

Stevia, the Sweet Leaf

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Although it is widely used in other countries as an alternative to sugar, the Peruvian herb *Stevia rebaudiana* is unfamiliar to most Americans - but it is becoming more widely known, thanks to the efforts of herbalists and dieters.

Stevia's sweetness is the most remarkable thing about an otherwise nondescript plant. It is estimated to be 300 times as sweet as sugar. Dried stevia leaves can be ground very fine or brewed as a tea for use as a sugar substitute. A pinch of stevia can be added to almost any herbal tea blend to improve its flavor.

Stevia does more for the body than taste sweet and save calories. It has been used in Latin America and the Orient as a tonic that stimulates mental alertness and counters fatigue, facilitates digestion and gastrointestinal functions, regulates the metabolism and has a mild diuretic effect, regulates blood pressure, and has a therapeutic effect on the liver, pancreas and spleen. In addition, it has cosmetic uses. Blends of stevia and chrysanthemum or clay are said to help heal blemishes, relieve the itching of insect bites and prevent wrinkles.

In the early 1970s, Japanese food producers began importing stevia from Paraguay and Brazil. Since then, Japanese scientists have conducted extensive research on its properties, safety and effectiveness. In that country, stevia is used commercially in prepared foods such as chewing gum, candies, soft drinks, juices, frozen desserts, low calorie food, soy sauce, and baked goods. Extensive testing has shown stevia to be non-toxic, safe for diabetics, and beneficial in cases of obesity. A 100 mg. serving of stevia contains less than 1/2 calorie. Japanese researchers Hidco Fujita and Tomoyoshi Edahiro summarize the research as showing "no abnormality on body weight change, feed intake, hematologic tests, autopsy, pathologic histology tests, etc." They conclude that there are "no harmful effects of stevia."

A Hiroshima University of Dentistry study showed that, unlike sugar, stevia is not a source of nutrition for oral bacteria and that it actually suppresses bacterial growth. Stevia may help prevent cavities as well.

In an investigation of possible anti-diabetic

properties, Dr. Olivido Miguel, former professor of pharmacology of Paraguayan National University, used a dry extract from the plant in doses of 200 mg. per day, the equivalent of an infusion made from 2 grams (about 1/2 teaspoon) of leaves. The diabetic patients "did not show any manifestation of intolerance or toxicity; they felt a feeling of well being unknown to them up to that time."

At the Seventh Congress of the International Federation of Diabetes, a rigorous study was reported by Paraguayan physicians in which the plant was shown to benefit hypoglycemic patients. No signs of intolerance were recognized, including renal function, liver and digestive function, and hematology. Similar results have been reported by other researchers. The beneficial relationship between stevia and the regulation of blood sugar appears to be achieved with very small quantities and it persists over a wide range of administered amounts.

Unfortunately, the U.S. Food and Drug Administration does not accept medical research conducted in other countries, so it considers stevia of "unproven" safety. The Stevia Company in Illinois has obtained a patent on the use of stevia in U.S. food products, and it is conducting research that may satisfy FDA requirements. For a few years, in response to lobbying efforts by artificial sweetener manufacturers, the FDA banned the importation of stevia. However, the embargo was lifted in 1995 and stevia can now be imported and sold in the U.S., provided it is not labeled as a sugar substitute.

To date, eight sweet diterpene glycosides have been isolated from *Stevia rebaudiana*, including stevioside and rebaudioside. Stevia is reported to be highly stable in both heat and acids. The sweetening characteristics are similar to sucrose and it is relatively free of aftertaste.

Stevia's flavor is not identical to sugar and its form is very different, so you will want to experiment. Uwanna D. Thomas wrote about stevia in the December 1991 *Herb Companion*, noting, "Though stevia's flavor is pleasant, it is quite different from that of sugar. It's more like the nectar of wild honeysuckle, that childhood summertime treat, but much sweeter and slightly stronger. Stevia

may be used to sweeten everything from baked apples to zucchini loaf. For use in baking, the leaves are best dried and finely ground with a mortar and pestle. Dried stevia keeps its flavor for months. Use one teaspoon in place of one cup sugar."

The sweetness of stevia lasts slightly longer than that of sugar and some herbalists have described it as tasting like licorice, though it contains no licorice or related compounds. The licorice taste may be strong when stevia extract is sampled by itself, but it generally disappears when diluted in tea or cooking. Those who find the dry leaf or raw extract unpleasant usually enjoy stevia in tea or baked goods, especially when it is combined with other flavors. A single small leaf will sweeten a cup of tea or coffee, and a teaspoon of ground stevia is sufficient for most standard cake, sweet bread, or cookie recipes. Because a teaspoon of ground stevia replaces a cup or more of sugar, the batter's consistency will change and it may be necessary to add additional flour or reduce the amount of liquid to compensate.

In Cooking and Baking:

1 teaspoon ground stevia = 1 cup sugar
(reduce liquid or add flour as needed)

The following banana bread recipe won a red ribbon at the 1987 Arizona State Fair. It appears in the book *Sugarfree Cooking, Volume 1* by Nicole J. Walker (1341 67th St., Downers Grove IL 60516).

Preheat oven to 350°F. Combine 1/4 cup melted butter with 1 cup ripe bananas, 1 teaspoon vanilla, 2 eggs, and 1/3 cup milk. In a large bowl combine 2 1/2 cups whole wheat flour, 1 teaspoon baking soda, 1 teaspoon ground stevia, 1/2 teaspoon salt, and 1/2 cup chopped nuts. Add the banana mixture to dry ingredients and stir until moistened. Pour into a greased 9 x 5-inch loaf pan. Bake 1 hour, or until a toothpick inserted in the center comes out clean. Remove from the pan and cool.

In the Winter 1990 issue of *The Herb Quarterly*, Bertha Reppert reported on stevia and provided this recipe for Sweet Rosie O'Grady Herb Tea:

Combine 1 cup dried mint leaves, 1 cup dried rose geranium leaves, 1 cup dried, unsprayed red rose petals, and 1 teaspoon dried ground stevia leaves (or 1 tablespoon whole dried leaves). Mix all the ingredients thoroughly and store in a tightly covered jar. Use 4 teaspoons per 4 cups of boiling

water. Let stand, strain, and serve.

To make a low calorie, no-sugar cranberry sauce, assemble 1 package fresh cranberries, 1 cup apple cider vinegar, 1 1/2 teaspoons stevia concentrate or 1 teaspoon ground stevia leaf, a pinch of nutmeg and cinnamon, and 1/2 teaspoon lemon juice or a thin slice of lemon cut into small pieces. Wash the cranberries, remove stems and discard any berries that aren't perfect. Combine all of the ingredients in a stainless steel or enamel pot (not aluminum) and boil for about 3 minutes, or until most of the cranberries have popped. In a bowl combine 2 tablespoons of the cooked cranberry liquid with 1 tablespoon dry wine or water and mix with 1 heaping teaspoon of arrowroot powder. Stir well with a wire whisk to make a smooth paste. Add this mixture slowly to the cranberry sauce, stirring well, until the mixture thickens (about 1 minute). Pour into a container or mold that can be refrigerated. This cranberry sauce goes well with all your finest dishes. Try it on grapefruit halves or in lemonade as well.

Stevia Concentrate

In *Sugarfree Cooking, Volume 2*, Nicole Walker described how to make the following stevia concentrate.

2 cups distilled water
1/2 ounce dried stevia (cut and sifted)

Bring the water to a boil, reduce heat to medium, add stevia, cover, and boil for 3 minutes. Remove from heat (keep covered) and allow the herb to steep until cool. Strain through cheesecloth and refrigerate. The concentrate will be a dark greenish black in color.

Sweetness Equivalents (Approximate)

40 drops concentrate = 1 cup sugar
10 drops = 1/2 cup sugar
5 drops = 2 tablespoons sugar
1 drop = slightly sweeter than 1 teaspoon sugar

To make a stronger concentrate, let the tea stand several minutes so that the sediment falls to the bottom. Slowly pour it into a separate pan or double boiler, leaving the sediment behind. Gently simmer the liquid (uncovered) until it is reduced by half. This concentrate will be twice as strong as the original tea.

To sweeten herbal teas, try placing dried stevia in an infuser ball and remove when desired sweetness has been reached, leaving the tea to steep longer. This stevia can be reused. ☆☆☆The End☆☆☆