

The Center for the Study of Cultures in Guatemala (CECEG) of the University of San Carlos of Guatemala was originally established on July 8, 1967. Science, like life and society itself, is in constant change and development. In response to the new challenges of multidisciplinary research on cultural dynamics, the University of San Carlos de Guatemala embarked on a new phase for the center on July 24, 2019. This new mandate was approved by the Honorable Superior University Council in "point SECOND, Section 2.1 Subsection 2.1.1 of the Minutes No. 18-2019 of the ordinary session held on July 24, 2019." Its purpose is to study culture from a holistic, dynamic perspective, in constant construction, and as the foundation for the development of Guatemalan society in a contemporary context, characterized by the global interrelation of different cultural expressions. This purpose is achieved by enhancing the inherited tradition of studies previously known as "folkloric," and responding to the need to understand and study the complexities of current cultural dynamics.



Moringa, uses and benefits

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Resumen

La moringa ha sido utilizada por muchos años, en algunos lugares se utiliza como suplemento alimenticio y en otras partes como una medicina alternativa. El caso de Mixco presenta ambos usos. Es comercializada como suplemento alimenticio por su alto índice de vitaminas y minerales que ayudan al cuerpo. A su vez, es ofrecida como una alternativa para curar ciertas enfermedades relacionadas con el deterioro del sistema inmune. Dentro de la medicina tradicional, la pervivencia y uso de plantas medicinales, está directamente relacionada con la eficacia en su utilización. Lo mencionado se observa en los distintos testimonios de las personas que en este caso utilizan moringa. Las distintas presentaciones varían dependiendo de su valor económico. Al momento de utilizarla como suplemento alimenticio no es diferente una cápsula al día o infusión a base de sustrato de hojas. La importancia de su consumo se relaciona con las vitaminas y energía que proporciona a las personas. Es por ello por lo que se obtienen comentarios positivos de esta planta. En forma general, las personas que la consumen reportan una mejora en calidad de vida y estado anímico general. Por ello la importancia en describir los lugares de Guatemala donde se consume y comercialice esta planta.

Palabras clave: Moringa, medicina tradicional, Mixco, enfermedades, alternativa

Abstract

Moringa has been used for many years, in some places it is used as a food supplement and in other places as an alternative medicine. The case of Mixco presents both uses. It is marketed as a food supplement for its high index of vitamins and minerals that help the body. In turn, it is offered as an alternative to cure certain diseases related to the deterioration of the immune system. Within traditional medicine, the survival and use of medicinal plants is directly related to the effectiveness of their use. The aforementioned is observed in the different testimonies of the people who in this case use Moringa. The different presentations vary depending on their economic value. When using it as a food supplement, one capsule per day or infusion based on leaf substrate is no different. The importance of its consumption is related to the vitamins and energy it provides to people. That is why positive comments are obtained from this plant. In general, people who consume it report an improvement in quality of life and general mood. Hence the importance in describing the places in Guatemala where this plant is consumed and marketed.

Keywords: Moringa, traditional medicine, Mixco, Diseases, alternative medicine

Moringa, the case of Mixco

Information on the use and adaptation of moringa is presented below. When an element of a foreign culture is assimilated and put into practice as part of daily behavior, it is necessary to describe it and explain its origin.

Anthropologist Valle de Frutos (2010) considers that transculturation is a process through which civilization evolves, and merges with other cultures, influencing one another, and in turn, creating new identity processes toward one or several elements.

As described below, moringa is an example of a foreign element that has been assimilated, commercialized, and adopted as part of the alternative or supplementary medicine diet in the households of Mixco's people.

Cultural phenomena today are in large periods of transculturation due to the influence of digital media, and social pages, among others. The world as we know it is becoming increasingly fast and changing.

Today, traditional medicine has incorporated new methods that people from rural and urban areas have adopted as their own. This can range from the use of Western medicine, combined with methods of alternative medicine from other cultures.

The history of moringa use, as mentioned by Mahdi (2015), dates back 1500 years before the time of Christ. It is known that it was brought to America by the Spanish as an exchange in the

Philippines as part of the cultural exchange process between regions and countries. This plant was introduced in the 19th century. As Aria (2014) mentions, the Spaniards conducted exchanges on the island of Nao in the Philippines, and from this exchange, the healing properties of the plant began to be identified. Therefore, its name varies depending on the region where it is sought.

The variety of names, both in English and vernaculars, illustrates the many uses assigned to the tree and its products. In some places, it is known as the "drumstick tree" due to the shape of its pods, which are one of the main food products in India and Africa. It is also known as the horseradish tree because of the taste of its roots, which the British used in India as a substitute for wild radish. In some parts of East Africa, it is known as "mother's best friend," a name that indicates people are well aware of the tree's value (Folkard & Sutherland, 1996, p. 1).

Moringa's case is interesting due to its history and origin, coming from India and being friendly to cultivate in almost all parts of the world, an ally of natural medicine that has quickly been adopted as part of diets or remedies that many might call "home remedies." Among its physical characteristics, it is notable for the great height it can achieve in twelve months, and the richness of its fruits is as usable as its leaves.

Short, slender, deciduous tree, perennial, reaching 7-12 meters in height and 20-40 centimeters in diameter, with fragile branches and shoots, and cork-like bark. The leaves are compound, arranged in groups of leaflets with five

pairs of these positioned on the main petiole and one leaflet at the terminal end. Bisexual flowers with white petals and fragrant yellow stamens. The fruit is a trilobed, dehiscent capsule, elongated and slender in the form of a pod, 20-60 cm long, containing 12-25 seeds per fruit (Gonzalez & Bordas, 2008, p. 5).

The quoted text refers to the physical characteristics of the moringa tree. This can be observed in both crops, photographs, and the distinctive powder produced by pulverizing its leaves.

Trade and Utilization of Moringa

The richness of moringa is well-known among Mixco's residents. Its multiple properties as a dietary supplement have been well utilized by them.

Observing the aisles of Mixco's central market, one can see several stalls for the distribution and sale of moringa. The vendors are mostly young people between the ages of 18-34. Despite their youth, they are knowledgeable about the multiple uses of moringa. As the interviewees mentioned, moringa has many characteristics that benefit the human body in many ways. This information can be weighed against research that supports this technical knowledge related to the properties of moringa.

Fresh moringa leaves have great nutritional qualities: more vitamin A than carrots, more vitamin C than oranges, more calcium than milk, more potassium than bananas, more iron than spinach, and more protein than any other vegetable. They are also highly sought after,

they can be used to prepare infusions, green salads, snack pastas, sauces, soups or creams, stews, stir-fried rice, fritters, and dressings in general. They can be mixed with juices or fruit cocktails, various egg dishes, and children's purees, among other variations, which would significantly enhance the nutritional value of these foods in terms of proteins, vitamins, and minerals. These leaves can be dried in the shade and preserved whole or ground. In the latter variant, the powder lasts for months without losing its properties, and it is useful as a condiment or can be added to soups, broths, and juices, among others. The flowers are rich in calcium and potassium, can be eaten raw or cooked, accompanying salads, soups, other dishes, and as infusions. From the seeds, an oil similar to olive oil is extracted, which is very good for salad dressings. The seeds, tender and boiled in water, are similar to chickpeas; dried and toasted, they resemble peanuts. The fruit is a pod or triangular capsule, widely consumed in the form of stews, famous for its aphrodisiac properties, rich in proteins, essential amino acids, and multiple vitamins (Ruiz & Rivera, 2016, p. 17).

Due to the aforementioned, people who use moringa report improved overall health. Individuals mention that their health has significantly improved by consuming moringa daily. The general improvements mentioned are reduced anxiety, strengthened defenses against minor ailments like colds or flu, increased daily energy, and a general sense of well-being.

Similarly, they comment on the benefit that older adults reflect upon starting the consumption of this plant.

One of the interviewees, Juan Alejandro Rodríguez, 67 years old, mentions:

I started with moringa capsules more than two years ago, but then I got stomach problems because I have gastritis from the pills I take for my back pain... now I take it as tea once a day, and you wouldn't believe how much it helps me. I don't get sick as often as before, and my doctor says that if I feel it helps me, I shouldn't stop. That's why I always come once a week to get my bag of moringa (Rodríguez, 2019).

When describing how the moringa merchants at Mixco's central market acquired their knowledge about the healing properties of moringa and how this knowledge is transmitted within this community group, they mention that moringa has quickly increased in demand and use by the people of Mixco's community. On their own initiative and for economic benefit, the vendors offer some advice on how to take this natural ally.

-Rosemary infusions for its expectorant properties, moringa, vitamins, and minerals with a bit of chamomile to help reduce discomfort caused by an ailment.

-Aloe vera juice with papaya for gastritis or irritable colon with a tablespoon of moringa powder to strengthen the immune system (Rivera, 2019).

The conclusive knowledge from traditional medicine users through experimentation and observation. They can be recognized if they're supported by experiments that validate what

Mixco's oral tradition contributes today. Olson (2011) describes the experiment with rats and *moringa oleifera*, where the rats were divided into four groups. The first received normal food without vitamin A, the second only vitamin A supplementation, the third was fed with dried moringa leaves, and the fourth group received normal food. After 40 weeks, the rats that were fed vitamin A supplements maintained optimal levels, but those that consumed dried moringa leaves not only maintained optimal levels but also gained weight due to the protein they contained. Therefore, it was conclusive that moringa used to counteract vitamin deficiencies or, better yet, used as a supplement, indicates an improvement in blood levels and consequently overall health.

The above is an example of tests that have been conducted to verify the nutritional value of moringa and its benefits compared to everyday foods. This is the greatness of the plant in daily consumption, as it improves people's physical condition, and for this reason, its consumption has expanded. Briefly speaking with young people in the aisles of Mixco's market about the use of moringa, they report that using moringa has benefited them in terms of improved exercise performance and maintaining a healthy weight.

Consumption became popular thanks to digital media available to young people today. Alejandra Escobar, 22 years old, comments:

I use moringa because it works... since I started taking it every morning with my

banana smoothie before going to the gym, I see that it helps me finish my entire routine a lot. My eating habits are not as high as before, and I have lost weight, which means it also helped me lose weight, and now I've been consuming it for six months. But I take it in powder form because it lasts longer (Escobar, 2019).

This is an example of many that show how knowledge about an element not native to Guatemala is transmitted; it has been adopted, commercialized, and disseminated through oral tradition and digital media.

Generations aged 18-34 are more prone to being influenced by social media. Today, there's a strong emphasis on maintaining and improving physical appearance. Likewise, the use of vitamins or supplements to enhance gym performance is highlighted. Therefore, part of the introduction and popularity of moringa use among the youth population is due to its utility as an alternative source of nutrition and physical enhancement.

Millennials, the generation born between 1980 and 1995, navigate differently when seeking information, watching content, or communicating with others, thanks to the evolution of technology and the emergence of the Internet. Societal changes have also been key to making this generation different from others: growing up in a favorable economic environment with great cultural diversity around them shaped these (now) young people to develop values and a way of seeing life in line with social evolution. Consequently, social media has become one of the most important

communication channels and millennials use it to connect to an infinite network of contacts and content (Marqués Ahuir & Díez Somavilla, 2017, p. 6).

Due to the aforementioned, it is interesting to observe that young people seek information depending on their needs and goals. Therefore, this section combines relevant information regarding the properties and use of moringa and how it is utilized by the population of Mixco, with an emphasis on young people.

The elderly population uses moringa as a source of vitamins and minerals in addition to medications they currently take for various ailments due to their health condition.

Consumption of moringa

The presentations vary from capsules, roots, dried leaves, and even moringa oil. Depending on the intended use, the different vendors will recommend their purchase accordingly.

From the various interviews conducted with merchants at the Mixco market, here are excerpts from the most important comments:

David Rivera, 25 years old, comments:

Moringa can come in capsule, leaf, or root form for tea; it has various presentations. We even sell it with flaxseed shakes, cat's claw, and other ingredients. The preparation varies, as does its presentation, especially for tea, because the leaf is taken, dried, and made

into a tea preparation that is more for strengthening the immune system. Now, the capsule takes another process, because it involves first drying the leaf, grinding it, and then filling the capsule. If it is for vitamin supplementation or to help with more physical activities, it is recommended to take the capsule twice a day, along with a tea made from moringa root, because the latter helps the body relax and recover. Here we do not sell it as a dietary supplement, because for me a dietary supplement would be like other branded vitamin products that provide protein, vitamins, and so on. In contrast, moringa does contain a lot of what would be in one of these supplements, but it also cleans the blood, prostate, and kidneys. It helps with fatty liver, and if you have high blood sugar, it lowers it, among other benefits. Here, most of all, we sell the leaf because large sacks are brought here, and we dry and put them in capsules. However, older people prefer to buy a bag of leaves to prepare their infusions at home. The capsules are more for young people, I feel, are the ones who seek out that presentation more.

This information is consistent. In a 2013 study on plant enhancers, it is mentioned that the moringa plant possesses minerals and vitamins that help activate the cell's defenses to combat free radicals.

Extracts from fruits and seeds used over a prolonged period have been shown to protect against DNA (deoxyribonucleic acid, the genetic material of every living being) –Burriel, SF, p. 1) associated with aging. The same research mentions fatty acids, including omega-3s, which help improve inflammatory conditions, specifically in the bronchi.

In additional studies, Gómez (2004) mentions that the leaves have a purgative action on the kidneys and hemorrhoids, helping to reduce fever and pain associated with diseases in these organs. Diluted root, taken three times a day in infusion solutions, helps with earaches. Moreover, the seed has protective characteristics and has been shown to reduce liver lipids, as the author notes. It also acts as a stimulant in reducing inflammation in muscular diseases, tumors, and cholesterol.

Social behavior

Moringa's case as part of traditional medicine in Mixco, as it is known and used due to social behavior and how this is reflected in people's culture, its function as described by Alport (2007) is when a social or adaptive element can serve a specific purpose. The nutritional properties and commercial advantages of this plant have facilitated its introduction and use in Mixco's community. The attitude towards positive elements achieved, in the case of Mixco, is health and commerce, which benefit from being more accessible to consumers than a pharmacological product.

Los resultados positivos que son observados en las personas que consumen moringa es trasladado por medio de la oralidad y la experiencia compartida. Esto a su vez refuerza su utilización y difusión:

People express their opinions on topics that affect their daily or personal lives. This expression of opinions often comes with

behavior toward our matters, allowing others and ourselves to understand our attitudes and relate with groups that share similar thoughts and feelings, thereby satisfying the basic need for acceptance and group belonging. This function we obtain with attitudes is called the function of value expression (Biñol, 2007, p. 11).

The previously described social dynamics are observable in elements of traditional medicine. This is due to a positive reinforcement behavior that begins in people's homes through parenting patterns. Doctors and medicinal plants are utilized and accepted because of this attitude of expressing positive values. People are more likely to continue positive behavior than negative, or simply replicate actions that produce favorable results in other individuals.

Added to this is the concept of "belonging" (Ibarrola, 2012), which establishes the repetitive behaviors of groups concerning one or several specific elements:

Various works agree in noting that the feeling of belonging has become a category framed among human needs and encompasses the various ways in which people feel recognized. This personal dimension is related to the belonging hypothesis, which has exerted and continues to exert a great influence on the research of affects and processes of bond development. This hypothesis incorporates relational factors, and personal and social ties, especially the so-called strong bonds with family and friends (Ibarrola, 2012, p. 107).

Feeling a sense of belonging with a specific group of people reinforces and helps replicate various behaviors, whether good or bad, depending on individual orientation. However, in community observations, there are always generalized behaviors related to one or several elements; in this case, it is the use of moringa.

Often, the development of these behaviors begins in childhood and simply persists during it, eventually disappearing over the years. However, on other occasions, their consequences extend into adulthood, where they can be much more intense and severe (Pinazo, 2014, p. 8).

Based on the aforementioned, and in this text, the concept of health is described, with most Mixco families educating their children to seek full health in life. This is further enhanced in the current era. Young people seek methods that promote their health while taking care of their economic situations. It is interesting to observe and understand how parenting patterns are reinforced by current trends and, in turn, impact a healthy lifestyle for young people and adults. This social behavior is reinforced by testimonies from older individuals, who in turn encourage young people to find alternative methods for improving their health. This type of social behavior is characteristic of this area of Guatemala, and it is expected to be observed in other regions of the country. Moringa, as an element of traditional medicine, is established as an ideal resource for enhancing people's health due to the vitamins and minerals it provides. Moreover, its use is recommended to help the body in situations of stress or dynamic activities such as exercise.

Personal Comment

Based on the information gathered, it can be confirmed that moringa presents an opportunity for both young and adult individuals as a source of vitamins and minerals. The benefits derived from this natural ally also extend to emotional states. Individuals who feel physically well will automatically manifest healthy emotional states. Culturally, it acts as a bridge in enriching non-native elements of Guatemala that are positive for the general population and possess both commercial and health applications. Elements like moringa are important for isolated studies of phenomena impacting Guatemalan culture. Traditional medicine benefits from the constant search for natural resources that are more accessible due to their economic cost and natural occurrence, as opposed to pharmacological substances from laboratories, which are more expensive. Therefore, moringa can now be considered part of traditional Guatemalan medicine.

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Figure 1. Medicinal plants: moringa, eucalyptus leaves, chamomile. (García)



Figure 2. Mixco's Market, moringa sale. (García)



Figure 3. Capsules of moringa, various presentations, Mixco's Market. (García)



Figure 4. Presentation of moringa for sale in Mixco's Market. (García)



Figure 5. Presentation of moringa leaves for tea, sale in Mixco's Market. (García)



Figure 6. Presentation of moringa leaves. (García)



Figure 7. Presentation of moringa for tea. (García)



Figure 8. Presentation of moringa powder. (García)

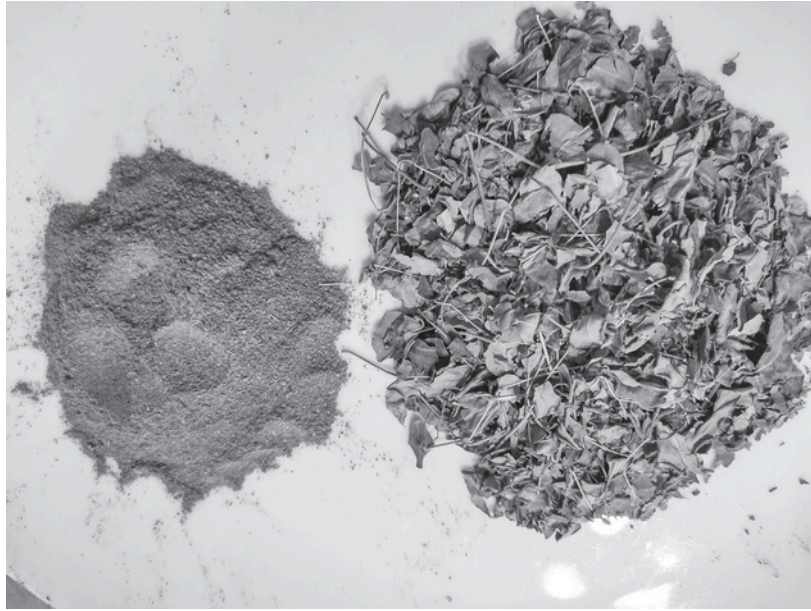


Figure 9. Comparison of moringa, powder and leaves. (García)



Figure 10. Presentation of moringa in water for drinking. (García)



Figure 11. Presentation of moringa in water for drinking while fasting. (García)