plains) vegetables, which include brinjal, bitter gourd, pumpkin, cucumber and snake gourd which are cultivated less intensively under low input systems. Additionally, leafy vegetables are grown across the country, mostly in home gardens and have an important part in the Sri Lankan diet. Vegetables such as bell pepper, tomato, and salad cucumbers are also grown under intensive culture in protected agricultural systems mostly for the hotel industry and exports.

Our Sri Lankan diet must also accommodate pickled vegetables and dehydrated fruits. People must try to change their eating habits in the changing world. Some local companies have engaged in the business of pickled and dried fruits and veggies, and it is a good start. Rural home gardens must steadily expand to supply their local village markets. People who own land in rural areas must subject it to productive use, by starting fruit and vegetable gardens. This creates new income in the post-Covid era. We must strive to increase local production which in turn gives stable prices. We must change our social views and respect our fruit and vegetable growers. Green gardens are important for a progressive nation.

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