



HEALTHFORCE SUPERFOODS  
PRODUCT EDUCATION SHEET  
NUTRITION THE WAY NATURE INTENDED™

TRULY NATURAL™ VITAMIN C  
VERSION 3

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### Vitamin C Basics

Vitamin C (Vit C) has a number of important functions in our body:

- Plays an important role in immune system function<sup>1</sup>, particularly in enhancing white blood cell activity.
- Required for the synthesis of collagen,<sup>1</sup> the main component of connective tissue, and the most abundant protein in mammals. Collagen is an important structural component of skin, tendons, ligaments, cartilage, bone, blood vessels, teeth, gums, heart valves, cornea, capillaries, intervertebral discs, and the GI tract.
- Essential for the production of adrenal steroid hormones.<sup>2,3</sup> Our body's highest levels of Vit C are found in our adrenal glands, brain tissues, pituitary gland, leukocytes, and eyes.<sup>1,4</sup>
- The major water-soluble antioxidant in our body, protecting important molecules such as proteins, lipids, carbohydrates, DNA, and RNA from damage by free radicals.<sup>1</sup>
- Has the ability to regenerate other 'spent' antioxidants (e.g., vitamin E, glutathione) back into their active forms.<sup>1</sup>
- Required for the synthesis of carnitine<sup>4</sup> – essential for the efficient burning of fat for energy in our body's cells.
- Plays an important role in the synthesis of norepinephrine,<sup>1</sup> a neurotransmitter known to affect mood.

### Vitamin C: An Essential Nutrient for Life, A Brief History

Vit C deficiency results in the potentially fatal disease known as scurvy. Scurvy was first observed in the 16th century among sailors who ate a diet devoid of fresh fruits and vegetables during long voyages. In the winter of 1535–1536, the French explorer Jacques Cartier spent the winter in what is now Quebec City, Canada, as his ships were frozen in the ice for five months.<sup>5</sup> During this time, his crew developed scurvy due to limited supplies, and some crew members began to die as a result.

As divine grace would have it, the indigenous people shared the knowledge of their traditional medicine with Cartier and showed him how to make a decoction using the leaves and bark of an evergreen conifer named “Annedda.”<sup>6</sup> The Vit C (and now known related cofactors) in the Annedda was later credited for helping his men stay alive. As the story goes, he was able to save 87 out of the 112 men.<sup>5</sup> It would be two centuries later before the recommendations of Cartier would be heeded by other maritime captains and their crews.

In 1747, naval surgeon James Lind, *The Hippocrates of Naval Medicine*,<sup>7</sup> conducted the first clinical trials proving that oranges and lemons could be used to cure any man with scurvy.<sup>5,7</sup> Mariner Captain James Cook eagerly embraced this medical breakthrough and implemented a regimen of cleanliness, fresh air, and an antiscorbutic diet by stocking foods on board his ship like sauerkraut, wort of malt, concentrated lemon and orange juice, among other treatments.<sup>8</sup>

Although Danish ships were very aware of the dangers of scurvy and had long been stocking citrus on board, British Sea Lords were slower to apply Lind's citrus discovery.<sup>5</sup> Inspired by Lind and Cook, in 1795, a court physician named Gilbert Blaine championed Lind's work, and the admiralty finally gave the order to supply the British Royal Navy with lemon juice.<sup>7</sup>

In the 1930s, American biochemist Charles Glen King and Hungarian biochemist Albert Szent-Györgyi were working independently on the discovery of Vit C. The two scientists actually made the discovery within weeks of each other<sup>11,13</sup> but Szent-Györgyi was given credit for discovering and identifying Vit C<sup>9</sup> and was awarded the Nobel Prize for his work.

In 1932, Szent-Györgyi was able to extract what is now known as ascorbic acid from paprika peppers; the peppers were a rich source of natural Vit C.<sup>10,13</sup> Once Szent-Györgyi found a way to extract this necessary nutrient from whole foods, he got to work

distributing it to places where scurvy was still prevalent (e.g., Norway). He knew humans no longer needed to be victims of a disease caused by basic nutrient deficiency.<sup>10</sup> Szent-Györgyi also discovered that Vit C enabled the body to efficiently use carbohydrates, fats, and protein.<sup>13</sup> His discoveries are considered truly foundational in our modern understanding of nutrition.

In 1933, Dr. C Haworth won a Nobel Prize in chemistry for the synthesis of Vit C.<sup>14</sup> Shortly after, the pharmaceutical company Hoffman La-Roche began to produce synthetic Vit C for the masses.<sup>14</sup> Isolated, synthesized Vit C eventually opened the door to the concept of mega dosing Vit C.

One of the most well-known advocates of using high-dose Vit C, Linus Pauling, wrote the book *Vitamin C and the Common Cold* in 1970. Pauling experimented extensively with mega doses of synthetic Vit C. His work has greatly influenced our associating Vit C as a go-to aid for the seasonal sniffles.<sup>10</sup>

The established medical opinion of the time vilified Linus Pauling's high-dose Vit C research. He is now regarded as one of the greatest scientists and humanitarians in the modern era. Pauling famously declared that “*Nearly all diseases can be traced to a nutritional deficiency.*” It is worth noting that Linus Pauling is the only person to have ever been awarded two unshared Nobel Prizes — for Chemistry (1954) and for Peace (1962).<sup>15</sup>

## **Is Ascorbic Acid the same as Vitamin C?**

Read the label on most Vit C supplements and you will see the words ‘ascorbic acid’ listed in the ingredients.<sup>1</sup> Most people, and even many scientists, consider Vit C and ascorbic acid to be equivalent, but what is ascorbic acid exactly? Ascorbic acid is a purified, isolated compound produced in laboratories via a five-step chemical process using glucose (the glucose being usually, but not always, derived from GMO corn sugar).<sup>16,17,18</sup>

Calling ascorbic acid Vit C is like calling the skin of the orange the whole orange. Ascorbic acid can be thought of as simply the antioxidant ‘skin’ of the Vit C complex — the part of Vit C that protects the functional parts of the complex from oxidation.

Functional vitamin activity in our bodies, however, is never produced by isolated, individual molecular compounds. Instead, all vitamin activity in our body occurs as multi-step biochemical interactions, interdependent on all cofactors and components of the entire ‘vitamin complex’ being present and working together in a specific timed sequence.

According to the research of Dr. Royal Lee, considered the *Father of Holistic Nutrition*, Vit C activity in our body includes bioflavonoids, factor K, factor J, vitamin P, tyrosinase, ascorbinogen, various mineral cofactors, and other yet-to-be-discovered components.<sup>19,20</sup> If any of these parts are missing, there will be no vitamin activity in our body.

True cellular nutrition is a team sport. In American football, if the star quarterback were isolated from the rest of the team and was left to score all the touchdowns by himself, he wouldn't get very far. The Vit C complex would be analogous to the star quarterback plus the whole front line. The coherent team matrix that is created as all the individual parts act as one synchronistic whole allows a team to advance effectively into the end zone.

Dr. Lee noted that clinical studies using only ascorbic acid failed to bring complete systemic relief to scurvy.<sup>20</sup> Szent-Györgyi also observed that he did not get the results he wanted treating scurvy using isolated ascorbic acid as he did when he used whole foods. That led him to discover what he tentatively called vitamin P,<sup>21</sup> which contributes to complete Vit C activity. Szent-Györgyi wasn't convinced that the flavonoid he was studying was indeed vitamin P as he would have hit or miss results with it when administered with ascorbic acid. Szent-Györgyi was focused on the yellow group of phenolics.

In his book *The Living State*, Szent-Györgyi explains:

“While I was isolating ascorbic acid in Hungary, a patient was admitted to the medical clinic of my University with extensive subcutaneous bleeding. Since such bleeding is a classic syndrome of scurvy, on advice of Professor St. Ruzsnyak, my impure preparation of ascorbic acid was injected into the patient, whereupon the bleeding stopped. After I crystallized ascorbic acid another patient with the same complaint was treated with the pure vitamin C. It had no effect. I had a hunch that the action in the first patient may have been due to the flavones present as impurity and so several similar cases were treated later with flavones with excellent results. It seemed possible that the flavones too were vitamins. I was not sure of this, so tentatively, I called them ‘vitamin P’.”<sup>12</sup>

## Bioavailability Is Key

Contrary to what mainstream science has led us to believe as fact, Vit C (ascorbate), with its associated cofactors from plants, has been shown to be far more bioavailable and effective when compared to isolated synthetic Vit C or even isolated, purified ascorbic acid from food.<sup>22</sup>

To illustrate, in the study, “Source-Oriented Differential Impact of Ascorbate Fortification on Popular *Bombyx mori* Hybrids”, published in the *International Journal of Biology Research*, Tantray (2016) showed that ascorbate present in its natural environment in crude amla berry extract induced significant improvements in the economic traits of silkworms at 10 times lower doses as compared to synthetic ascorbate and purified ascorbate isolated from amla.<sup>22</sup> Tantray reported, “It could be noted ... that crude extract of Amla containing ascorbate elicited the improvement at 10 times lower concentration compared to purified and synthetic ascorbate. However, purified and synthetic ascorbates were effective at same dosage but 10 times lesser than crude extract.”<sup>22</sup>

In another study, “Antioxidant Activity of Fresh Apples”, published in the journal *Nature*, Eberhardt et al., (2000), demonstrated how essential the skin of the fruit is to the total antioxidant activity. Eberhardt et al. (2000) stated, “...the antioxidant value of 100 g apples [with skin] is equivalent to 1,500 mg of vitamin C. Given that the average vitamin C content in fresh apples with skin is 5.7 mg per 100 g...and that the total antioxidant activity of 0.057 mg vitamin C (in 1 g of whole apples) is only 0.32 TOSC [total oxyl radical-scavenging capacity]... then almost all of the antioxidant activity in apples must be due to phytochemicals.”<sup>23</sup> Eberhardt et al. (2000) concluded that, “Phytochemicals in apples other than ascorbic acid seem significantly to enhance their antioxidant properties...”<sup>23</sup>

Bioavailability can be thought of as how much of a nutrient is actually being absorbed into the cells for utilization. It is a common misperception to think that everything a person puts into their bodies is actually being absorbed into the cells. An analogy would be to walk into a bank with a paycheck in hand thinking that it automatically gets deposited into a person’s checking account just because the check has made it inside the bank. People who purchase synthetic Vit C supplements often think they are getting the best bargain when analyzing Vit C content per serving to that of a Vit C product extracted from real food. This is because comparing Vit C content from the supplement panel doesn’t tell the whole story.

The more bioavailable a nutrient is, i.e., the more absorbable it is at a cellular level, the less of it is needed to accomplish its function. A person wants as much of that paycheck deposited into his/her account as possible.

The Newtonian model of reality tells us that synthetic ascorbic acid is essentially the equivalent to Vit C that is found in whole food. The molecular structure is the same, be it from a natural source or synthetically produced, so obviously this must be true we’re told. The quantum model of reality, however, tells us that the universe is made up of 99.9999% energy and that 0.0001% of that is physical matter. All particles have a frequency to them as they are always vibrating.<sup>24</sup> Even at zero Kelvin, absolute zero (-273.15°C), scientists cannot stop a particle from vibrating.

Nutrients that are made by Nature, inside of plants, have their own vibrational signature frequency that supports life. These natural, coherent frequencies are what our cells recognize to be resonant and harmonious. Frequencies do not exist in isolation in Nature. All the other wonderful nutrients in a plant, having their own unique signature frequencies, together with the Vit C, create a multidimensional matrix of frequencies, basically like that of a symphony. Imagine listening to Beethoven’s 5th Symphony (Symphony No. 5) on a single instrument. Obviously it’s not going to have the same effect on our senses as listening to the piece of music as when played by a full orchestra.

Synthetically manufactured ascorbic acid could, in theory, be a lot better than it is if the people manufacturing it paid attention to biomimicry and programmed the ascorbic acid with the natural frequency food-vitamin C carries. But, even still, ascorbic acid/Vit C needs its social support network (polyphenols, carotenoids, flavonoids, amino acids, minerals, and other vitamins) for maximum bioavailability. Does the Vit C supplement in your cupboard have its social support network intact? Indeed, some Vit C supplements contain added bioflavonoids, which is better than ascorbic acid on its own, but why go to the trouble of synthesizing Vit C and adding bioflavonoids when Nature has already provided us with whole foods that contain Vit C in this superior state, with its social network fully thriving?

## The Role of Vitamin C in Production of Collagen

Vit C is much more than just an antioxidant. It has been studied for its involvement in cell signaling and gene expression.<sup>25</sup> Vit C is also an essential cofactor in enzymatic reactions. In this way, it plays a role in the body’s production of collagen. The critical role Vit C plays in the maintenance of a normal mature collagen network is its ability to block the inactivation of lysyl and prolyl hydroxylase, two key enzymes in collagen biosynthesis.<sup>26</sup> It was shown that Vit C induced a dose-dependent increase in collagen type I deposits by

normal human fibroblasts in a cell model.<sup>26</sup> Vit C has gained growing interest in stem cell biology for its main functions and its effects on stem cells as Vit C can regulate the epigenetic signatures, the redox status, and the extracellular matrix (ECM) composition.<sup>27</sup>

## Recommended Daily Amount of Vitamin C

Most animals have the ability to biosynthesize all the Vit C they need within their bodies. Humans, on the other hand, lack the ability to produce one of the four enzymes (gulonolactone oxidase) necessary for synthesis of Vit C from glucose.<sup>28</sup>

Being a water-soluble vitamin, Vit C is not stored in significant quantities in our bodies, making adequate daily dietary intake essential. The current (as of 2016) Recommended Dietary Allowance for Vit C (as ascorbic acid) is 90 mg for adults and children greater than or equal to 4 years of age and 125 mg for pregnant and lactating woman.<sup>29</sup> There is much to suggest, however, that these amounts, while enough to prevent overt symptoms of scurvy, are insufficient for optimal health.<sup>30</sup>

The fact that urinary excretion of Vit C increases in times of stress, constant electromagnetic radiation exposure, pesticide exposure, heavy metal body burden, mold, fungus, bacterial, viral, retroviral co-infections, and fear of the unknown indicates that all of us could benefit from significantly increasing the amount of whole food Vit C in our diet.

Most humans do not consume even close to adequate amounts of Vit C-rich foods—fresh, organic fruits and vegetables—for optimum health. Quality whole food Vit C powders, like Truly Natural Vitamin C, are the perfect way to fill nutritional gaps and make sure we get enough quality Vit C in our diets.

## Truly Natural Vitamin C

Truly Natural Vitamin C provides highly-bioavailable, naturally-occurring Vit C from acerola cherry extract, whole camu camu berry, and whole amla berry.

### Why Truly Natural Vitamin C?

- 100% food-sourced; no synthetic/isolated nutrients. Vitamin C as Nature intended, for greatest bioavailability and resonance with the human body (compared to isolates).
- Comprised entirely of super fruits that offer broad-spectrum benefits (beyond just the vitamin C)
- Contains naturally-occurring cofactors that assist with assimilation
- Free of chemical solvents—water extraction (acerola) and whole fruit (camu camu and amla) only
- Lab tested for purity
- Packaged in amber glass packaging prevents vitamin C oxidation

### Version 3 Upgrades:

- Upgraded acerola cherry extract: More vibrant in taste and color and closer to whole food state (even more cofactors)
- Now includes whole camu camu and amla berry, adding more diverse cofactors and adaptogenic benefits
- Vitamin C has an even greater and more diverse 'social support network,' increasing bioavailability and effectiveness.

## Acerola, Camu Camu, and Amla:

### Superior Sources of Vitamin C (and so much more!)

#### Acerola Cherry Fruit (*Malpighia emarginata/glabra*)

Acerola is a tart cherry native to South America, southern Mexico, and Central America, but is now also being grown as far north as Texas and in other subtropical areas such as India. Acerola juice is as popular in Brazil as orange juice is here in the U.S. Acerola cherry has long been used in tribal and herbal medicine both as a natural remedy and as a nutritive aid.<sup>31</sup>

Acerola cherries are known to be low in calories, while being exceptionally rich in Vit C. In fact, one cup (98 g) of raw acerola cherries contains 1,644 mg of Vit C.<sup>32</sup> Eating as few as 2–3 raw acerola cherries is sufficient to fulfill daily Vit C requirements (90 mg for an adult<sup>33</sup>). Acerola cherries are also high in B vitamins, carotenoids and bioflavonoids, and alkalizing minerals—specifically

magnesium, potassium, iron, zinc, and calcium.<sup>31</sup> Most importantly, all the Vit C in raw acerola cherries is richly complex with all the necessary cofactors to produce functional vitamin activity in our body.

The acerola cherries used to produce Truly Natural Vitamin C are grown in Brazil. The fruits are harvested from their cultivated regions and the raw material undergoes quality control sampling, meaning they are analyzed by their physical-chemical characteristics for approval or rejection. The raw material is then turned into a pulp whereby the skin and the seed are removed. The pulp then goes through the extraction process and the pulp is macerated using purified water at room temperature, resulting in a liquid extract. After extraction, the liquid extract is filtered to remove all residues of plant material and then the liquid extract moves on to quality control again before it gets spray dried so that the liquid can transform into a dried extract. Lastly, the liquid extract gets spray dried onto a carrier (tapioca starch); this is how the liquid gets turned into a powder.

The tapioca starch keeps the acerola extract from clumping as fruit extracts, due to their hygroscopic nature, readily attract and absorb moisture from the atmosphere. The current industrial technology for spray drying a fruit extract necessitates using some kind of carrier. That is why there is tapioca starch in the product. There is nothing we can do about it; it just is what it is. We have a choice to go with non-GMO cornstarch or tapioca starch and we choose tapioca starch as many customers have expressed concerns over using any kind of corn derivative. The good thing is that we are transparent about the tapioca starch and choose to list it on the label as not all companies do.

The dried acerola extract then goes through quality control again and gets analyzed for its physical-chemical (density, moisture, pH, Vit C content), phytochemical, and microbiological characteristics. Vit C content is tested during final stages of quality control to guarantee strength. The final dried extract powder then passes through a magnetic metal detector for safety whereupon it receives the final stamp of approval.

Truly Natural Vitamin C is guaranteed by HealthForce, through 3rd party lab verification, to contain no less than 6% Vit C content. It is perfectly normal and acceptable for lab results to show higher results (e.g., 7–8%). Truly Natural Vitamin C powder contains 360 mg of Vit C per two teaspoon serving and Truly Natural Vitamin C capsules contains 374 mg of Vit C per 8-capsule serving.

Vit C on the market derived from acerola cherry tends to be standardized to 17% Vit C content and sometimes higher (22%). It can often put a tremendous amount of pressure on a manufacturer to guarantee this high number for each and every batch. Acerola cherries are a natural food and are subject to the laws of Nature, and, as such, Vit C content in the cherries can vary from season to season due to normal fluctuations in the growth cycle such as changes in rainfall, soil pH, and weather patterns.

Customers, not yet fully understanding the bioavailability concept vs big numbers of Vit C content on a label, drive the unrealistic expectation that food sources of Vit C need to be equal to that of isolated, synthetically produced Vit C—i.e., 500 mg, 1,000 mg Vit C. Due to this unnecessary market pressure, some acerola Vit C manufacturers choose to standardize their acerola extract by adding synthetic ascorbic acid. Who can blame them when under that amount of needless pressure? Truly Natural Vitamin C provides already naturally-occurring Vit C with no added synthetic ascorbic acid.

### **Camu Camu Berry Fruit (*Myrciaria dubia*)**

Camu camu berry fruit, known as “camu camu,” is a bushy riverside tree that produces small orange-red fruit, similar in size to that of a large cherry, with a tart flavor. Camu camu is rainforest food that grows primarily in South America in the Amazonian region. It can be found growing along the Amazon river banks. Like acerola, camu camu can be classified as a “superfruit” due to its phenolic complex, its high Vit C content, and its antioxidant activity.

The camu camu found in Truly Natural Vitamin C is sourced from Peru and is certified organic. It contains the skin to ensure that the full antioxidant phenolic complex is present.

Borges et al. (2014) reports that the total phenolic content in camu camu fruits is higher than in acerola fruits.<sup>34</sup> Among the phenolic compounds present in camu camu include flavanols, flavanones, anthocyanins, catechin, flavan-3-ol, C-glycosidic ellagitannins, and rutin.<sup>34</sup> Cyanidin-3-glucoside was identified as the major anthocyanin in camu camu fruit.<sup>34</sup> In addition, the fruits are rich in carotenoids, such as  $\beta$ -carotene, violaxanthin, and luteoxanthin. All-trans-lutein is the major carotenoid, ranging from 45% to 55% of the total carotenoid content.<sup>34</sup>

It is beginning to come to light that anti-inflammatory drugs disable the body's natural ability to detoxify, repair, and protect itself.<sup>41</sup> In an effort to reach for better-feeling multimodalities, some patients and physicians are beginning to move toward natural approaches such as lifestyle and dietary modifications to improve overall health, immune function, and the normal inflammatory



response and rid themselves of pharmaceutical medications.<sup>35</sup> As part of the dietary modifications, the addition of a quality camu camu supplement can prove beneficial.

According to Langley et al. (2015),

“The fruits are a substantive source of minerals, such as sodium, potassium, calcium, zinc, magnesium, manganese, and copper. They contain small amounts of pectin and starch. The major sugars are glucose and fructose. The fruits also contain a range of amino acids [serine, valine and leucine], organic acids (such as citric acid, isocitric acid, and malic acid), and fatty acids (predominantly stearic, linoleic, and oleic acid). Camu camu fruits are a major source of a range of bioactive compounds. These include many polyphenols (flavonoids, phenolic acids, tannins, stilbenes, and lignans). The compounds depend on the state of maturity of the plant. Total phenolic content is higher than that in a range of other tropical fruits, with a higher content in seeds and peel.”<sup>35</sup>

Camu camu is considered a secondary adaptogen. According to master herbalist and practicing clinical nutritionist Donnie Yance, who wrote the book *Adaptogens in Medical Herbalism* (2013), secondary adaptogens meet most, but not all, of the criteria of primary adaptogens.<sup>36</sup> Primary adaptogens (like the amla berry present in Truly Natural Vitamin C) meet very specific criteria and have solid scientific research validating their use as adaptogens.<sup>36</sup> Although secondary adaptogens demonstrate some normalizing activity, especially of the immune, nervous, and hormonal systems, they may not directly support the HPA axis.<sup>36</sup> The protective effects of secondary adaptogens come with regular use when combined with primary adaptogens.<sup>36</sup>

Camu camu, because of its important antioxidant function, has been studied for its potential to counteract premature cell damage in cells exposed to extremely low frequency magnetic fields (ELF-MF). A study on mice suggests that camu camu could be used as a natural ELF-MF protector in those with already healthy cells.<sup>37</sup>

Oligomeric proanthocyanidins (OPCs), also known by other names such as proanthocyanidins, are the most powerful natural free radical scavengers known.<sup>38</sup> As a bioflavonoid complex, they increase the effectiveness of Vit C. They were discovered by the French scientist Dr. Jack Masquelier in 1947 while studying the red skin of the common peanut. Dr. Masquelier demonstrated that OPCs are, in fact, vitamin P.<sup>39</sup>

OPCs are responsible for camu camu's red color. OPCs and the work of Dr. Masquelier are the reason why grape seed extract (present in Antioxidant Extreme™) and pine bark extract are so popular. Their therapeutic effects are well established and documented. When OPCs combine with proteins they give the effect of astringency and are responsible for the “puckery” sensation when camu camu with skin, tea, or red wine comes in contact with saliva and the inside lining of the cheeks and the floor of the mouth (mucosa tissue). Proanthocyanidins (OPCs) are the main phenolics in the skin of camu camu.<sup>40</sup>

### **Amla Berry Fruit (*Phyllanthus emblica/Emblica officinalis*)**

Amla, also known as Indian gooseberry or amalaki, has thousands of years of traditional use and is considered one of the most nutrient-dense medicinal fruits in the world and, as such, is revered as a wonder berry. It is regarded as a traditional immunomodulator and a natural plant adaptogen.<sup>41</sup> All parts of the amla plant are used for medicinal purposes. Although special focus has been placed on the attributes of the fruit, when we look to the Indian traditional system of medicine, Ayurveda, amla has been used as a potent Rasayana (rejuvenative and restorative tonic).<sup>42</sup>

Amla's energetics are such that it is cooling in nature and therefore it is good for people who tend to overheat and run too hot.<sup>43</sup> It can assist in adapting to the heat and is traditionally used as a summertime tonic in areas where the weather can get unbearably hot.<sup>43</sup> This adaptogenic berry is classified as sour, astringent, sweet, pungent, bitter, and cool.<sup>43</sup> These properties are said to affect the lungs, liver, stomach, and heart.<sup>43</sup> Amla berry is a wonderful ally for anyone wishing to stay cool as a cucumber!

Amla is one of the richest native sources of Vit C and flavonoids and also contains vitamins E and B complex as well as carotenoids.<sup>43</sup> Its therapeutic action is attributed to it being a rich source of gallic acid and many medicinally-known phytochemicals such as tannins, lignans, flavonoids, alkaloids, Vit C, mucic acid, and ellagic acid.<sup>44</sup> Besides its Vit C content, amla's antioxidant and stress-protective activity is due to its unique tannins, referred to as tannoids.<sup>43</sup> The amla berry found in Truly Natural Vitamin C is sourced from India, still contains the skin, and is certified organic.

**Suggested Use:** Take as food, 2 teaspoons (6 g) or 4 VeganCaps™ (6.2 g) per day, or as advised by a qualified health care professional. Store at room temperature away from direct light. Mix with naturally structured water, fresh juice (e.g., green juices), lemonades/limeades/aloeades, hibiscus tea, smoothies, Vitamineral Green™, Integrity Extracts™ Shisandra, or Integrity Foods™ Moringa.

**Suggested Adjuncts:** A whole food, organic, plant-based, balanced diet with emphasis on choosing foods as guided from the Present Moment; high-water-content fresh, raw/live foods (eat to hydrate) and cultured vegetables; naturally structured water, Vitamineral Green™ and Earth Broth™, Liver Rescue™, MycoForce™, Integrity Extracts™ Schisandra, Antioxidant Extreme™, exercise (try rebounding) and dancing, plenty of fresh air (get lots of plants), Earthing in a safe place, plenty of safe sun exposure, adequate sleep/rest in a low-EMF environment, quieting the mind and getting heart-centered, and everything else that brings joy!

VeganCaps™

<b>Supplement Facts</b>		
Serving Size: 8 VeganCaps™ (6.2g)		
Amount Per Serving		% Daily Value
Calories	25	
Total Carbohydrate	5 g	2%*
Total Sugars	<1g	†
Vitamin C	374 mg	416%

\* Percent Daily Values are based on a 2,000 calorie diet.

**Ingredient:** Acerola Cherry Fruit Extract∞, Camu Camu Berry Fruit∞, Amla Berry Fruit∞  
**Other Ingredient:** Tapioca Starch (drying medium for the Acerola)∞, VeganCaps∞ (fermented tapioca) – no flow agents

Powder

<b>Supplement Facts</b>		
Serving Size: 2 teaspoons (6g)		
Amount Per Serving		% Daily Value
Calories	25	
Total Carbohydrate	5 g	2%*
Total Sugars	<1g	†
Vitamin C	360 mg	400%

\* Percent Daily Values are based on a 2,000 calorie diet.

**Ingredients:** Acerola Cherry Fruit Extract∞, Camu Camu Berry Fruit∞, Amla Berry Fruit∞  
**Other Ingredient:** Tapioca Starch (drying medium for the Acerola)∞

## Citations

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## Additional Resources

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2. “Germs” Help The Body Produce Vitamin C: Breakthrough Discovery.  
<https://www.greenmedinfo.com/blog/germs-help-body-produce-vitamin-c-breakthrough-discovery>
3. Dr. Thomas E. Levy’s Website  
<https://www.peakenergy.com/index.html>
4. Kathleen Barnes: The Real Vitamin C  
<https://kathleenbarnes.com/the-real-vitamin-c/>
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6. The Suggested Optimal Daily Nutritional Allowances (SONA)  
<https://www.aunaturalnutrition.com/uploads/1/7/2/5/17259806/sonas.pdf>
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9. Ascorbic Acid Is Not Vitamin C – Whole Food Vitamins  
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<https://doi.org/10.1104/pp.66.5.823>
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