

Nepalese *Swertia chirayita*

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Information on Product

Nepal is a country located in South Asia that is full of natural resources and is especially rich in medicinal plants (UNEP, 2012). In fact, it is home to 700 species of medicinal plants, about 250 of which are endemic to the country (UNEP, 2012). However, *Swertia chirayita* is considered to be one of the most valuable and has actually been listed as one of the top priority medicinal plants of Nepal, as well as of Asia, providing the country with many economic and health benefits (Chhipi, 2013). This plant is endemic to the Himalayas and grows in the temperate belt of the mid-hill mountain region between 1500 to 3000 meters above sea level (Tanka, 2012). It flourishes well in high humidity areas, long monsoon periods, sandy to silt loam soils under sparsely dense trees (Tanka, 2012). It has also been introduced into community forests and can now be grown alongside agricultural crops (UNEP, 2012). It is an erect plant; normally 1.5 m tall, with a robust stem, broad leaves, greenish-yellow flowers tinged purple, and has small capsule fruit (Tanka, 2012). *S. chirayita* is a complex medicinal plant that contains diverse bioactive chemical compounds and properties that have been shown to cure over two dozen diseases, disorders and ailments and can improve the livelihoods of many (Tanka, 2012; Chhipi, 2013).

Benefits to Nepal

Health Benefits

Medicinal plants have always played an important role in helping populations maintain a healthy lifestyle, and that is still very much the case today (Tabassum, 2012). It is only in recent times that traditional western medicine has become available to those living in Nepal's rural

areas and although this has reduced the reliance on natural plant remedies, medicinal plants are still extensively used due to the strong belief in their effectiveness as well as the continuing limited supply of allopathic medicines in many rural mountainous regions (UNEP, 2012). In fact, in developing countries, including Nepal, 80% of the population still completely relies on medicinal plants as their primary source of healthcare (Tabassum, 2012). Therefore, it is no surprise why *S. chirayita* is so popular especially since it has been reported to have numerous medicinal effects (Tabassum, 2012). *S. chirayita* has been reported to be a remedy for ulcers, gastrointestinal diseases, skin diseases, cough, hiccup, liver and kidney diseases, neurological disorders, and urinogenital tract disorders (Tabassum, 2012). It is also an important ingredient in many traditional Hindu health tonics, supplements, anti-diabetic and anti-cancer preparations, liver tonics, skin creams, soaps and even hair oils and is utilized extensively in the Eastern traditional medicine, as well as the local healing in Nepal (Phoboo, 2010). Therefore, it is clear that *S. chirayita* offers many health benefits to the populations of Nepal and is able to continue to treat those who have limited access to allopathic medicines (UNEP, 2012).

Economic benefits

Due to *S. chirayita*'s superior medicinal properties, it has become a highly demanded product in the international market, playing a dominant role in trade (Chhipi, 2013). While Nepal's exports remain below USD \$1 billion, the agricultural sector accounts for about 40% of the GDP (UNEP, 2012). Additionally, *S. chirayita*'s market value has been increasing at an estimated rate of 10% every year, leading to more exports and economic growth for Nepal (Tabassum, 2012). In fact, Nepal exports about 50% of the world's total traded volume of dry *S. chirayita* with the major buyer being India (about 70%) (Tanka, 2012). However, while studies show that a large percentage of the product's exports already go to India, there is still an unmet

demand and the supply gap is estimated to be 95.1% (UNEP, 2012). Therefore, a large market demand gives *S. chirayita* the potential to contribute to the country's economic growth (UNEP, 2012). But unfortunately, compared to neighbouring countries, Nepal's economic growth has not been very high and poverty is still widespread (UNEP, 2012). Furthermore, traders usually sell the product without transforming it in any way (UNEP, 2012). Thus, most of the value-added processes occur outside of Nepal, resulting in low prices for collectors and producers (UNEP, 2012).

S. chirayita also has the potential to generate income for those populations living in the mid-hill regions of Nepal by creating job opportunities (UNEP, 2012). The selling of this product in the international market is an important source of cash income for traders, collectors, and growers (Tanka, 2012). In fact, studies suggest that medicinal plants, such as *S. chirayita*, can be considered cash crops and contribute to the socioeconomic development of rural people, especially those living in the mid hill regions, and can provide up to 50% of the family income (Humagain & Shrestha, 2009). There are persisting levels of poverty, particularly in Nepal's rural mid-hills region, but because *S. chirayita* is also found in these same regions, the growth in production and trade helps make important contributions to the livelihoods of those living there (UNEP, 2012). Additionally, local collectors and harvesters of this product usually come from disadvantaged groups such as children, women and the elderly (UNEP, 2012). Thus, the selling of *S. chirayita* has great potential to reduce poverty amongst the most vulnerable of groups and increase the nation's social equity (UNEP, 2012).

Negative Issues Surrounding Product

However, while there may be a high demand of *S. chirayita* due to its important medicinal aspects, populations in the wild are being depleted faster than their ability to regenerate due to over-harvesting and lack of conservation and cultivation (Chhipi, 2013;Tanka, 2012). For these reasons, the International Union for Conservation of Nature (IUCN) has categorized this species as vulnerable (Tanka, 2012). Additionally, due to a lack of information on market demand and prices, Nepalese collectors and/or sellers of *S. chirayita* receive much less than their fair share of the value of their products (UNEP, 2012). Furthermore, there is a lack of support and investment in improving the quality of Nepal's BioTrade products so traders and exporters often do not follow proper quality practice which makes the product less competitive in the international market (UNEP, 2012; Tanka, 2012).

Recommendations

Because *S. chirayita* has many valuable benefits, an urgent need has been felt to conserve this product and maintain its long term use on a global scale (Chhipi, 2013). To do so, the United Nations Environment Programme (UNEP) has made many recommendations that the government, organizations and businesses should follow such as: better marketing channels, improving access to credit and technology to help meet quality requirements, promoting sustainable harvesting through awareness and research, getting private enterprises to adopt international standards, and getting the royalties paid to collectors to correspond with market prices (UNEP, 2012).

Export Potential

Because more than 25% of prescribed medicines in developed countries derive directly or indirectly from medicinal plants, and because there is a growing demand in the Western world and amongst Asia's middle class for natural and organic products, it is clear that there is a potential market for *S. chirayita* in Canada and countries alike, especially with its superior medicinal properties (Tabassum, 2012; UNEP, 2012). Although, while this product may offer many health benefits to the importing countries, it still has many obstacles to overcome to guarantee successful trade (UNEP, 2012). For instance, currently *S. chirayita* is not very economically sustainable without subsidies or aid due to the country's inadequate infrastructure, such as limited access to electricity, transportation facilities, water and technology. *S. chirayita* is a bulky product and transporting it from Nepal's hilly and mountainous terrain to the lowland markets involves costly methods. Additionally, the country's Organic Certification Nepal (OCN) is not internationally recognized and lack of quality control makes obtaining international certification difficult. However, in some areas *S. chirayita* has been promoted by the Nepal government and is cultivated by community forest user groups (CFUGs) to better manage biodiversity and improve upon poor harvesting practices (UNEP, 2012).

If these obstacles can be overcome, an important potential Canadian buyer could include Purity Life Health Products, which is currently Canada's number one natural health products distributor, as well as other popular natural health companies (9). One of the most promising being St. Francis Herbal farm which is located in Combermere, Ontario and will be discussing the additional of *S. chirayita* products at the next new product meeting (Vanderheyden, 2014). However, when in contact with Terry Vanderheyden, who is the medical advisor and director of research and development for St. Francis Herbal farm, hesitation in carrying this product was

expressed due to the herb's narrow dosage range (therapeutic vs. toxic) as safety is the primary concern (Vanderheyden, 2014). Thus, in order to guarantee a successful market for *S. chirayita* in Canada and abroad, changes must first be made (UNEP, 2012)

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