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Uses of stevia (*Stevia rebaudiana*)

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Abstract

Stevia plant is a nutrient rich plant which belongs to asteraceae family. The leave of stevia contains diterpene glycosides stevioside, rebaudiosides A-F, steviolbioside and dulcoside which are responsible for its sweetness. Stevia is termed as natural sweetener. Stevia herb is a very low in calories parts by parts, its dry leaves possess roughly 40 times more sweetness than sugar rebaudioside-A, are found to be 300 times sweeter than sugar. Stevia contains natural antioxidants which helps in lowering blood pressure, cholesterol, and control diabetes. This review article represents the uses of stevia.

Keywords: stevia, rebaudiosides, natural sweetener, antioxidants

Introduction

Ever *Stevia rebaudiana* is the herb of the 950 genera. Different species of Stevia its contain several potential sweetening compounds, with *S. rebaudiana* being the sweetest of all. Stevia is a semi-humid subtropical plant that can be grown easily like any other vegetable crop even in the kitchen garden. It is a small, herbaceous, semi-bushy, perennial shrub Centuries ago, Paraguay natives use this leaves to sweeten their bitter drinks. Guarani Indians also used this plant for nearly 1500 years. Stevia is also known as sweet herb, sweet leaf, honey leaf, candy leaf and honey yerba (Carakostas *et al.* 2008) [3]. Originates in South American wilds, grows in semi-arid habitat, from scrub to grasslands to mountain terrain. It grows upto the height of 65cm to 180 cm. The leaves of stevia is simple, opposite, rarely alternate, mostly petiolate but exstipulate, penninerved or reticulately nerved. It is a short day plant. The flower are white is color whit a purple throat.

Anti-diabetic properties

Stevia leaf extract can defeat plasma glucose level and significantly increase glucose tolerance because it has the ability to increase insulin effect on cell membrane, thus increases insulin production and stabilizes blood sugar level. Stevia leaf either in powder form or dried form is used as supplementary food products for diabetic patients which increases natural sweetness and it also helps in rejuvenating the pancreatic glands. Stevioside enhances glucose-stimulated insulin secretion, but does not affect fasting insulinemia (Xiao and Hermansen, 2005; Chen *et al.* 2006) [7, 4].



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Blood pressure regulation

Stevia is used as a heart tonic that regulates blood pressure levels, heartbeat and other cardiopulmonary actions. Hot water leaf extract of stevia lowers the systolic and diastolic blood pressure in humans. *S. rebaudiana* leaves (steviolglycosides) contain non-caloric sweeteners on regular consumption reduces cholesterol in blood (Atteh *et al.* 2008) ^[1], improves cell regeneration and blood coagulation, suppresses neoplastic growth and strengthens blood vessels (Barriocanal *et al.* 2008) ^[2] which exert beneficial effects on human health. They relax arteries and lowers the blood pressure.

Obesity

The leaves of stevia contains zero calories natural sweetener ent-kaurene diterpene glycosides (stevioside and rebaudiosides) that they do not metabolize to produce energy and its sweetness is 300 times more than sucrose. Thus stevia helps in reduction of weight loss in humans (Kaushik, 2010) ^[5].

Renalfunction

Melis (1992) ^[6] studied the effect of stevioside from the leaves of *S. rebaudiana* on renal function that it acts as typical systemic vasodilator which provoked hypotension, diuresis and natriuresis. Steviol and its analog is used in polycystic kidney disease.

Other uses

Stevia has anti-fungal and anti-bacterial properties. Mild stevia leaf tea helps in relief of stomach upset. Stevia leaf is used in sweetening foods. It also has antiproliferative/antimutagenic/antioxidant properties.

Conclusion

Stevia (*S. rebaudiana*) is considered as a non-caloric natural sweetener which has many potential benefits to human beings especially in the field of diabetics, blood pressure, obesity etc. It is used as sugar substitutes in foods due its sweetness in many countries. Stevia provides an opportunity to develop foods rich in antioxidants which is a new functional foods.

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