

Stevia: A Non-Caloric Sweetener

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SUMMARY

Stevia (*Stevia rebaudiana* Bert.) has drawn the attention of health-conscious fitness lovers all over the planet as a non-caloric sweetener. It was regarded by almost the whole world as replacing saccharin. It is also called as sweet leaf or candy leaf, a flowering plant in the aster family (*Asteraceae*) grown for its sweet-tasting leaves. The leaves contain a number of sweet-tasting chemicals known as steviol glycosides, which can be used fresh or dried to sweeten beverages or desserts and can be commercially processed into powdered noncaloric sweeteners. Steviol glycosides, particularly the chemicals stevioside and rebaudioside A, can be more than 300 times sweeter than table sugar and are nonglycemic (i.e., they do not affect blood glucose levels). Touted as a healthier alternative to sugar, stevia sweeteners grew in popularity worldwide in the early 21st century.

INTRODUCTION

Stevia (*Stevia rebaudiana* Bert.) is a perennial herb belonging to the Asteraceae family. It is native to South America and is known as sweet herb of Paraguay. Stevia, commonly known in Sanskrit as “madhu patra,” meaning sweet leaf is a natural and healthy alternative to sugar and artificial sweeteners. Stevia is called by numerous names in various parts of India. Its most popular name is "Meethi Tulsi" and "Meethi Patti". In Hindi stevia is called "Madhu Patrika". But in most of the places, it is generally known as "Meethi Tulsi" because of its similarity to the Tulsi plant in stature, leaf shape, and other physical qualities. Stevia is also known as Sweetleaf, Honey leaf, and Sugar leaf. Global stevia market is rapidly increasing. Though, Japan and Korea are the main consumers of stevia, China is the largest producer in the world. Though its farming is done throughout the world for a long time, it has been around two decades when the cultivation of stevia plant was introduced in India and currently it is growing up in a great way. Currently, India has about 30 million diabetic patients, which is expected to increase to 80 million until 2025. In this way, the Indian farmers have also started to take stevia cultivation to the next level trailing the huge demand for the diabetic market here. Presently India's total annual production of stevia is about 600 tons (krishijagran.com). The weather conditions in many parts of India are very good for stevia cultivation. Maharashtra, Punjab, Karnataka, Chhattisgarh, Madhya Pradesh, and Andhra Pradesh are major Stevia growing states in India. Gradually stevia farming is picking up in Uttar Pradesh as well. The plant is widely known for the presence of sweet-tasting and low-calorie diterpene steviol glycosides (SGs) present in its leaves. Amongst the known SGs, the most abundant glycosides in stevia leaf are stevioside and several types of rebaudiosides, which are about 300 times sweeter than sucrose.

Chemical Components

Stevia is a natural sweetener plant. The leaves of stevia are the source of glycosides. Even more, stevia contains a high percentage of phenols, flavonoids and antioxidant activity. The two main glycosides are Stevioside (St), traditionally 5-10% of the dry weight of the leaves, and Rebaudioside A (R-A), being 2-4%; these are the sweetest compounds. There are also other related compounds including Rebaudioside C (1-2%) and Dulcoside A & C, as well as minor glycosides, including flavonoid glycosides, coumarins, cinnamic acids, phenylpropanoids and some essential oils. Leaves of stevia contain around 10 sweetening glycosides of which stevioside (3-10%), rebaudioside-A (13%), and rebaudioside-B, C, D are important. Eight phytochemical properties of stevia glucosides were discovered, viz. dulcosides A, rebaudiosides A-E, steviobioside and stevioside (Hossain *et al.*, 2017).

What makes the Stevia plant so special is that it can be used to replace sugar (sucrose), and due to the following principal advantages:

- It is a completely natural product;
- The sweetener, stevioside, contains absolutely no calories;

- The leaves can be used in their natural state;
- Due to its enormous sweetening power, only small quantities need to be used;
- The plant is non-toxic;
- The leaves as well as the pure stevioside extract can be cooked;
- No aftertaste or bitterness;
- Stable when heated up to 200 degrees;
- Non fermentative;
- Flavour enhancing;
- Herbally it can be used by humans without negative effect
- Non-addictive sweetener for children.

Stevia products

Stevia leaves powder



Stevia sachets



Stevia liquid extract



Stevia tablets



Uses of Stevia

- Stevia is safe for diabetics, as it does not affect blood sugar levels.
- Stevia does not have the neurological or renal side effects as other artificial sweeteners.
- Stevia possesses anti-fungal and anti-bacterial properties in addition to its other versatile uses.
- It can be safely used in herbal medicines, tonics for diabetic patients and also in daily usage products such as mouthwashes and toothpastes.
- Mild Stevia leaf tea offers excellent relief for an upset stomach.
- Along with these it can be utilized as food products such as sauce, pickles, ice-creams, ice-cakes and also in pharmacculated formulae (Goyal *et al.*, 2010).

CONCLUSION

Stevia rebaudiana has become an important plant that needs to be commercialized without no time because of its medicinal and therapeutic applications. Constituents of honey leaves can be used directly or in raw form by human body and provide various physiological benefits. Dried stevia leaves powder is also a good source of major and minor nutrients and it is also well known as an efficient medication for curing chronic diseases. Future researches also needed to determine its further positive potentials against diseases and to evaluate its accurate daily intake which is suitable for human consumption without causing any negative consequences.

REFERENCES

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