

# ABOUT STEVIA

Stevia is a naturally sourced, zero calorie, and sustainable sweetening ingredient for foods and beverages. It is a plant extract that has been used as a natural sugar substitute and flavor around the globe for centuries. It is a new kind of sweetener because stevia has no calories and is plant-based. It is an option for people who want zero calorie sweetness from a natural source.

## ORIGINS

Stevia is a plant that can be grown in your own garden. The plant is from the Asteraceae family (sunflower family) and is native to South America. Stevia was first consumed over 200 years ago, in South America where the indigenous people used the leaves of the plant to sweeten beverages or chewed them for their sweet taste.

In recent years, the demand for zero calorie sweetness from a natural source has supported stevia's increased use in foods and beverages. Through an evolution of stevia leaf cultivation, improved sustainability in harvesting and production, and more precise herbal extraction, great tasting stevia can now be grown on a commercial scale. Stevia is cultivated mostly in Paraguay, Kenya, China and the United States, and within many other parts of the world, including Argentina, Brazil, Columbia, India and Vietnam.

## EXTRACTING STEVIA'S SWEETNESS

Similar to other plant ingredients such as sugar, stevia is extracted from the stevia plant into a powdered sweetener form. The extraction process involves steeping the dried leaves of the plant, like a tea, and then separating and purifying the best tasting sweet compounds scientifically known as steviol glycosides. The steps of the extraction process include: crushing the leaves, extracting the ingredient with water, filtering and separating the steviol glycosides from plant mass, then further purifying the extract with either water or food-grade alcohol, followed by drying the final high purity stevia extract.



## CULTIVATING STEVIA

Stevia farming, extraction and purification require less water, land, and energy than other naturally sourced sweet ingredients. In communities around the world, stevia farming is not replacing food crops, but instead provides the opportunity to diversify crops that the farmer relies on for income. Stevia farming has become an attractive way to expand job opportunities and wages in many countries.



## STEVIA, REB-A: WHAT IS THE DIFFERENCE?

Purified stevia extract can contain just one steviol glycoside or several. One of the best-tasting and sweetest of all the steviol glycosides is high purity Rebaudioside-A (Reb-A), which can be 200 to 300 times sweeter than sugar. Reb A is also one of the most abundant steviol glycosides found in the stevia leaf.

## WHERE IS STEVIA USED?

Stevia may be found in thousands of foods and beverages around the world, including teas, soft drinks, juices, yogurt, soymilk, granola and snack bars, and baked goods. Stevia is also being used in health snacks, cereal, salad dressings, alcoholic beverages, chewing gum, canned fruit and jam, confections and as a tabletop sweetener.

# WHY STEVIA? Naturally Sourced Sweetness



Humans are born with a preference for foods that taste sweet. Scientists believe that our 'sweet tooth' is an evolutionary advantage since non-toxic foods tended to be sweet. For centuries, worldwide, this 'sweet' desire drove people to seek out sweet foods and ingredients in nature, including honey, maple syrup, sugar cane, sugar beets, sweet corn, agave, fruit, and fruit juices.



## STEVIA: A MORE HEALTHFUL DIETARY APPROACH

While the desire for sweet has not changed, modern lifestyles have. There are fewer opportunities to be physically active and more occasions to eat and drink. As energy expenditure diminished, daily energy requirements have similarly decreased, resulting in today's need to consume fewer calories to manage weight.

Overweight and obesity have become a global public health issue for both adults and children. Added sugars often contribute unneeded calories to the diet. To help balance the diet, consumers express a preference for sweeteners from a natural source with few or zero calories.

Stevia is a naturally sourced, zero calorie sweetener that can be a sensible part of a healthful dietary approach. Stevia is safe for people of all ages. Stevia contributes no carbohydrates and has zero glycemic index, so is appropriate for use by people who need to manage blood glucose levels, such as people with diabetes.

## STEVIA AVAILABILITY

Stevia is available in many ways. Sometimes it is the sole sweetener and other times it is blended with other zero-calorie sweeteners. Often it is blended with sugar in reduced-calorie foods and beverages.

Stevia is used by major food and beverage companies, including The Coca-Cola Company, Danone, PepsiCo, Nestle and Unilever. Stevia may be found in hundreds of foods and beverages around the world including teas, soft drinks, juices, yogurt, soymilk, granola and snack bars, baked goods, cereal, salad dressings, alcoholic beverages, chewing gum, canned fruit and jam, confections and as a tabletop sweetener.



## A VOICE FOR STEVIA

The Global Stevia Institute (GSI) provides science-based information about stevia, nature's zero calorie sustainable sweetener. For more details, visit [www.globalstevia institute.com](http://www.globalstevia institute.com).

# STEVIA IS SAFE

Stevia is a natural origin, zero calorie, sustainable sweetener. The safety of high purity stevia extract for human consumption has been established through rigorous peer-reviewed research. All major global regulatory organizations, including the Food and Agriculture Organization/World Health Organization's Joint Expert Committee on Food Additive (JECFA), the European Food Safety Authority (EFSA), the Food and Drug Administration (FDA), and Food Standards Australia New Zealand (FSANZ), have determined high purity stevia extract to be safe for use by the whole family.

Consumer Group	Safe?	Explanation
Adults	Yes	More than 200 studies attesting to the safety of high purity stevia extract for subjects of all ages. <sup>1</sup>
Children	Yes	Major global regulatory organizations including JECFA, EFSA, FDA and FSANZ have determined that high purity stevia extract is safe for consumption by the general population, which includes children when consumed within the recommended levels. <sup>2</sup>
Women who are pregnant or nursing	Yes	Major global regulatory organizations including JECFA, EFSA, FDA and FSANZ have determined that high purity stevia extract is safe for consumption by the general population, which includes pregnant women when consumed within the recommended levels. <sup>2</sup>
People with or concerned about diabetes	Yes	High purity stevia extract has no effect on blood glucose levels. It contributes no carbohydrate or glycemic load (a measure of the effect of a carbohydrate on blood sugar) so may help people with diabetes enjoy sweetness while managing dietary carbohydrates. EFSA, JECFA, and the FDA recognize stevia as safe for people with diabetes. <sup>1,2</sup>
People with or concerned about cancer	Yes	High purity stevia extract is non-carcinogenic. <sup>1</sup>
People concerned about weight management	Yes	High purity stevia extracts provide no calories and has no known association with increased fat tissue in the body. <sup>1</sup>
Food allergies	Yes	There are no known allergies associated with high purity stevia extract used in foods and beverages. <sup>1</sup>

<sup>1</sup>EFSA Panel on Food Additives and Nutrient Sources, Food (ANS) European Food Safety Authority (EFSA), Parma, Italy, 2010

<sup>2</sup>Safety Evaluation on Certain Food Additives Prepared by 69<sup>th</sup> Meeting of Joint FAO / WHO Expert Committee on Food Additives (JECFA), 2.2.5

## NATURALLY SOURCED STEVIA SWEETENS A REDUCED-CALORIE DIET

With rising rates of overweight and obesity across the globe, health recommendations encourage people to reduce their energy intake to better manage their weight. Stevia is a safe, naturally sourced zero calorie sweetener suitable for use by the whole family. Foods and beverages with stevia can be a sensible part of a healthful dietary approach.

## THE GLOBAL STEVIA INSTITUTE

The Global Stevia Institute (GSI) provides science-based information about stevia, nature's zero calorie sustainable sweetener. The GSI is advised by an international board of leading scientists and health professionals. The GSI is supported by PureCircle, Ltd, a global leader in purified stevia leaf extract production.

Leading authorities have reviewed more than 200 expert studies that attest to the safety of stevia. Based on this evidence, they have established an Acceptable Daily Intake (ADI) for high purity stevia extract which is required for all food additives and applied to all consumer groups. The ADI is defined as the amount of a substance that people can consume on a daily basis during their whole life without any appreciable risk to health.

- The ADI was set for steviol glycosides, the sweet components extracted from stevia leaf, and is expressed as steviol equivalents of 4 mg/kg of body weight per day.
- This equates to approximately 12 mg of high purity stevia extracts/kg of body weight per day. Food and beverage manufacturers use the ADI to guide how they use stevia as an ingredient in products according to regulation.
- The ADI was set by reviewing many research studies, including those demonstrating that a daily amount of steviol glycosides of up to 1,000 mg/person/day were well-tolerated by people with type-2 diabetes and people with normal glucose metabolism.
- To put the ADI for steviol glycosides into perspective, a 70 kg (150-pound) person would need to consumer ap-



## STEVIA IS INGESTED, BUT PASSES THROUGH THE BODY WITHOUT EFFECT

Largely responsible for stevia's safety and zero calories is the fact that steviol glycosides are poorly absorbed in the body. Steviol glycosides pass through the upper gastrointestinal tract fully intact. Gut bacteria in the colon hydrolyze steviol glycosides into steviol by snipping off their glucose units. Steviol is then absorbed and primarily metabolized by the liver, forming steviol glucuronide, which is excreted in the urine. Research also shows that there is no accumulation of stevia (or any component or by-product of stevia) in the body.



## CONTACT

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For more about stevia safety, regulatory policy and metabolism, visit [www.globalstevia institute.com](http://www.globalstevia institute.com)

