Steviol glycosides (Stevia)

Steviol glycosides are natural sweet tasting constituents of Stevia rebaudiana a plant native to South America, belonging to the Compositae family. Stevia was introduced to Australia in 2008 but it has been used by South American tribes for centuries[1].

How are steviol glycoside made?

Steviol glycoside preparations are obtained by extraction from the leaves of the plant, followed by further concentration, purification and (usually) spray-drying.

Steviol glycoside preparations usually contain as the major components the glycosides Stevioside and Rebaudioside A, in various amounts, along with smaller amounts of other steviol glycosides, such as Rebaudiosides B and C, Dulcoside A, Rubusoside and Steviolbioside [1,2].

Where are steviol glycosides used?

Steviol glycosides are stable when added to foods and beverage under normal processing and storage conditions. They are stable to both temperature (heating) and hydrolysis (reactions with water).

They are commonly used in flavoured waters, carbonated soft drinks, and recently approved for use in fruit juice drinks. Additionaly they are used in ice cream, yoghurt, baked goods, and confectionery.

How do I know steviol glycosides are added to my food or drink?

Ingredients in packaged foods must be listed from greatest to smallest by ingoing weight including added water.

Steviol glycosides must be labelled as follows:
"Sweetener (960)" or
"Sweetener (steviol glycosides)"

How are steviol glycosides handled by the body?

Upon digestion, steviol glycosides are broken down to steviol in the gut. Steviol is excreted in the urine as steviol glucuronide.

Steviol glycoside preparations (min. 95% Steviol glycosides) are approximately 200 to 300 times sweeter than sucrose.

Safety profile of steviol glycosides

The safety of steviol glycosides has been assessed extensively since the 1970s by several regulatory agencies and scientific bodies including JECFA, EFSA, the US Food and Drug Administration and Health Canada. Steviol glycosides are approved in many countries worldwide including Switzerland, Australia, New Zealand, Japan, China, Korea and Brazil [2].

Food Standards Australia New Zealand (FSANZ) reviewed all the studies and has classified steviol glycosides as permitted food additives listed in Schedule 8. Permissions for different food categories are provided within the table in Schedule 15. (Australia New Zealand Food Standards Code 2002).

Are steviol glycosides safe for every-body?

No population group has been excluded from using steviol glycosides. It is appropriate for any person wishing to reduce sugar or energy intake.
There are no warning labels or information statements required for products sweetened with steviol glycosides.

Fast facts

Safety

Steviol glycosides are safe for:

People with diabetes and impaired glucose tolerance

Pregnant women

Steviol glycoside can be used by pregnant women and nursing mothers.

It is important for all pregnant women to consult with their doctors regarding nutritional needs during pregnancy.

Children

Although foods made with low joule sweeteners are not usually recommended as part of a child's diet, the steviol glycosides in foods and drinks is not hazardous to a young person's health.

With obesity rates rising amongst Australian children and adolescents, steviol glycosides-sweetened beverages may help this group reduce their energy/kilojoule intake without compromising their overall diet.

Sweetness relative to sugar

Steviol glycosides have a sweetness of between 200 and 300 times that of sucrose[2].

By having a very high sweetening power compared to sugar, non-sugar sweeteners are used in minute amounts.

For more information

FSANZ website

1.ISA 2015. Fact Sheet Steviol Glycosides. Accessed 03/09/2019. https://www.sweeteners.org/assets/uploads/articles/files/Steviol%20Glycosides_Fact%20Sheet_2015.pdf 2.FSANZ Intense sweeteners http://www.foodstandards.gov.au/consumer/additives/Pages/Sweeteners.aspx 2. FSANZ A1132. Accessed 3/9/2019 http://www.foodstandards.gov.au/code/applications/Documents/A1132%20Definition%20of%20steviol%20glycoside%20SD1.pdf