

STEVIA: ISSUES OF A PLANT WITH A FUTURE



The European Commission finally gave its approval for the sale of a new natural sweetener, stevia, on 14 November 2011. The approval, which allows for the production and sale of the product continent-wide is, however, only the latest phase in the history of this miraculous plant that has been consumed by the Guarani Indians of Paraguay for centuries.

The economic stakes of this decision are in line with the recognised benefits of the wild herb. For years, stevia production has been eagerly awaited by some and feared by others because it opposes different visions of the world: industrialisation and patents on one hand, and the protection of an indigenous natural and cultural heritage on the other. Stevia crystallises today's issues about the best global food model to adopt and its impact both in terms of development and public health.



© Hebam3000

A poorly understood treasure

Stevia is quite an amazing product, so much so that it is somewhat astonishing that it took so long for its commercial production (and marketing) to come into Europe .

Originally from South America, the plant grows wild on prairies and mountains in a semi-arid climate. It is a member of the Asteraceae family, which includes about 240 species of aromatic herbs and small trees, some of which contain high concentrations of natural sweeteners¹.

The *Stevia Rebaudiana* Bertoni variety (whose generic name is stevia) **is by far the sweetest plant in the world.**

The Guarani Indians of Paraguay have used it for centuries to sweeten their hot drinks.

Brought to Europe by Spanish conquistadors in the 16th century, the miracle herb did not experience the development it deserved and sugar cane remained the first choice at the tables of the Old Continent for centuries. It would take until 1899 for its properties to be scientifically proven by Doctor Moisés Santiago Bertoni (1857-1929), a botanist from the Italian part of Switzerland, who explored Paraguay for years in search of rare, unidentified plants.

Europe, far behind

Stevia returned briefly to front stage during the Second World War when the Allies considered using it as a substitute to counter sugar shortages. The project failed for technical production reasons². Although stevia was absent in Europe for many years after these failures, this was not the case in the rest of the world.

It has long been consumed in its original plant form in Latin America and the plant's active sweetening agents, steviolosides, were first extracted in Japan in the 1970s. The archipelago's supermarket shelves were soon stocked with boxes of stevia, all the more quickly because the country forbade the consumption of synthetic sweeteners suspected of being carcinogenic. The product was then sold in Korea, China, Thailand and Israel.



Scientifically proven benefits

Europe and the United States spurned stevia for decades. Yet, scientific studies carried out on the plant both confirmed its high sweetening power (15 times greater than conventional sugar for stevia leaves and 100 to 300 times greater for extracts of the plant³) and highlighted its nutritional and therapeutic virtues. Following clinical trials, the European Stevia Research Centre (ESC - European Stevia Center) at the Catholic University of Louvain (KULeuven) demonstrated that it was 100% natural and harmless "even given prolonged use" making it "an ideal sweetener for children (since it does not lead to dependency)" and an "absolutely safe product for diabetics" (and for others suffering from other specific dietary syndromes).⁴ From a medical standpoint, stevia consumption apparently helps to reduce high blood pressure and blood glucose levels and stimulates the production of insulin and tones up the heart.⁵

Unexplained delays

Following approval in the United States in 2008, it was finally Europe's turn to open up to stevia. The road to our continent was very long and some of its twists and turns are still hidden in shadow. **Why did the European Union only approve stevia in the past few months despite the fact that its nutritional and therapeutic benefits have been defended since 1997⁶?**

The reasons for the delay are difficult to pinpoint precisely. While European authorities have put forth the principle of precaution (which requires proving the harmlessness of a product before bringing it to market), many associations question the European Union positions in applying the principle to other products such as GMOs, for example. However, aspartame has been the main target of criticism for several years. It has been suspect because of the opacity that surrounded its bringing to market⁷.

The famous chemical sweetener produced by the pharmaceutical company G.D. Searle has been accused of having harmful side effects on the health of people who eat it in excessive quantities (cancers, risk of premature births, etc.)⁸. However, as significant as they are, these accusations have been rejected by the European Food Safety Authority, who feels that the studies on which the accusations are based do not justify "a review of prior assessments of aspartame or other sweeteners currently allowed in the European Union."⁹



Winning over consumers

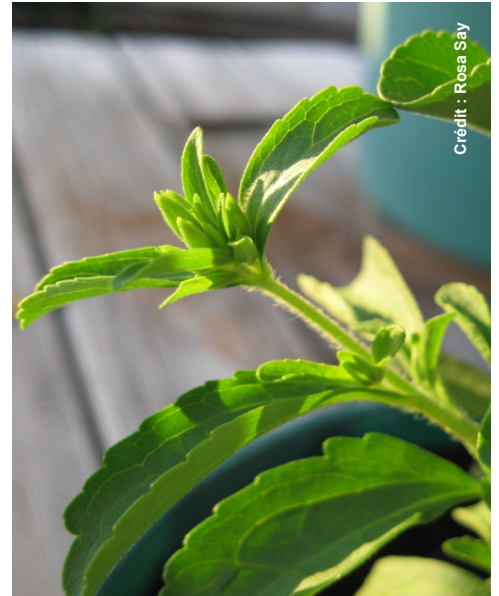
Stevia is now in the media spotlight and is arousing the interest of a wide range of players. Agrifoods industrialists and sugar producers (some of whom likely campaigned against selling stevia for a long time) argue the importance of this product that could revolutionise the sweetener market (estimated at 500 million euros)¹⁰, particularly at a time when aspartame is being reassessed.

Encouraged (rightly) by an alarmist discourse about obesity problems, manufacturers, who have had years to prepare, are jumping into the sale of new products. Yoghurt, cakes, sweets, sodas, energy drinks, cream desserts, ice creams, etc. are in the new armada of stevia food products that is being prepared to flood supermarket shelves. Overall, this will be a good thing for our health. However, other voices are rising up to denounce coming excesses.



Environmental impact

Multinational interest in stevia is bound to affect production methods. This obviously raises many questions. In addition to its nutritional and health benefits, stevia is exceptionally productive (nearly 6 tons of sugar equivalent per hectare compared to 700 to 900 kilos of sugar per hectare of sugar cane) but the biofuel experience still lingers in people's minds. Originally designed as an alternative to fossil fuels, these "energy" crop programmes are now under fire because of their environmental and social impact on southern countries where they were massively deployed. A number of organisations have noted that we know very little about the impact the industrial farming of stevia will have on the environment (carbon footprint, water and soil pollution, depletion, etc.). In fact, nothing ensures that the demand for stevia will not follow the same trajectory as biofuel crops, which experienced rapid, uncontrolled growth.



The spectre of patents

The importance of upcoming profits is sharpening the appetite of multinationals. Some of them would like to patent stevia, or some of its extracts, and are lobbying national and international governments to have them declare stevia a "new food". A category that was created to describe GMOs and all processed or synthetic products. This despite the fact that it is a natural product that has been consumed by some communities for centuries. Monsanto, the world GMO leader, has been involved in several trials. It has stood out for trying to sell small producers stevia seeds from its laboratories to increase production, raise the sugar concentration in plants and make them more resistant. However, we now understand the infernal process that this could fire up; won over by the prospect of quick profits, traditional producers risk losing their know-how, possibly seeing their culture's genetic heritage fade and, in the end, having to purchase increasingly expensive sterile seeds from Monsanto every year.



Respect for small producers

We are probably reaching a turning point in stevia's long history.

Faced with commercial powerhouses investing heavily in the natural sweetener, small producers must get organised to position themselves in niches that will enable them to take advantage of the growth prospects.

This structuring of supply chains in developing countries is all the more important because stevia can be grown very quickly in Southern Europe (it grows perfectly in temperatures from 15 to 26 ° c). This kind of food industry risks to harm the traditional producers.

There are instruments available to accomplish this: organic agriculture and fair trade.

These alternative modes of production and commercialisation provide stevia growers in southern countries with income guarantees while helping them protect their traditional heritage and the genetic wealth of their crops. Several organisations have become involved in this approach in Africa and, especially, in Latin America.

In Amazonia, the Satere Mawere Indians have reaped long-term benefits from sales of their production of dried stevia leaves by Guayapi Tropical, a French fair trade company. Started in 1992, this project (which led to Guayapi Tropical's sentencing in 2005) has contributed to the economic autonomy of thousands of indigenous families and to the preservation of their natural environment, their identity and their ancestral know-how.

In Bolivia, stevia is traditionally grown by women. Their income enables thousands of families to live. Its production provides regular harvests (about four a year) which do not require very heavy work and have led to increasing levels of interest within the country's rural communities.

The markets' infatuation has resulted in a significant increase in prices, leading many farmers to stop growing coca, which is less profitable, more demanding and requires more pesticides¹¹. In fact, Bolivian stevia production is often completely natural.



Many producers have therefore aligned themselves with organic certification with the help of AOPEB, the Association of Ecological Producers' Organisations of Bolivia, which federates, supports and represents farmer organisations committed to organic production. The results are there: purchase prices are higher, harvests are of better quality and long-term commercial relationships have been developed with international buyers.

"Cavalier clearly opted for a fair trade product: chocolate with natural sweeteners made from stevia extract. We want this to underscore the fact that the chocolate beans are grown naturally, with respect for health and the environment, and that farmers in the South have good working conditions and are compensated fairly. We firmly believe that stevia and fair trade go hand in hand, for both producers and consumers, because consumers who buy our stevia chocolate know that our product's background story is honest and fair."

Felix Verdegem, Cavalier

It is our turn to taste it.

Stevia is a natural, very lightly scented sugar substitute (with a very slight taste of liquorice or caramel). It has caught the attention of sweets and chocolate makers and, more particularly, of those for whom fair trade makes sense. This is the case for the famous chocolatier Cavalier, which recently began selling a line of Fairtrade Max Havelaar certified chocolate with stevia. It received an award at the largest professional trade show for sweets and chocolate manufacturers, the Cologne *Internationale Süßwarenmesse*, in February 2012. Its prestigious chocolate perfectly illustrates the benefits of a marriage between quality and a commitment to the environment and solidarity.

To do you good. You and the world.



¹ Source: <http://fr.wikipedia.org/wiki/Stevia>
² Source: Milena Merlino, Frères des Hommes, *Le stevia, une plante millénaire qui commence seulement à faire parler d'elle*.
³ Idem.
⁴ Source: European Stevia Research Centre (ESC - European Stevia Center) of the Catholic University of Louvain (KUL) - <http://bio.kuleuven.be/biofys/ESC/French/ESC.htm>
⁵ Source: Milena Merlino, Frères des Hommes, *Le stevia, une plante millénaire qui commence seulement à faire parler d'elle*.
⁶ Source: European Stevia Research Centre (ESC - European Stevia Center) of the Catholic University of Louvain (KUL) - <http://bio.kuleuven.be/biofys/ESC/French/ESC.htm>
⁷ Source: Marie-Monique Robin, *Les dangers de l'aspartame et le silence des autorités publiques*, 15 March 2011 - www.owni.fr
⁸ Source: Aspartame : l'Europe confirme l'avis français, 1 March 2011 - www.futura-sciences.com
⁹ Idem.
¹⁰ Source: CRIOC (Centre de Recherche et d'Information des Organisations de Consommateurs), *La Stevia, un édulcorant (d)étonnant !*, 15 November 2011 - www.crioc.be
¹¹ Source: Milena Merlino, Frères des Hommes, *Le stevia, une plante millénaire qui commence seulement à faire parler d'elle*.