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SWEET WISDOM: EXPLORING THE HISTORY, BENEFITS AND CULTIVATION OF STEVIA

Email

jyotiuppar255@gmail.com

¹Jyoti Uppar* and ²Yegireddy Ashok

¹Dept of Plantation, Spices, Medicinal and Aromatic crops, Uttar Banga Krishi Viswavidyala, Pundibari, West Bengal, India

²Dept of Floriculture and Landscape Architecture, Uttar Banga Krishi Viswavidyala, Pundibari, West Bengal, India

Stevia (*Stevia rebaudiana*) is popularly known as natural sweetener, honet plant, calorie free plant, candy leaf and sugar leaf, which belongs to Asteraceae family. It is generally known for its sweet-tasting leaves. Some parts of Indian people called this plant as a Meethi Tulsi, Meethi Patti or Madhu Patrika. In Japan and Korea, it is commonly known as ‘Caa-he-e’ means sweet herb. It is a zero-calorie sweetener, non-fermentable and does not become dark on cooking.

Where Does Stevia Come From?

Stevia has been used as a natural sugar for hundred years ago in American continent. It is native to South America and first used by indigenous people to sweeten beverages and chewing purpose for its sweet taste over 200 years ago. In 1899, Moises Santiago de Bertoni was recorded the stevia plant scientifically as *Eupatorium rebaudianum*, in Paraguay. However, by 1905. The commercial use of stevia extract as a natural sweetener started in the 1970s by Japan where it is still a popular today. Presently stevia is cultivated Paraguay, Kenya, China, The United States, Vietnam, Brazil, India, Argentina and Colombia. In India, Stevia has been successfully cultivated in recent years in many areas of Rajasthan, Maharashtra, Kerela, Orissa, Punjab, Chhattisgarh, Karnataka, Madhya Pradesh and Andhra Pradesh



Why it is so important?

From ancient times to the present, sugar has been played essential part of the human diet. Sugarcane (60 %) and sugar beet are the primary sources of sugar. Even though the recommended sugars have sweetening properties, diabetics are not advised to eat them. For these individuals, stevia can be used as sweetener in their diet. The leaves of the stevia contain sweetening agents that have the ability to balance insulin i.e. chemical constituents such as stevioside (3–10%), rebaudioside-A (13%), rebaudioside-B and rebaudioside-C. The natural sweetener is significantly sweeter, offering 200 to 300 times more sweet than table sugar. Stevia may be used in all food and beverages instead of table sugar. About one pinch of stevia powder equals to one teaspoon of table sugar.

Medicinal Uses of Stevia

According to World Health Organization (WHO), consumption of stevia helps to regulate blood pressure, fights cavities, stimulate pancreas to produce more insulin. It also revealed antibacterial, antiseptic, anti-inflammatory, anti-fertility, preventing hypotensive, diuretic, cardiogenic property and to treat skin problems like dermatitis, eczema, wrinkles, skin blemishes, acne outbreaks, scarring, rashes and itchiness. It is more advantageous in the prevention of type 2 diabetes. It is a condition whereby the pancreas does not produce sufficient insulin, or the body is unable to use the hormone effectively. Stevia can suppress plasma glucose levels and significantly increase glucose tolerance in the body.



Cultivation Technology

Stevia is a perennial herbaceous plant, grows 65-80 cm tall with sessile, oppositely arranged leaves, bears small white flowers in terminal clusters. Different species of Stevia having sweetening compounds, among these *S. rebaudiana* is most intensely sweet in nature. Studies showed that plants grown at higher latitudes found a higher percentage of sweet glycosides and nutrition with climatic conditions play important roles on the growth and production of secondary metabolites of stevia plant. It is a semi-humid subtropical plant that can be grown in the kitchen garden very easily like any other vegetable crop. It is short day plant but stevioside content in leaves is higher in long day condition. The soil should be well-

drained red soil and sandy loam soil with a pH range 6.5-7.5. Saline soils is not suitable to this plant. Commercial propagation is done by stem cuttings (15 cm long) in the month of February-March for rooting. Stevia comes to flowering 30 days after planting, since the leaves are economic part, flowers are typically removed periodically to improve the taste of the leaves.

Harvesting and Processing of Leaves

Leaves are the economic part. Harvesting time varies based on factors such as soil type, plant variety and the growing period. The initial/first harvest typically occurs 3-4 months after planting, followed by subsequent harvests can be done by every three months which allows 4 harvest in a year. Best time of harvesting is mid-September to late September and done by cutting the stems 5-8 cm above the ground. Short days induce flowering, so it is recommended to harvest the leaves just prior to flowering to get high steviol glycosides in the leaves. After harvesting leaves are separated from branches, cleaned and spread in thin layer under shade till they completely dry. Total herbage yield is about 10-12 t/ha of dried leaves with 3-10 % of stevioside content on dry weight basis.

Conclusion

Cultivation of Stevia is gaining importance across the various regions worldwide due to its natural sweetening property of leaves which can replace table sugar. It is plant with full of many important phytochemicals that have many medicinal properties. It is mainly using as a antidiabetic agent which is common through the world. Despite its rising popularity, cultivation of stevia, benefits and its use remain unknown due to conflicting studies. However, further studies are required to recognise standard cultivation areas and practices to produce best quality stevia with high stevioside and rebaudioside content.

Reference

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