iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** VI **Month of publication:** June 2022

DOI: https://doi.org/10.22214/ijraset.2022.44986

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

To Study About the Stevia and Formulation of Calorie Free Stevia Tea (Mithi Tulsi-Stevia)

Ghodke Monika Babasaheb[1], Dr. Hingane L.D.[2]
[1]*Student,* [2]*Guide & Principal, Aditya Pharmacy College, Beed*

I. INTRODUCTION

A. Stevia

Stevia plant/stevia rebaudiana (mithi Tulshi), stevia farmers is grown by Indian farmers in the foothills of Himalaya. It is sweet in test. It does not affect your blood sugar levels. Stevia is a natural sweetener and sugar substitute derived from the leaves of the plant species stevia rebaudiana , native to brazil & Paraguay. It has been use to sweetener bevarages and made tea sins the 16th century .
It is used as a non nutritive. A non nutritive sweetener is one that contain little to no calories. Stevia is used as healthful alternative to added sugar in many meals and beverages. It is primarily grown in brazil, Paraguay, japan ,china. The natural sweetener test 200 to 300 time sweeter than table sugar.
Stevia hasn't calories because the calories per surviving are so low. It has shown potential health benefits as a helpful sugar alternative for people with diabetes. Stevia rebaudiana bertoni is a bushy shrub that is part of the sunflower. There are 150 species of stevia , all native to north or south America .
China is current leading exporter of stevia products , however stevia is now produce in many countries. The plant can often be purchased at garden centre for home growing .Stevia typically required about 20% of the land and for less water to provide the same amount of a sweeteners as other main stream sweeteners.
Stevia contains eight glycosides these are the sweet component isolated & purified from the leaves of stevia.

These glycosides include :-

- Steviaside
- Rebuadiosides A,C,D,E,&F
- Steviolbioside
- Dulcoside

Steviaoside & rebaudioside A (rob A) are the most plentiful of these components. There are extracted through a process of harvesting the leaves than drying , water extraction & purification. Crude stevia ,processed product before it is purified often carries a bitter taste & foul smell until it is boiled or decolored. It takes roughly 40 steps to process final stevia ectract .Stevia leaves contain stevioside in a range of concentrations up to around 18%.

Some of the common trade names for stevia sweetners are :-

1) Enliten
2) Purevia
3) Rebiana
4) Stevia
5) Steviaquane
6) Stevia extraction raw
7) Sweetleaf

Sweetness of stevia

a) The leaves = 10 to 15 times as sweet as sugar .
b) The extract = 200 to 300 times as sweet as sugar .

II. LITERATURE SURVEY

1) *Priscilla Samuel.et.al.,(2018):-* In this article Priscilla Samuel represented that steviol glycoside sweeteners are extracted and purified from the stevia rebaudiana bertoni plant, a member of Asterceae family. They continued increasing rate of obesity, diabetes, and other related comorbidities, in conjugation with global public policies calling for reductions in sugar intake as a meant to help cure these issues, low and no calorie sweeteners such as stevia are gaining interest among consumers and food manufactures.
2) *Junyan wang.et.al.,(2020):-* In this review Junyan Wang showed stevia demonstrates therapeutic benefits as a joint nutraceutical in the management of chronic diseases including overweight, obesity, diabetes mellitus, fatty liver, cardiac fibrosis, certain type of cancer, hypertension, etc. Based on daily safe intake levels of 4.0-4.4 mg/kg, many countries have released administrative standards for the use of stevia in foodstuffs.
3) *S.K.Goyal.et.al.,(2010);-* In this article they reviewed chemical constituents physiological and also pharmacological actions, Human studies, stevia's products, medicinal values and also uses of stevia in various area of the world and shown it's a non-calorie sugar substitute.
4) *Margaret Ashwell.et.al.,(2015):-* In this review they shown the study on history of stevia, stevia safety, role of stevia in energy reducing and weight management and a stevia in foods and drinks and scientist continued to explore ways to used stevia-based sweeteners proposed used for high purity stevia half extract include soft drinks, jams, ice creams and other dairy products, cakes and desserts and alcoholic beverages, etc.
5) *Natalie Butler.et.al.,(2018):-* According to their study stevia is an intensely sweet tasting plant has been used to sweeten beverages and making tea since the 16th century they showed possible health benefits of stevia, such as diabetes, weight control, pancreatic cancer, blood pressure, children's diets, allergies, etc.
6) *Muhammad Farhan Jahangir Chughtei.et.al.,(2020):-* In this review they has shown the details about the stevia cultivation and about the active constituent present in stevia, which is stevioside and also the chemical composition of stevia and a functional properties of stevia.
7) *Prof. Dr. John.M.C.Geuns.et.al.,(2014):-* They has been written an update on technical uses, exposure, toxicology, pharmacological effects in cases of hypertension , type 2 diabetes, atherosclerosis. The book have 307 pages.
8) *Natalie Olsen.et.al.,(2017):-* In this review they reviewed that stevia is a non-nutritive or zerocalorie sweetener made up of steviol glycoside. These are compounds extracted and refined from the leaves of the stevia rebaudiana plant and also risk and side effects of stevia in pregnancy.
9) *Neha Pathak.et.al.,(2020):-* In this she reviewed that stevia is a sugar substitute made from the leaves of stevia plant. Its about 100-300 times sweeter than the table sugar but it has no carbohydrates calories or artificial ingredients but not everyone likes the ways it tastes.
10) *Rahul Ranjan et.al.2011:-*They have showed that stevia leaf is 10 times sweeter that refined sugar but calories stevia is safer when used as sweetener.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

III. AIM & OBJECTIVE

A. *Aim*

To study about the stevia and formulation and evaluation of Stevia Tea (Mithi Tulsi-Stevia).

B. *Objectives*

Stevia (Madhu Tulsi) is a native pant of south America is a natural sweetener with proven health benefits

1) It is 100% all natural zero calories sweetener and serves as a healthy alternative to refind sugar .
2) We used stevia instead of refind sugar which helps to lowers blood pressure and blood sugar leaves, reduces risk of pancreatic cancer, promotes oral & skin health ,control weight ,fight allergies and also prevents many type of cancer .
3) It's a non-nutritive sweetener.
4) It has no calories, sugar or carbohydrates and its glycemic index is zero.
5) Stevia is helpful in several health and skin benefits, tasty sugar substitute, even helps in control diabetes, an incredible skincare additive, etc.
6) In short by using stevia we can reduce the risk of high blood sugar level and can improve human health.

IV. EXPERIMENTAL WORK

The present proposed review work was planned as follows:-

A. *Material*

1) *Chemicals :* - Drinking water 1 cup, Tea powder (anyone we generally used), Dried stevia leaves.
2) *Glasswares :*- Beaker 100ml, glass rod, water bath, tripod stand, etc

B. *Method : -Boiling*

Take a one cup of clean drinking water in water bath.

1) Add a tea powder q.s.(anyone we generally used).
2) Then add a dried stevia leaves in it.
3) Boil it .
4) Filter it and our calorie free tea will be ready.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

V. WHAT IS STEVIA

Stevia (stevia rebaudiana) is a species of shrub & herb Native to the rain forest of paragualy.

It is from the sunflower family (Asterace) and is related to lettuce & marigolds. Also known as sweet leaf &sugar leaf .It has no calories, no carbohydrates ,and a zero glycemic index which makes it a great natural alternative to sugar & it is up to 300times sweetner than sugar.

Stevia also has many medicinal properties such as dividing digestion & lowering blood sugar levels .Not without health controvercy some studies have reported adverse effect. However, there have been no reports of harmful effect after 30 years of we in japan non century of use in south America .It has been used in japan (Where aspartame is banned) since the 1970's as the main alternative to sugar in gum soft drinks & other commercial foods & beverages .

Stevia has been used for over 1500 years by the native guarani Indians of paraguay .Today it is grown around the world primarily in asia & south America. Political controversy surrounds this herb as well .In United States was banned by the FDA who de\epend it an unsafe food additive.

Proponents of stevia belived this ruling was in respond to pressure from the artificial sweetener industry. In December 2008 , Stevia was granted GRAS (Generally Recognized as safe) status by the FDA. Stevia is often touched as a safe &healthy sugar substitute that can sweeten up foods without the negative health effect linked to refined sugar. Its also associated with several impressive health benefits, such as reduced calories instead ,blood sugar levels , & risk of cavities .

1) Stevia has
2) No colories
3) Zero Carbohydrate
4) Sweet stevia glycosides in Stevia leaf
a) Steviaside :- C38,H60,O18
b) Rebaudiaside :- C44,H70,O23

VI. HISTORY

1) *Over the Centuries:-* Stevia plant was first discovered by guarani people of paraguay who used the plantd leave to sweeten drinks.
2) *1800's:-* Stevia consumption was widely popular in south America.
3) *1901:-* Dr. Moises S. Bertoni attributed with the discovery of the plant & the plant classified as stevia rebaudiana bertoni.
4) *1908:-* First cultivated crop of stevia was harvested .
5) *1931:-* Two French researchers isolated the sweet components (Stevia glycosides) of the stevia leaf.
6) *1970's:-* Japan began using stevia as a sweetner in foods & beverages . 1990's :- Cultivation throughout the world.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

VII. WHY IT USED AS INSTEAD OF SUGAR

As an alternative to sucrose ,or table sugar , stevia is a sweetner caries the potential for considerable health benefits .Stevia is considered “no-calories ‘in the food data central (FDC) . Stevia does not strictly contain zero calories but it is signification fly less calorific than sucrose & low enough to be classified as such .The sweet tasting component in stevia sweetners occurs naturally .

This characteristic may benefits people foods &beverages. The low calories count qualifies stevia to be a healthful alternative for diabetes control or weight loss.

Many people have stopped win sugar &have switched to stevia because its healthy & not chemically processed like artificial process. Stevia has been used for over 1500 years by the native Indian of paraguay .

Stevia sweetener is very concentrated so a little goes a long way a half teaspoon has the same sweetness as one cup of sugar .It provides the sweeteners you want with the calories you don’t need .

There are blend of stevia that allow you to use the same amount as you would sugar .There are a few different forms out there that you can use powder leaves &liquid .Stevia is great because it has no carbohydrates calories & a zero glycemic index. It is belived to have antibacterial, antiseptic, antimicrobial, antioxidant, properties. It is credited for lowering blood sugar levels aiding in digestion by regulating blood sugar levels . Stevia can be substituted for sugar in every instance .When baking you can use half the amount of sugar you normally wound when using stevia instead. The liquid & powder are best to use when replacing sugar in baked goals. Some useful ways to use stevia include adding it into oatmeal include iced or hot tea ,coffee, fruit ,sauces, james etc.

VIII. STEVIA USED IN DIABETES

Research has shown that stevia sweetener do not contribute calories or carbohydrate to the diet .They also demonstrated no effect an blood glucose or insulin response. This allows people with diabetes to eat a wider variety of foods and comply with a healthful meal plan. Another review of five randomired controlled trials compared the effects of stevia on metabolic outcomes with the effects of placebes.

The study Concluded that stevia showed minimal to no effects on blood glucose insulin leves .blood pressure and body weight .

In one of these studies subjects with type 2 diabetes reported that stevia triggered significant reduction in blood glucose & glucagon response after a meal. Glucogen is a harmone that regulates glucose leaves in the blood &the mechanism that secretes glucagon is often faculty in people with diabetes .

Stevia contains compounds called stevia glycosides that are about 150-300 times sweetner than sugar. However stevia is so slow in calories that it is technically a ‘zero calories products . Although they are sweet , stevia glycosides can leave a bittes. After taste so most stevia products contains other ingredients to countract this .

Several studies have investigated the effects of stevia on Blood sugar levels . A (2016 study) reported that dried stevia leaf powder significantly lowered blood sugar levels in people with diabetes , both while tasting & after eating .

IX. OTHER THERAPEUTIC USES OF STEVIA

A. Weight Control

There are many causes of oversight & obesity such as physical inactivity increases intake of energy dense foods that are high in fat & added sugars .The intake of added sugars has been shown to contribute an average of 10 percent of total calories in American diet. Stevia contains no sugar & very few if any, calories .It can be part of a well-balanced diet to help reduce energy intake without sacrificing taste

B. Pancreatic Cancer

Stevia contains many sterols & antioxidant compounds ,including kaempferol. Studies have found that kaemferol ,can reduce the risk of pancreatic cancer by 23 percent.

C. Blood Pressure

Certain Glycosides In stevia extract have been found to dilate blood vessels .They can also increase sodium excretion & urine output. A 2003 study showed that stevia could potentially help lower blood pressure. The study suggested that the stevia plant might have cardiotonic actions . However, more recent studies have shown that stevia does not seen to impact blood pressure. Further research is required.

D. Children Diet

Foods & beverages containing stevia can play on important role in decreasing calories from unwanted sweetners in the diet of childrens . There are no thousand of product on the market containing naturally sourced. Stevia ,ranging from salad dressing to snack bars . This availability allows childrens to consume sweet foods & drinks without the added calories while transitioning to a lower sugar diet .

E. Allergies

In 2010, the Europeon Food Safety Committee (EFSA) reviewed existing literature to determine if they was any cause for concern regarding the protectors for allergic reactions to stevia .The reviewers conducted that "steviol glycosides are not reactive and are not metabolized to reactive compound ,therefore it is unlikely that the steviol" glycosides under evaluation should cause by themselves allergic reactions when consumed in foods. Even the highly purified forms of stevia exract are highly unlikely to cause an allergic reaction. No cases of allergic reaction to stevia have been founded since 2008.

X. FORMS OF STEVIA

There are varities of stevia. Stevia comes in many forms make your choice based on the amount of sweeteners you want (white extract powders are the sweetest) & how well a particular recipe or beverage will be complemental by the licorice like flavor of less refined forms .

A. Fresh Stevia Leaves

This form of stevia is the herb in its most natural unrefined state . A leaf picked from stevia plant & chewed will import an extremely sweet taste sensation reminiscent of licorice that taste for quite a while. For stevia to have a more practical application as a tea or sweetener ,the leaves most dried or put through an extraction proccess ,which makes the sweet taste upon more potent.

B. Dried Leaves

For more of the flowor & sweet constituents of the stevia leaf to be released drying &crushing is necessary. A dried stevia leaf may come in bulk or packaged like tea bags .You can also get it fine ly &can be used in a wide variety of foods & beverages, including coffee, apple sauce .Its distinctive flavor is reminiscent of licorice , which will blend vary well with different aromatic spices ,such as cinnamon & ginger.

C. Stevia Extracts

The form in which stevia is primarily used as a sweetener in japan is that of a white powders extract. In form it is approximately 200 to 300 times sweeter than sugar (by weight). This white powder is an extract sweetening agent in the stevia leaf. Not all stevia extract podwer are the same .The taste sweeteners & cost of the various white stevia powders degree of refinement & the quality of stevia plant used .You may find that some powders have more of an after taste. Since extacted stevia power is so intensily sweet , we recommended that it be used by the pinch (or drop if diluted in water) Once mixed , this solution should be stored in the refrigerator.

D. Liquid Concentrates

These come in several forms there a syrupy black liquid (that results from boiling the leaves in water) which can enhance the flavour of many foods . Another type is made by steaping stevia leaves in distillation water or a mix of water & grain alcohol. You can also find a liquid made from the white water & presented with grapefruit seed extract .

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

XI. DOSING

The appropriate dose of stevia depends on several factors such as the user age health & several other conditions. At this time there is not enough scientific information to determine an appropriate range of doses for stevia. keep in mind that natural products are not always necessarily safe & dosages can be important .Be sure to follow relevant directions on product labels & consult your pharmacist or physician or other healthcare professional before using.

For Using

1) In low doses :- Stevia consumption appears to be associated with general anti-inflammatory & anti – oxidative effects .
2) Higher doses appear to be linked to fertility problems in animals .
3) Stevia glycosides exposure remains above the established ADI of 4 mg per Kg body weight. 4) For children (Aged 1-14) Exposure ranges from 1.7 to 16.3 mg/kg bw/day &for adults, revised exposure estimates ranges from 5.6 to 6.8 mg/kg bw/day.

XII. STEVIA SIDE EFFECTS

A. Allergic Reaction

Can cause anaphylaxis ,but rarely. At greater risk in people with pre-existing allergies to chrysanthemums , marigoldsor daisies .

B. Symptoms

Dizziness ,hives,shortnessof breath, wheezing , Weaknessor difficulty swallowing . 2) Digestive Problems :-
Consuming highly leads to nausea &a misleading sensation of fullness. Steviosides may irritate stomach & cause other problems for the digestive system ,including bloating &a decreased appetite.

C. Drug Interactions

Stevia acts as a diuretics which can prevent the body's ability to rid itself of lithium, which may lead to dangerous side effects .Diabetes medication and stevia when taken together can cause hypoglycemia a drop in a blood sugar levels . Stevia may caise a drop blood pressure for people taking high blood pressure medication. When taken by mouth-
Certain chemicals contained in stevia Including steviosides & rebaulioside a are likely safe when taken by mouth as a sweetener. Some people who take stevia or the chemicals found in stevia can experience bloating or nausea.

Other side effect :-
-Overian cancer
- Muscle pain
-Numbness
-Infertility
-Not recommended for pregnant , Breastfeeding or a child.

XIII. HEALTH BENEFITS OF STEVIA

1) Does not have any of the negative side effect that have been associated with artificial sweetener such as aspartame.
2) Nurturing to pancreas, it can be used by diabetics as a sweetener & also as a method for controlling blood sugar leves.
3) It lowers high blood pressure & does not affect regular blood pressure.
4) Will not cause cavities & actually helps to prevent them .It has antibacterial properties, inhibiting the growth of bacteria & other infection organisms. Stevia toothpaste & mouthwash will be available soon in market.
5) Stevia can be applied to the skin to treat acne & other skin ointment .It has also been shown to protect against premature aging.
6) Does not have any calories not carbohydrates which makes it excellent as a weight loss aid.
7) Shown to aid with digestion and 500 the upset stomach.
8) Some reported suggest that it can help to minimize the sensation of hunger & cravings for sweets or tasty foods.
9) Protection against lives & kidney damage.
10) Reduced triglycerides & cholesterol levels.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

XIV. STEVIA APPROVED OR NON-APPROVED

1) The Stevia glycosides was legally allowed to use in most countries, including, vietnam.
2) 2006 WHO evaluated a safety & no adverse effects .
3) In November 2011, the commission adopted regulation EV 1131/2011 which granted authorisation of the use of steviol glycosides as a sweetener in food.
4) The European food safety Authority (EFSA) revised for safety & Consumer Exposure.

A. *Controversy Between the FDA & Stevia*

1) 1991:- FDA labeled stevia as “unsafe food additive”.
2) 12/2008, The FDA gave a “no objection” approved for GRAS status of certain high-purity steviol glycosides for use in food these products are not stevia .
3) Stevia leaf and crude stevia extracts are not considered GRAS & do not have FDA approval for use in food.

XV. STEVIA APLLICATION (IN MARKET)

1) Cake & Pepsi: Launch competing green stevia sodas .The new low-calorie drinks that share a common ingredient is stevia ,a plan used as sweetener.
2) Fruit Drinks
3) Chocolate ,gum & Candy
4) Ice-Cream (Fat –free)
5) All kinds of sugar substitute.

XVI. PRECAUTIONS & WARNINGS

A. *Pregnancy & Breath Feeding*

There isn’t enough reliable information to know if it is safe to take stevia when pregnant or breath feeding .
-Stay on the safe side & avoid use.

B. *Allergy to Ragweed & Related Plants*

Stevia is in the asteraceae /compositae plant family .This family includes ragweed , chrysanthenums, marigolds ,daisies & many other plants.
- In theory,people who are sensitive to ragweed & related may also be sensitive to stevia .

C. Diabetes

Some developing research suggest that some of the chemicals contained in stevia might lower blood sugar levels & could interfere with blood sugar control. However other research disagree.

-If you have diabetes & take stevia or any of the sweetners it contain ,monitor your blood sugar dosely & report yours finding to your healthcare provider.

D. Low Blood Pressure

There is some evidence though not conclusive that some of the chemicals in stevia can lower BP.There is concern that these chemicals might cause blood pressure to drop too low in people who have low BP.

-Get your healthcare provider's advice before taking stevia or the sweeteners it contains, if you have low BP.

XVII. RESULT

I have studied about Stevia (mithi tulsi-stevia) and also Calorie free stevia tea was Prepared .

XVIII. DISCUSSION

Stevia is a natural sugar which is generally 200-300 more sweeter than table sugar and totally calorie free. Does not have any of the negative side effect that have been associated with artificial sweetener such as aspartame. Nurturing to pancreas, it can be used by diabetics as a sweetener & also as a method for controlling blood sugar levels. It lowers high blood pressure & does not affect regular blood pressure. Will not cause cavities & actually helps to prevent them .It has antibacterial properties, inhibiting the growth of bacteria & other infection organisms. Stevia toothpaste & mouthwash will be available soon in market.

XIX. JUSTIFICATION

As an alternative to sucrose, or table sugar , stevia is a sweetener caries the potential for considerable health benefits .Stevia is considered "no-calories 'in the food data central (FDC) . Stevia does not strictly contain zero calories but it is signification fly less calorific than sucrose & low enough to be classified as such .The sweet tasting component in stevia sweeteners occurs naturally .This characteristic benefits people foods &beverages. The low calories count qualifies stevia to be a healthful alternative for diabetes control or weight loss. Many people have stopped win sugar &have switched to stevia because its healthy & not chemically processed like artificial process.

Stevia is great because it has no carbohydrates calories & a zero glycemic index. It is believed to have antibacterial, antiseptic , antimicrobial, antioxidant properties. It is credited for lowering blood sugar levels aiding in digestion by regulating blood sugar levels . When baking you can use half the amount of sugar you normally wound when using stevia instead. The liquid & powder are best to use when replacing sugar in baked goals. Some useful ways to use stevia include adding it into oatmeal include iced or hot tea ,coffee, fruit ,sauces, jam, etc.

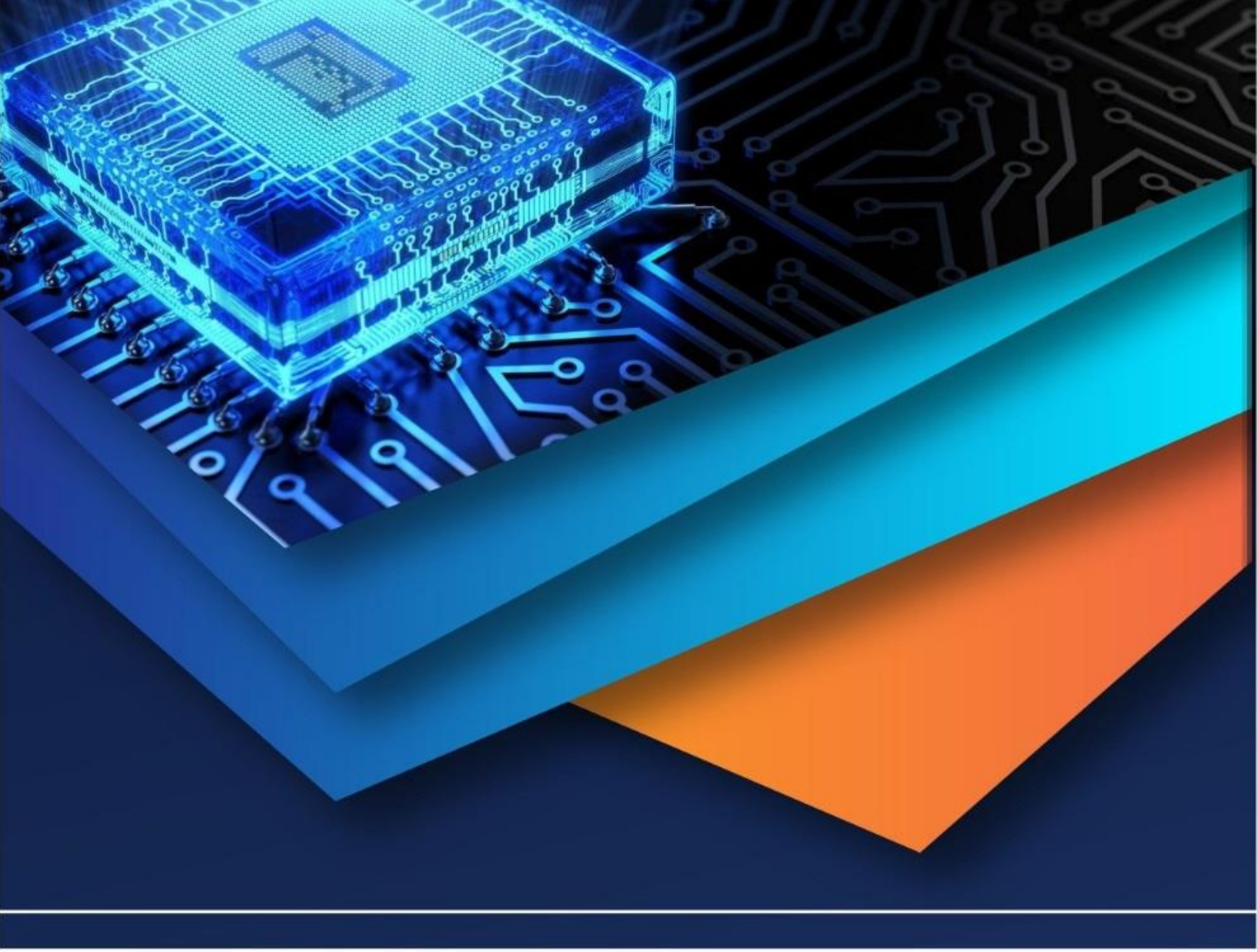
XX. CONCLUSION

The safety of stevia is well documented in over 200 published scientific studies. Nutrition science supports this naturally sweet treat as a component of a healthy diet .This herbal sweetener has been used for centuries in south America, & now can be found in consumer products across the world. Our current study concludes that the highlighted doses of stevia in sweetened tea could be an alternative to sucralose in diabetic patients with no effects on blood glucose, insulin and lipid levels. Apart from sweet contents, the other constituents of Stevia rebaudiana exert various health benefits, such as anti-hyperglycemic, anti-cancer, anti-hypertensive, anti-oxidant, antimicrobial, etc. Low calorie stevia-incorporated products are rich in vitamins and amino acids. It is beneficial for our health. It is also useful for regulation of blood pressure, renal function, obesity control and for chilldrens diet too.

REFERENCES

[1] "Stevia" Oxforddictionaries.com US English, 7 Feb 2013 retrieved 13 Feb 2013. [Google scholar]
[2] https//.stevia.net/varieties.htm.
[3] Priscilla Samuel , keith T Ayyob, Bornadene A Magnuson, Ursula Wolwer-Rieek , Per Bendix Jeppesenm Peter H Rogers, Ian Rowland, Rebeea Methews. Stevia leaf to stevia sweetener. The joumal of Nutrition, Volume 148 Issue 7 July 2018, Pages 11865-12055.Trends in food science & Technology vol 103, Sep 2020, Pages 264-281. [Google scholar]

[4] Junyan Wang Hongli Zhao, Yueming Wang, Hoching Lau, Wenhu, Zhou, Chaunoio chin, Songwen Tan. A.) Xiangy school of Plautical Sciences,Central South Unicersity, Changsna,410013 China. B.)Faculty of Science ,The University of Sydney 2006 sydney, Australia.. Trends in food science & Technology volume 103, Sep 2020, pages 264-281, 31 July 2020. [Google scholar]
[5] S.K Goyal Samsher & R.K.Goyal 1.) Department of Agricultural Enginering & Food Technology. S.VBP Univercity of Agriculture & Technology Meerut, India. 2.) Department of Animal Husbandry & Dairying, RBS college, Agra, India. International jounal of food scienas & Nutrition, Feb 2010, 61(1):110. [Google scholar]
[6] Margaret Ashwell, OBE, PhD,FAfN, 2015 May; 50(3) : 129-134. Stevia, Nature's Zero-calorie Sustainable Sweetener, Nutrition Today. [Google scholar]
[7] What is Stevia.Medical News Today, Reveiwed by Natalie Butler, R.D, L.D, written by Hannah Nichols on January 4,2018. [Google scholar]
[8] Food and Recipes, Medically reviewed by Neha Pathak, MD on Sep 21, 2020. [Google scholar] 9) International Journal Of Research in Pharmacy and Chemistry 1 (4) : 1999-1202 Stevia as a natural sweetener. Rahul Ranjan, J-Jaiswal, Jitendra Jena, Jan 2011. [Google scholar]
[9] Medical News Today. Medically Reviewed by Natalie Olsen, R.D, L.D. ACSM EP-C-written by Jennifer Huizen on October 27, 2017. [Google scholar]
[10] CYTA-Journal of food. Nutritional and therapeutic properties of stevia rebaudiana as emerging sweetener ; a way forward for sweetener industry. Muhmmad Farhan Jahangir Chughtai, Imran Pasha, Tahir Zahoor, Adnan Khaliq, Samreen Ahsan, Zhengzhong Wu, Muhmmad Nadeem, Tariq Mehmood, Iqra Yasmin, Atif Liaqat & Saira Tanweer. Volume-18, Issue 1, Pages 164-177, 27-Feb-2020. [Google scholar]
[11] Nicole ! Veg Kitchen-Healthy Kitchen, Healthy eating tips.com [Google scholar]
[12] Medical News Today. Medically Reviewed by Natalie Olsen, R.D, L.P. ACSM EP-C-written by Jennifer Huizen on October 27, 2017.
[13] Food & Recipes, Medically reviewed by Neha Pathak, MD on Sep 21, 2020.
[14] International Journal of Research in Pharmacy & Chemistry 1 (4): 1999-1202 Stevia as a natural sweetener Rahul Ranjan, J-Jaiswal, Jitendra Jena, Jan 2011.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY