

Stevia-sweetened strawberries point to low-cal fruit potential

By Stephen Daniells, 06-Oct-2009

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Replacing the sugar in strawberries with the natural sweetener stevia could lead to a new range of low-calorie dried fruit products, says a new study from the Americas.

Researchers from the US and Brazil report the partial removal of sugars such as sucrose, fructose and glucose from strawberries, and the partial replacement with stevioside and rebaudioside in order to maintain sweetness.

"As consumers have become more aware of different diets and their impact on health, food companies and marketers have begun to dedicate more time and effort to develop healthier and more nutritive products," explained the researchers from the University of Nebraska-Lincoln and the Federal University of Ceará.

"Sweeteners derived from S. rebaudiana show great potential as zero-calorie sweeteners in the snack and quick-meal foods including more specifically in food products based on dried fruits. Such applications currently involve the addition of large amounts of sugar during the dehydration stages and coating of the dry fruit."

"Consequently, considerable caloric loads result in a fruit product that is sometimes viewed negatively by consumers, limiting consumer acceptance," they added.

Interest in stevia has been intense, particularly since the FDA issued its non-objection in December that the stevia-derived sweetener Reb A is generally recognized as safe (GRAS) as a food additive.

Differentiation must be made between rebaudioside A and steviol glycosides in general. Rebaudioside A, also known as Reb A and rebiana, is a high-intensity sweetener derived from the stevia leaf. It is said to be approximately 200 times sweeter than sugar.

The new study looked at the development of a process called dual-stage sugar substitution (D3S) to substitute sugar in strawberries with stevioside and rebaudioside.

The first stage of the process involved the ultrasonic removal of the sugars present in the strawberries, followed by ultrasonic incorporation of a stevia powder composed of 10 percent stevia and 90 percent maltodextrin (Puritan's Pride).

"The sweetness power of Stevia-based sugars is approximately 300 times higher than that of sucrose, thus the incorporation of 1 percent of stevia-based powder (steviol glycosides 10 percent plus maltodextrin 90 percent) into the fruit corresponds to the incorporation of 30 percent of sucrose," explained the researchers.

"The D3S process resulted in lower soluble solids gain if compared to the osmotic dehydration of strawberries in sucrose solutions, which is interesting because of the higher sweetness power of steviol glycosides, otherwise the final product could be considered too sweet," they added.

"The work described in this research is relevant to the production of dried fruits. A process to produce low-calorie dried fruit is presented. The process removes high-calorie sugars from the fruit and replaces it with a natural low-calorie sugar restoring the sweetness of the fruit," they concluded.

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"Dual-stage sugar substitution in strawberries with a Stevia-based sweetener"

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Disclaimer: This article has been updated to include additional quotes in order to fully explain the relevance of the technology. The initial article lacked clarity. Apologies

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