



## Wild Nutrients Lost and Found

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### Abstract

Our far ancestors were much healthier and lived longer than any of us today. They were free from various diseases and many health conditions which exist today. They were not even aware of few illnesses which exist today. It was because they used food as a medicine, they consumed fresh wild plants, which protected them from various illnesses. But, we, human beings started farming; modify the genes of the wild plants to make the food more enjoyable by us. In the very process we lost the key nutrients which are essential to maintain optimal health. Knowing the fact that it is impossible to back to the “wild times”, keeping various literature and food scientist’s experiment in mind, this article gives you a clear view on getting the maximum out of few classes of fruits and vegetables that are present today, starting from how to pick the right fruits and vegetables from a market to storing them in proper condition and keeping the processing minimal or processing the plants right. Wild nutrients lost and found in this GMO era.

**Keywords:** Nutrients; Food; Farming

### Introduction

Where do our fruits and vegetables come from? Not surely from the super market, of course. That is just where they are sold. Nor do they come from large commercial farms, local farms, or even from our backyard. That is just where they are planted, tented, and harvested. The fruits and vegetables originated from wild plants that grow across the scattered areas around the globe. The wild ancestor of our tomato is a berry sized fruit that grows on the flanks of Andes Mountain, South America. Our hefty orange carrots are related to a purple root that grows in Afghanistan. When our distant ancestor invented farming ten thousand or so year ago, they began to alter these and other wild plants to make them palatable to humans. Unfortunately, in the very process we lost some of our vital nutrition’s which are essential for our body and even certain phytonutrients which helps to prevent various diseases.

Take for example, the most popular and widely consumed fruit Banana. The wild ancestor of the banana grows in Malaysia and parts of Southeast Asia. They come in multiple color, size and shapes. Most of them had chock – full large, hard seeds. Their skin so firmly attached that you have to cut them off with a knife. Take a bite of the dry, astringent flesh and you would wonder why you went to the trouble. Over several thousand years, we clever hu-

mans have transformed the barely edible fruit into a yummy banana, yellow, long easy to peel and the seeds downsized to mere dot. Likewise, generation after generation, we have reshaped our native plants to make them more palatable to us. To understand this even better let’s take a look into the Evolution of farming.

### Wild to GMO

Before farming was practiced, humans used to eat wild plants and animal. Anthropologist confirm that people used to live in a small clan containing 20 to 40 people and used to move from place to place and stay in camp in search of food. They also coincide the journey to meet the annual migration of game and ripening of fruits, veggies, nuts, etc. by necessity, all their food was local, organic and seasonal. Because they hunted or forged all their food, they are referred to as Hunter – gatherers.

Our ancestors used to dine in nature’s café until 5000 to 12000 yrs ago. After which for some unclear reasons, handful people broke tie and started farming their own food and used hunting just as a wild game. They also began taming cows, goat and sheep to get milk and made products out of it such as panner and other fermented stuffs, drinks, etc.

They also began to create beautiful garden. Of course, very simple to create them, using seeds, cuttings, etc. They initially produced less amount of farming produces to meet their own food need and later mastered in the same. By this way they settled down in one place and also collected wild foods. This enormous transition of our ancestors from hunter – gatherers to farmers lead the way to The Agricultural Revolution. The revolution of modern agriculture did not stop there and moved further to a major turning point which is GMO. Genetic modifications of foods lead to further changes and loss in nutrition content in them.

### Loss of major and minor nutrients

In the process of making food palatable, we stripped some of the essential nutrients which are considered essential for optimal health. Comparing the wild fruits and veggies with the man made once the later one is markedly lower in vitamins, minerals and essential healthy fats. E.g., the wild ancestor of spinach called purslane has 6 times more vitamin – E and 4 times more omega 3 fatty acids than our modern spinach.

Our native plants are also high in proteins and fibers, at the same time low in sugars. Today, most of the health experts accept that most healthful diet is one that is high in fiber and low in sugars and rapidly digestible carbs and the same is referred as Low – Glycemic foods. Low – Glycemic food are the ones which reduces diabetes, obesity, chronic inflammation, cancer, cardiovascular disease. Our wild fruits and veggies are the original Low Glycemic foods. E.G. Wild ancestor of our modern sweet corn is a grass plant called toesinte. Toesinte kernels contains 30% protein and 2% sugars. Old-fashioned sweet corn contains 4% protein and 10% sugars. Some of the new varieties has as much as 40% sugar and impacts our blood sugar as much as candy, cake, etc.

### Huge loss of phytonutrients

Few decades ago plant scientists confirmed that plants which nature made are rich in phytonutrients than the ones made by man. Plants produce them to protect themselves from insects, diseases and damages, whereas the same is helpful for humans as potent antioxidants which plays a major role in quenching the free – radical thus preventing cell damage, cancer, acts as anti aging. Few also have the capacity to alter our genes for good. A number of small scale studies have proved that selected bionutrients in plants can improve athletic performance, reduce the risk of infection, fights flu, lowers blood pressure, speeds up weight loss, improves mood, and boosts immunity. More than 8000 varieties of phytonutrients have been identified and each plant produces several 100s of them.

Because of their wide use phytonutrients has become one of the hot topics of research. Many health conscious people now talk about lycopene in tomato, anthocyanin in wine and betalain in beetroot. The nutraceutical industries are the ones who captured these and quickly capitalized on research. Have you taken your lycopene pills today?

If we were still eating wild plants we would be no need for those supplements. One species of wild tomato have 15 times more lycopene than the once available in supermarkets now. One species of wild apple grown in Nepal has 100 times more phytonutrients than the ones that are sold today.

### A modern calamity

There are more processing happening to our fruits and veggies before they reach us apart from modifying its genes and farming. Using machines to plow, plant, harvest, clean, pack etc. the usage of machines has lead to dramatic loss in flavor of the fruits and veggies. Large commercial farms produce more food than it is needed for the nearby communities, so the fruits and vegetables began to ship to distant location.

Mega farms produce more food and now the fresh produce need to spend more days or weeks in shipping, storage, etc which lead to loss in flavor and used up their phytonutrients and natural sugars, made them more acidic and bitter. Ironically, after spending 10000 of years to make food more palatable, we had reversed course and begun making them less enjoyable.

So, what can we do to restore the long – lost nutrients and the flavors of our fruits and vegetables? Clearly, we cannot go back to eat wild plants. Kitchen garden and home grown plants are one way to escape this. In this article a radical solution to dramatic loss of nutrients and flavor is presented for some common groups of fruits and vegetables are discussed. Selecting, storing, processing foods techniques are road map to this article.

### Vegetables

#### Tomatoes

Is tomato a fruit or vegetable, is still a point to argue. But is there a day in our kitchen, which was spent without using this juicy, rosy delight! We relish tomato in various form from soup to sauce to chutney and I raw form in salad.

#### Home grown tomatoes

If you have room to grow your own garden, give it a try. Growing tomato has become much easier these days. Many have grown

tomato from its seeds. Today you can buy it as a small plant from any nursery. Plant it in a fertile soil where it is exposed to good sun light. Or you can even plant it in a big size pot. You can get heirloom or hybrid varieties of your choice. Small size cherry tomatoes have more health benefits than the usual ones.

### Organic tomatoes

Non organic tomatoes are sprayed with herbicides, insecticides, and plant growth regulators. The standard pesticides used in the industry include metam – potassium, metam – sodium, chloropicrin, 1,3 dichloropropene, chlorothalonil, and methyl bromide. All of which are chemicals that are toxic, promote cancer in the lab test conducted using animals, interferes with reproduction, or contaminate the environment. Organic tomatoes are free from all these chemicals. Organic tomatoes have more balanced and intense flavor than the conventional ones.

### Points remember to get the best of tomato

- **Choose Deep Red for Health:** Deep red tomatoes have more lycopene and antioxidant properties than the novel yellow, green or golden.
- **Cherry tomatoes:** These smaller the tomato higher its sugar and its lycopene. They are also rich in its flavor. Hence these smaller varieties can be used for salsa, salad, sauces, etc.
- **Surprisingly, processed ones are better than the fresh ones:** Yes! You read that right! In the case of tomatoes the canned ones and processed ones in the form of sauces contain more lycopene than the fresh one. Tomatoes ripen in the field and are immediately processed after few minutes of harvest. Also, the canning temperature increases the lycopene content and makes it more bio available.
- **Storage:** Store fresh tomatoes at room temperature to preserve its freshness. Tomato loses its flavor and aroma compounds on storing them below 50°C.
- **Cooking increases lycopene absorption:** On subjecting the tomatoes to heat, its lycopene concentration increases, and its nutrients are more bioavailable.
- **Using tomato as whole:** Try using the tomato as whole since its seeds, skin and juices are rich in nutrients and flavor. The famous Unami taste from MSG is also found naturally in tomatoes. Tomato juice is rich in glutamate which is the flavor component of MSG.

### Allium

Remember the famous saying “Let food be the medicine and medicine be the food”. Probably it suits best for these Allium fami-

lies. Onion, garlic, leek, chives, shallots, and scallions are the members of Allium family. They were always been used as a vegetable, condiment and medicines for ages. Our hunter gatherers weren't must aware of their medicinal uses. Our ancestors and tribes used these to treat infection, wound, appetite loss, etc. Let us discuss points to get the most out of these.

- **Garlic:** Garlic is rich in nutrients and has a number of promising health benefits. Choose garlic which is plump, firm and tightly intact with the outer layer. To get maximum allicine, peel and chop the garlic and allow it to rest for 10 mins then add to your favorite dish. Hard neck varieties are flavors and are highly pungent. You can store garlic for 2 to 3 months with a net or paper bag wrapped around its neck in a cool dark and well ventilated place. Avoid storing it in the refrigerator.
- **Onion:** These strong flavored onions are the best for our health. More the pungency higher is the health benefits. Bold tasting red and yellow onions have more health benefits. Cooking, frying onions increases its nutrients especially the quercetin. But boiling them decreases its nutrition content. Small ones are packed with more nutrients than the bigger ones. Store onion in a cool, dry, dark place where the humidity is moderate. But the sweet onions need to be stored in a refrigerator and should be consumed within a week.
- **Shallots:** Shallots are more nutritious than any other onions. They can be grown at the home garden since they consume less space and seek less attention. Overall they are mild but nutritionally potent. Their storage specifications are similar to onions.
- **Leeks:** The tall, mild flavor alliums have a slender bulb and a long stalk. Though the green stalk has more bioavailable nutrients, cook the leek as a whole (bulb+greens). They lose their antioxidant quickly. So consume them as soon as they are bought. Sauté the stalk for few minutes and then add the bulb to the dish to get the most out of the leek's antioxidant. Store leek in refrigerator for short time.
- **Chives:** There are two types of chives. They are onion and garlic chives respectively. Gardeners love these chives because of its beautiful violet flower. Garlic chives have more antioxidant than the onion chives. Garlic chives are used in Chinese medicines to cure various diseases like fatigue, kidney disorder, liver, and digestive tract. If you buy chives consume them immediately. If you need to store, put them in a sealed plastic bag which are perforated and put them in the crispier rack of refrigerator.
- **Scallions:** Scallions are the closest to the wild onions.

## Fruits

### Grapes and raisins

Grapes grow as a vine. It tastes as sweet as a candy. This luscious sweet delight is filled with nutrients, especially antioxidants. They can be relished fresh or as a juice or as a fruit leather. On the other hand our hunter gatherers dried these sweet additions and made as raisins to be used for later purpose. Today it is the most popular dry fruit.

### Selecting

Red, purple, and black grapes are high nutrients and are best for your health. Thompson seedless grapes or the pale green grapes have little to zero anthocyanin. Anthocyanin is the phytonutrient present in the grapes which provides most of the health benefits from grapes. Muscadine and concord grapes are especially high in this antioxidant.

While picking grapes, look for the freshest bunch. Some supermarket has those stores for a long time before they come to the counter, which lead to the loss in nutrients, freshness and flavor. Make sure the grapes are plump and are firmly attached to its vine. Stem should be bright green in color, flexible, grapes shouldn't be sticking to each other or loose or moist.

### Storing

Storing grapes properly is the key to main its freshness and flavor. Chill grapes as soon as we get them home. Put them in a plastic bag or container with tiny holes on them. Don't wash them before storing, because the added surface moisture will promote decay. Pluck the necessary quantity time to time to consume wash them consume immediately. Grapes contain more pesticide residue (especially sulphur dioxide) than any other fruits. To avoid the same wash them thoroughly in running water or buy organic.

### Raisins

Golden raisins have more antioxidant than the black ones. Both of them are made from the same varieties of grapes but are processed differently. Drying them in sun darkens its color and destroys all of its phytonutrient. Whereas the golden ones are treated with sulphur dioxide to prevent further browning. This process prevents the phytonutrients loss. Avoid consuming them if you are allergic to sulphur dioxide. Substitute these raisins with currents. Currents are very small fruits packed with high number of antioxidants than raisins. Made out of Corinth grapes. They are just the perfect blend of sweet and tart.

### Citrus fruits – is VIT-C the limit?

The wild ancestors of citrus fruits are native to Southeast Asia. They were first used for medicine and beauty treatment rather than consumption. Sour oranges were the ones which was first used for consumption. Today the sour, highly beneficial fruit is consumed out of a power.

Tang – an artificially flavored drink was first developed for the people who shuttled to space – NASA. The General Food corporation USA started using its connection with NASA wrongly and a commercial add targeting the children was designed and boom it was widely spread and we started thinking the citrus is famous for its Vitamin – C only which is being packed in the packet of a tang. Surprisingly, the very NASA itself sent a pack of zero gravity packed tang to the space to avoid bad odor and unpleasant taste of the ships recycled water.

Now, Tang, is owned by Kraft Foods, has dozens of flavors, fortified with loads of nutrients and even replaced its huge amount of sugar content to artificial sweetener. Food chemist even created a new 'antioxidant' rich tang. No matter how much they design their powder drink, the nature's gift always remains the healthiest ones. They cannot match the wholesomeness of our orange.

### Goodness of nature's produce

The navel oranges are both popular and nutritious. Choose the large sized oranges which are deep orange in color. Eat them along with the membrane that surrounds them for added nourishment. The membranes scientific name is Albedo. Slice the oranges rather than making wedges to eat it along with the membrane. Canned and processed ones lose their albedo content due to mechanical peeling and chemical treatment. Choose any citrus which has deep colored flesh. Deeper the color of the flesh more is its phytonutrient. Mandarins, blood orange colored ones are few examples. Home squeezed orange juices are the best, if you wish to have a juicy affair. Consume the juice immediately once it is squeezed, to avoid bitter taste. Consume the juice along with the pulp. Red and pink grapefruits which are packed with phytonutrient. They also taste sweet. They can even lower your LDL cholesterol and triglycerides.

Lemon and lime are native to southern China and northern India. We widely consume these fruits in the form of freshly squeezed juice flavored with salt or sugar. We can also use its peel and try to incorporate in our recipes. Peels of all our citrus fruits are high in phytonutrient than the flesh. Nutraceutical industries have been

buying the discarded peels from the juice companies and turn them into antioxidants. However, to avoid pesticide residues buy organic ones. Washing the peel alone will not solve the issue since 16 to 57% residues are still intact on the skin.

Most of the lemon and lime are harvested and sold before they are ripe. Fully ripened ones have high quantity of juice. Select the lemons which are yellow in color, without any traces of greens. Most limes are beginning to turn yellow. The fruit should be glossy and heavy for their size.

### Storing citrus

Citrus fruits can be kept on the counter for weeks. You can refrigerate it if you are planning to store longer. Don't store them in the plastic bag since they promote mold growth. Fruits remains can be squeezed as a juice and its skin can be grated and used [1-7].

### Conclusion

Nature has given us what we need in the exact form. That's why she is called 'Mother Nature'. Humans are the only animals who process food. Dogs, lion, etc are yet to process its foods. Though some caged chimpanzees love Gems, Chimps are yet to make their own candy. Staying closer to Mother Nature will keep us healthy. Eating the wild side is the key to maintain optimal health.

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