



# The Nutrition Society of Sri Lanka

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## HOW SAFE FRUITS WE EAT?

Fruits play a pivotal role in our diet adding many minerals, vitamins, dietary fiber and myriad of phytochemicals that bring about various positive health effects. As a result, fruits are considered an essential part of the daily diet. Keeping in line with global recommendations, Sri Lankans are also advised to consume minimum of 200 g of fruits daily. However, unfortunately, fruit consumption in Sri Lanka is unsatisfactory and remains way below the recommended intake. The country is blessed with plethora of homegrown fruits among which only less than twenty fruits have been commercialized while the rest remains underutilized. There are certain myths surrounding fruits some of which have caused unnecessary fear among consumers leading to low intake. In this light, it is important to look into some of the common fallacies surrounding fruits and fruit consumption.

### 1. Are local fruits better than exotic fruits?

Each fruit is unique, therefore, it is not scientific to make such a comparison. Generally, tropical fruits are sweeter and nutrient dense than the fruits grown in temperate climates. Most fruits contain high amount of water while fruits such as Lavalu and avocado carry less water and more dry matter. Compared to apples, grapes and pears, locally grown commercialized fruits such as mango, pineapple, wood apple, banana and papaya contain more dry matter and are richer in nutrients. It is always important to bring variety to diet, therefore, adding fruits of



different types is important. Consumption of homegrown fruits retain foreign exchange used for importing exotic fruits, therefore, it is always better if more locally grown fruits are consumed. However, at times, we tend to go for exotic fruits such as apples, oranges, mandarins and grapes due to various reasons. The exotic fruits are generally cheaper, more attractive, appealing and convenient. As an example, apple or orange can be readily be consumed compared to pineapple, mango, durian, water melon, sour sop or jackfruit.

### 2. Are pesticides applied for fruits?

Most of the commercially cultivated crops need application of agro-chemicals at least once in the field. Therefore, it is more important to ask the question whether recommended chemicals have been applied at recommended levels. In general, application of pesticides for fruits is low compared to vegetables and other field crops. Moreover, fruits such as mango [Karthkolomban, Wellaikolomban, villard etc.], mangosteen, durian, sour sop are cultivated without the use of

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agrochemicals. Nonetheless many farmers who commercially cultivate fruit types such as TJC mango, papaya, guava [large type] and pineapple tend to use agrochemicals. Strawberry is a fruit that demands quite high use of pesticides. Fruit crops such as banana require little use of agrochemicals at the very onset and the chances of transferring them to fruit is very slim. In contrast, fruits such as guava [large type] require heavy use of pesticides to protect them against fruit fly. In terms of the residual pesticide content, most fruit local fruits are safe.



least 50% higher than that of regular produce.

With regard to imported fruits, the level of pesticides and type of pesticide used depend on the country and region of origin where they are cultivated. Most countries adhere to the stipulated regulations in applying pesticides and on the other hand, pesticide residue levels fall as they continue to degrade with time. Organically grown fruits are abundant in international market while they are less common in Sri Lanka. Organically grown fruits are free of pesticides. The price of organic produce is at

### 3. Are imported fruits chemically preserved?

Fruits are imported to Sri Lanka mostly from countries such as China, Australia and India, thus they have to be preserved for few weeks to few months. Modern storage technology is nowadays available to preserve them without using a single chemical by precisely controlling



temperature, Relative Humidity [RH], gas concentration and ethylene concentration. When harvested at the correct maturity stage, the storage life of some fruits such as apple, orange and banana can be extended up to 6-8 months through the use of this method which does not require any chemical preservative. However, once dispatched from the country of origin, it is difficult to use this special storage, thus there is a need of some level of preservation.

Texture, shape and weight of a fruit are greatly influenced by the water content and as a result, it is of paramount importance to retain water within the fruit. Water is preserved by applying a wax or oil or a mixture of both on the surface of the fruit. This wax layer is mostly visible and you can even feel it. Is this wax harmful? The short answer to this question is no. This wax derived from a palm tree is totally edible causing no harm at all. However, in order to lengthen the storage life, minute quantities of approved fungicides may be applied on to the surface of the fruit. Generally, these approved fungicides are mixed with wax and applied onto fruit surface. These fungicides are mostly non-systemic, thus do not penetrate into fruit tissues. Moreover, the effectiveness of fungicides gradually decreases with time. As traces of fungicides can be present at the time of consumption, you may wash fruit thoroughly and peel off before use.

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#### **4. What is the tiny sticker glued onto some fruits?**

The tiny sticker glued onto fruits is termed Price Lookup Code [PLC] which is used by supermarkets and grocery stores for checking price and for inventory purpose. The same sticker is most often used to include information on traceability. In addition, some traders include their trade names and other information on stickers. You can spot these stickers on most of the imported fruits. The codes approved by the International Federation for Produce Standards [IFPS] carry four or five digit codes and the number in front indicates whether produce is organically cultivated or not. There is a widespread myth that these tags are used to conceal the point of injection where chemical preservatives are injected into. There is no truth whatsoever in it. No chemical preservatives are used on fruits as described in the section 3.

#### **5. Are imported fruits genetically modified?**

It is highly unlikely that imported fruits are genetically modified as the production and marketing of genetically fruits are very limited only found only in few countries in the world. Genetically modified papaya, strawberry and apples are cultivated and marketed in the USA in very limited quantities.

#### **6. Are artificially ripened fruits safe?**

During the natural ripening process, most fruits produce a natural gas known as ethylene which triggers ripening of rest of the fruits if kept together. Ethylene can be artificially generated using a chemical known as ethereal, which is an approved ripening agent in the country. What ethereal-derived ethylene gas does is exactly similar to what ethylene naturally synthesized in fruit. Therefore artificially ripened fruits using ethereal does not compromise the safety of ripened fruits.

Some years ago, calcium carbide was used to ripen fruits. Calcium carbide is a solid which generates acetylene gas which acts similar to ethylene and triggers ripening. Upon mixing with water carbide releases acetylene gas which promotes ripening. However, most fruit vendors in Sri Lanka sprayed carbide-water mixture onto fruits. As a result, fruits become laced with toxic metals such as cadmium, nickel and metalloids such as arsenic which exist as impurities in calcium carbide. Considering the safety of produce, the government decided to delist calcium carbide as an approved ripening agent, thus use of carbide is now illegal in Sri Lanka.

#### **7. Are fruits colored using dyes?**

Theoretically anything can be colored artificially, however, it is very unlikely that artificially colored fruits come for sale in Sri Lanka. It is not easy to color the whole fruit evenly by injecting dyes and coloring by this way is highly cumbersome. Some fruit vendors apply synthetic dyes onto cut surfaces of water melon to make fruits more appealing. To be on the safe side if anything looks unnaturally bright it is better to avoid. You might have suspected that blue colored veralu is not natural. This is quite a novel variety which is completely natural.

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## Summary

It is important to consume minimum of 200 g of fruits daily. Include a variety of fruits into daily diet mostly locally grown nutrient rich fruits. It is important to be mindful of the safety of what you consume while not being misled by myths.

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